ENGINEERING, REIMAGINED

DRAFT

FINAL WATER AND WASTEWATER MODELS REPORT

Prepared for the Town of Collbran
1010 High Street, Collbran, CO 81624

September 2024

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List of Figures and Tables

Executive Summary

This report provides a comprehensive analysis of the current water and wastewater infrastructure in the town of Collbran, Colorado, assessing its capacity for current and future demands. The evaluation includes model development, calibration, and scenario testing for water and wastewater systems.

Water System Analysis:

MODEL DEVELOPMENT: The water model was created using InfoWater software, incorporating data from previous WaterCAD models, ArcGIS, and fire hydrant flow tests. Historical water flow data from 2010-2024 was used to simulate current conditions, including maximum daily demand.

FIRE HYDRANT TESTING: Calibration of the model involved fire hydrant testing across various locations in the town. Two rounds of testing were conducted, revealing pressure and flow variations across different areas. A particular focus was on identifying operational inefficiencies, such as a malfunctioning valve on the main line going to the Plateau Valley School, which impacted water pressure.

SCENARIO EVALUATION: The model evaluated three scenarios, including the current system and a proposed new water line for Plateau Valley School. The system's fire flow capability was assessed, with significant variation in flow capacity depending on location within the town.

Wastewater System Analysis:

MODEL DEVELOPMENT: The town's gravity-fed sanitary sewer system was modeled using Bentley SewerGEMS software. The focus was on collection lines, not including service lines, with design assumptions guided by Colorado Public Health and Environment regulations.

KEY FINDINGS: The inspection revealed that many sewer mains have velocities below the required 2 feet per second (fps), indicating potential for future buildup and increased maintenance. This is a common issue in small towns with older lines. Additionally, the peak hour capacity of all lines is below the required capacity. To address this issue, the town could consider increasing the size of the lines to boost velocity, but this would be a costly project. The report includes a comparison of existing and future system velocities to anticipate the need for system upgrades.

LIFT STATION EVALUATION: Others have proposed upgrades for the Plateau Valley School Lift Station, which include increasing the pump size and confirming that the design complies with the criteria set by the Colorado Department of Public Health and Environment (CDPHE). These proposed upgrades have also been reviewed.

Key Recommendations:

WATER SYSTEM: Address the malfunctioning valve and air release identified during testing to improve pressure, particularly in areas with low flow. Consider the future installation of a booster station near the new storage tank.

WASTEWATER SYSTEM: Sewer mains with velocities below two fps will require more frequent maintenance, and improvements should be prioritized in future expansions to provide compliance with state regulations.

This report provides vital insights and recommendations to support future infrastructure developments in Collbran, confirming that both water and wastewater systems can accommodate future growth and expansion projects.

Scope

This report compiles the analysis of the town of Collbran's current water and wastewater infrastructure to assess the existing and future capacity for water and wastewater within the town and future expansions. Specific water projects include a water model deep dive of the existing conditions in the Town, calibrating the model using fire hydrant testing, and evaluating scenarios for future expansions of the town, including a development behind Terell Park and the Plateau Valley School District (PVSD) expansion. Wastewater projects include a model deep dive of the existing wastewater system in the Town and the evaluation of the replacement Plateau Valley School Lift Station (PVSDLS).

Water

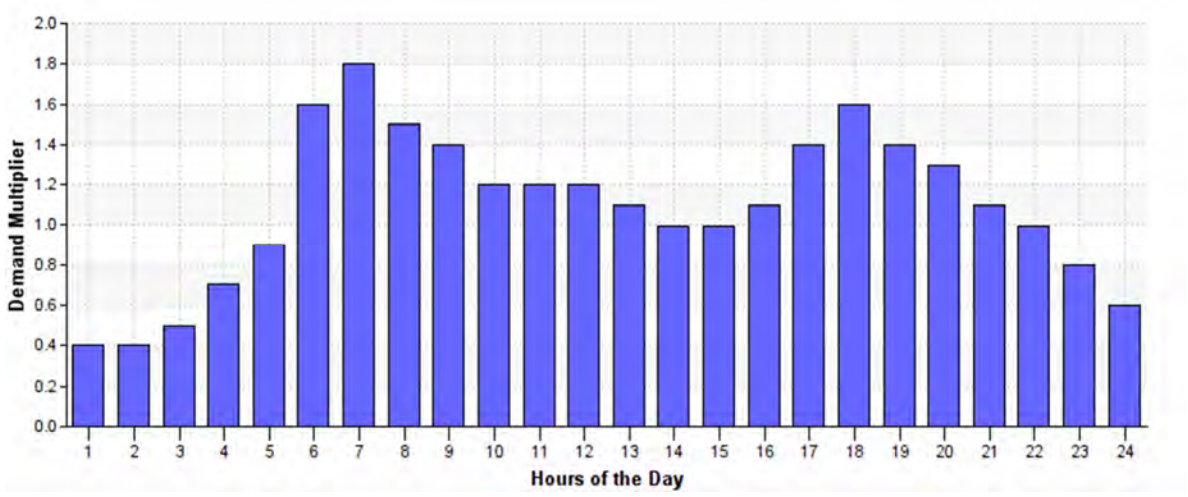
This section will cover the water model that was developed for the Town of Collbran. The water model was created using the InfoWater Modeling software that was developed by Innovyze and purchased by Autodesk. The water model was developed using the following information:

- Existing Water Model (WaterCAD) provided by Westwater Engineering
- ArcGIS Online Information provided by the Town of Collbran
- Fire Hydrant Flow Test collected in the field by KLJ Engineering
- Flow Data provided by the Town of Collbran

Model Deep Dive

To create the model, the original model from Westwater Engineering was converted from WaterCAD to InfoWater. The model was then refined using ArcGIS Online data provided by the Town. Monthly water flow data from the Town was provided for the years 2010 to 2024. A maximum daily flow of 138,253 gpd was recorded on July 15, 2021, and was used to set a maximum day demand for the model. This demand was converted into a 128-gpm flow based on an 18-hour day and then divided amongst the different junctions in the model. A Diurnal Curve pattern was then applied to simulate water demand variations over 24 hours; see Figure 1 below. The diurnal curve pattern was assigned to all demand nodes within the system.

Figure 1: Daily Diurnal Demand Pattern



Initial tank levels were full at the start of the modeling scenario. Appendix B shows the modeling results and pressure of the system during the max day scenario. Reviewing the modeling results, pressures west of Plateau Avenue range between 80 and 90 psi. At the Mesa County shop site, the pressure gauge shows readings of between 50 psi and 60 psi. Pressure to the East of Plateau Avenue read between 40 psi and 70 psi. There is a series of low-

pressure readings to the east of the water tank near the water treatment plant, and there are plans for a future booster station at this location.

To evaluate the fire flow capacity in the system, a demand of 1000 gpm was applied to the nodes nearest the fire hydrants in the system. Fire flow is defined as the flow through a hydrant before the system reaches 20 psi. A fire flow scenario was then run using the modeling software, which provides the reading on the hydrant's available flow and max flow with corresponding pressures. For this report, the focus was on the available flow, which is displayed in Appendix A. The scenario showed fire flow availability near the center of town of 1,500-gpm and reduction to approximately 500 gpm as we get near the outskirts of town and where there is a smaller water main.

Model Calibration – Fire Hydrant Testing

This section provides insight on the efforts in the field to calibrate the water model. Calibration efforts consisted of a series of fire flow tests across the town. Results from the fire flow test were compared to model results to improve the model and identify discrepancies.

PRELIMINARY TESTING (7/23/2024)

Working with the public works director of the Town of Collbran, fire flow testing was conducted to estimate the operational flows of the water service lines in the town. Various fire hydrants throughout the system were opened and tested for flow rate, static pressure, and residual pressure using a swivel diffuser and flow gauge. During testing, the public work employees also supplied data on changes in water height and volume in the water tanks. The tank information represents both tanks at similar elevations and supplies water in tandem. The hydrants are listed in the testing order and numbered based on the original exhibit created for testing. Hydrant locations are labeled in Appendix A. The information is summarized in the table below.

Table 1: Fire Hydrant Testing Data - Day 1

Hydrant ID	Flow (gpm)	Static Pressure (psi)	Residual Pressure (psi)	Tank Level Start (ft)	Tank Level End (ft)	Tank Volume Start (gal)	Tank Volume End (gal)
8	1060	40	38	8.34	8.25	534802	534200
7	950	32	30	8.2	8.16	533050	532000
6	980	34	30	8.12	8.05	531000	529800
10	920	28	29	8	7.94	528800	527600
12	640	15	14	7.9	7.85	526500	525700
11	0	0	0	7.8	7.73	524800	523100
1	200	6	6	7.66	7.64	521800	521300
9	1130	45	44	-	-	-	-

Field Notes from Testing:

- Hydrant 7 had some leaking at the connection of the swivel diffuser to the hydrant outlet that may have affected the flow and pressure readings.
- Hydrant 11 had low flows due to poor operation of pumps to the hydrant.
- Hydrant 9 was added later in the testing, so information on the tanks was unavailable at the time of testing.

CONTINUED TESTING (7/30/2024)

Additional testing near hydrant one was conducted to address previous concerns of low-pressure readings. A flow test was redone at hydrant one to verify the low pressure. Four hydrants along the same main line as hydrant one to

test for potential issues with the main line or connections. The tank levels were not collected during this testing. Hydrant locations are labeled in Appendix A.

Table 2: Fire Hydrant Testing Data - Day 2

Hydrant ID	Static Flow (gpm)	Residual Flow (gpm)	Static Pressure (psi)	Residual Pressure (psi)
1	480	480	8	7
3	490	500	6	7
2	510	520	7	8
4	720	700	19	18
5	720	740	18	19

By testing hydrants along the main line heading east, a pattern of low-pressure readings ended after a valve near hydrant four on the main line. The valve could not be opened, indicating that there may be an issue with its operation, resulting in the low-pressure readings on the west side. This valve will need to be replaced in order to move forward with the analysis of adding the pipeline to Plateau Valley School. A detailed description of the location of the valve in question is attached in Appendix A.

CALIBRATION RESULTS

The results of the calibration efforts revealed a significant pressure difference between the County shop and the future location of the school's water tank. While the flow in the field was approximately 500 gpm, the pressure was unusually low when flowing from the hydrant and other hydrants in the area. This difference was found to be so substantial that it exceeded the capabilities of the calibration model. It is possible that the system itself may be causing the low pressures. Upon reviewing the system, a valve and an air release were identified as potential causes of the low pressures. A recommendation has been made to the Town to replace these components, followed by a reevaluation of the fire flow in the area to gain a better understanding of the system's pressure.

Scenario Evaluation

Three (3) scenarios were developed in the model. The first scenario is the existing Collbran system with corresponding flows and fire scenarios. Demands and infrastructure was provided by the Client for development of the model.

Evaluation of New Line to Plateau Valley School

The second scenario incorporates the new school water tank and a 10-inch water line connecting the tank to the school. A 100 gpm demand was assumed for the school, with the tank's high water elevation set at 6,067 feet. This configuration, including the 10-inch line, resulted in a pressure of 131 PSI at the school.

The third scenario was developed to evaluate the potential for the new tank to back-feed into the Collbran system. Since the school tank's high water level is below the existing tanks' low water levels, the model was set up with the existing tanks assumed to be empty at the time of running and the school tank in operation. The water control system will need to be evaluated to determine if it can operate this configuration while supplying the school tank from the water treatment plant. Additional control mechanisms will be required to allow both tanks to be taken offline. In this scenario, using 35 psi as the cutoff, the system can only back feed to Orchard Avenue with the current school tank.

Wastewater

Town of Collbran | Model Development

PURPOSE

The purpose of the Town of Collbran sanitary sewer model is to examine the existing conditions of the sanitary line capacity throughout major points in town for future development and planning purposes. The existing sanitary sewer system is gravity-fed, and only lines within the downtown area were modeled.

MODEL METHODS

The Town's sanitary sewer system was modeled using Bently SewerGEMS with sewer main and manhole data imported from the Town's GIS shapefiles and manhole dip sheets provided by other engineering consultants for the 2019 CIP. Assumption exhibits of the model results were created using ArcGIS Pro and are in Appendix B. The calculation method used was the SewerCAD Convex GVF. Sanitary design flows were found using the Colorado Public Health and Environment regulations referenced below and in Appendix B.

Table 3: Summary of Code Regulation 5 CCR 1002-43

Building Type	Building Specifics	Flow Rate (gpd)
Residential	Single-family dwellings (4-person home)	300
	Hotels and motels per room	75
	Multi-family dwellings or apartments	75
	Mobile home park, per space	300
Commercial	Barber and beauty shops, per chair	100
	Laundries, self-service per commercial washer	400
	Office buildings per employee per eight-hour shift	15
	Stores and shopping per square foot of retail space	0.1
	Fairgrounds, per person attending	5
Institutional Wastewater without kitchens, unless otherwise noted	Churches per seat; warming kitchen only, no major food service	5
	Hospitals per bed space	250
	Schools, Boarding per person	100
	Schools, Day with cafeterias, gym and showers	25
Food Service Establishment	Restaurant open 1 or 2 meals per seat	50
	Restaurant with paper service only per seat	30
	Additional for bars and cocktail lounges per seat	25

Table 3 provides guidance for design flows based on a building's use. Flow rates designated for each property is shown in Appendix B. Assumptions made regarding building use are listed below:

- Residential homes were assumed to have 4 occupants unless the house was notably larger than average.
- Sections of the Town were grouped to simplify the model.
- Sanitary sewer flows were all sourced from manholes rather than numerous individual tie-ins. Appendix B demonstrates how these were distributed.
- The Job Core facilities were treated as boarding schools.

Modeling assumptions include:

- Pipes were all assumed to be made from clay with a Manning's roughness coefficient of 0.013.

- Pipes that did not have a given length used a scaled length found between corresponding manholes.
- All manholes were assumed to be half-benched.
- The head loss method used was HEC-22 second edition.
- The bottom elevation of every manhole was assumed to be to the same as the invert elevation of the downstream sewer main.
- Manholes that didn't have a corresponding dip sheet had their elevations assumed. These are noted in Appendix B.
- Manholes with no available information were excluded from the model.
- Flows were considered to be constant throughout the day rather than creating a time series for peak hourly demand.
    - A peak hour flow model was also created using a steady state model.

CDPHE CRITERIA

The required velocity for sanitary sewers is 2 fps according to the Colorado Public Health and Environment regulations. This provides that build-up and the formation of H_2SO_4 is limited. Pipes must also be sized to have a maximum depth of no more than 80 percent of its internal diameter during peak hour flow.

Plateau Valley School Lift Station

The proposed upgrades to the lift station at PVSD include upgrading the size of pumps going from the pump house to the wastewater treatment plant at the top of the hill. The force main from the pump station and wet well will remain unchanged. All design work is being done by others and has been reviewed to meet CDPHE criteria and Town standards.

Results

Water

The water model for the Town of Collbran was developed using InfoWater Modeling software, based on an existing WaterCAD model provided by other consultant engineers during the 2019 Capital Improvement Plan (CIP). The model was refined with data from ArcGIS Online, flow information from the Town, and field-collected fire hydrant flow tests by KLJ Engineering. The model simulated daily water demand using a diurnal curve and assessed pressures across various areas of town. Pressures west of Plateau Avenue ranged from 80-90 psi, while pressures to the east varied between 40-70 psi, with lower readings near the water treatment plant. A fire flow scenario demonstrated that the central town area had available flows of 1,500 gpm, which decreased to approximately 500 gpm on the outskirts. Calibration efforts included multiple fire hydrant flow tests, revealing some discrepancies in pressure readings, particularly at hydrant 11 and a valve near hydrant 4. Further investigation indicated that malfunctioning valves and air releases might be contributing to the low-pressure readings. Recommendations were made to replace these components for improved performance. Given the system's age and the town's size, it's suggested that the town either has sufficient tanker trucks for fire protection or upgrades the main lines in town to a minimum 8" diameter based on CDPHE criteria.

Wastewater

Many sewer mains had a calculated velocity of less than 2 fps. Exhibits in Appendix B show what pipes have velocities that are less than the two fps standards and which meet the standards for both the existing and future systems. In the future, sewer mains with a velocity below two fps may experience build-up and require more intensive maintenance. The velocity was increased throughout the system when a basic model was created to model potential future developments. An exhibit showing an estimate of future pipe velocities and a comparison to the existing system can be found in Appendix B.

Appendix A - Water

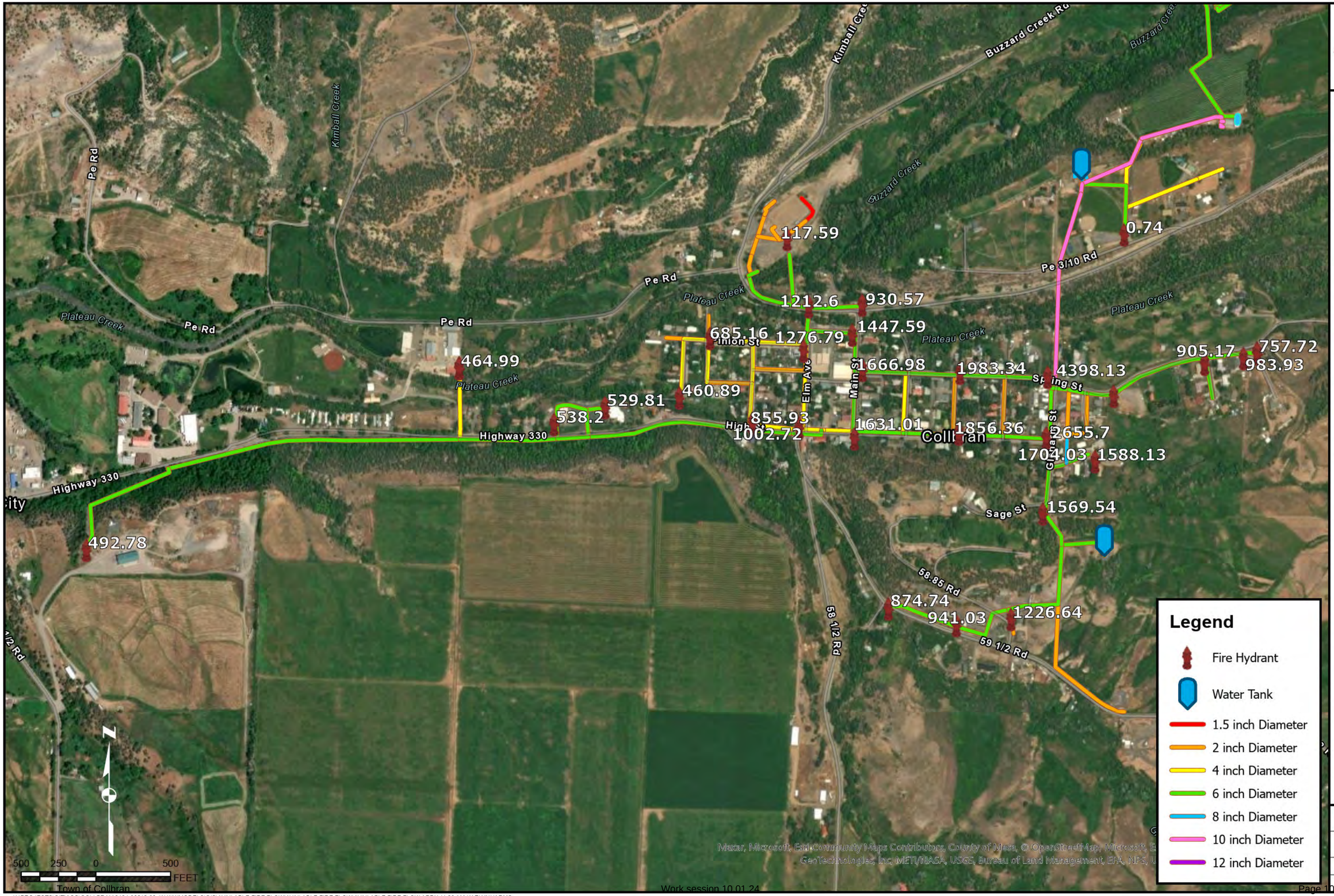


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EXHIBIT 1

Available Fire Flow at 20 psi

Town of Collbran Water Model Analysis

HORIZONTAL DATUM: NAD 1983 STATEPLANE COLORADO CENTRAL FIPS 0502 FEET
VERTICAL DATUM: NAVD 88

PROJECT NUMBER: 2404-00219-03
SITE LOCATION: Collbran, CO
DATE: SEPTEMBER 6, 2024
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Town of Collbran

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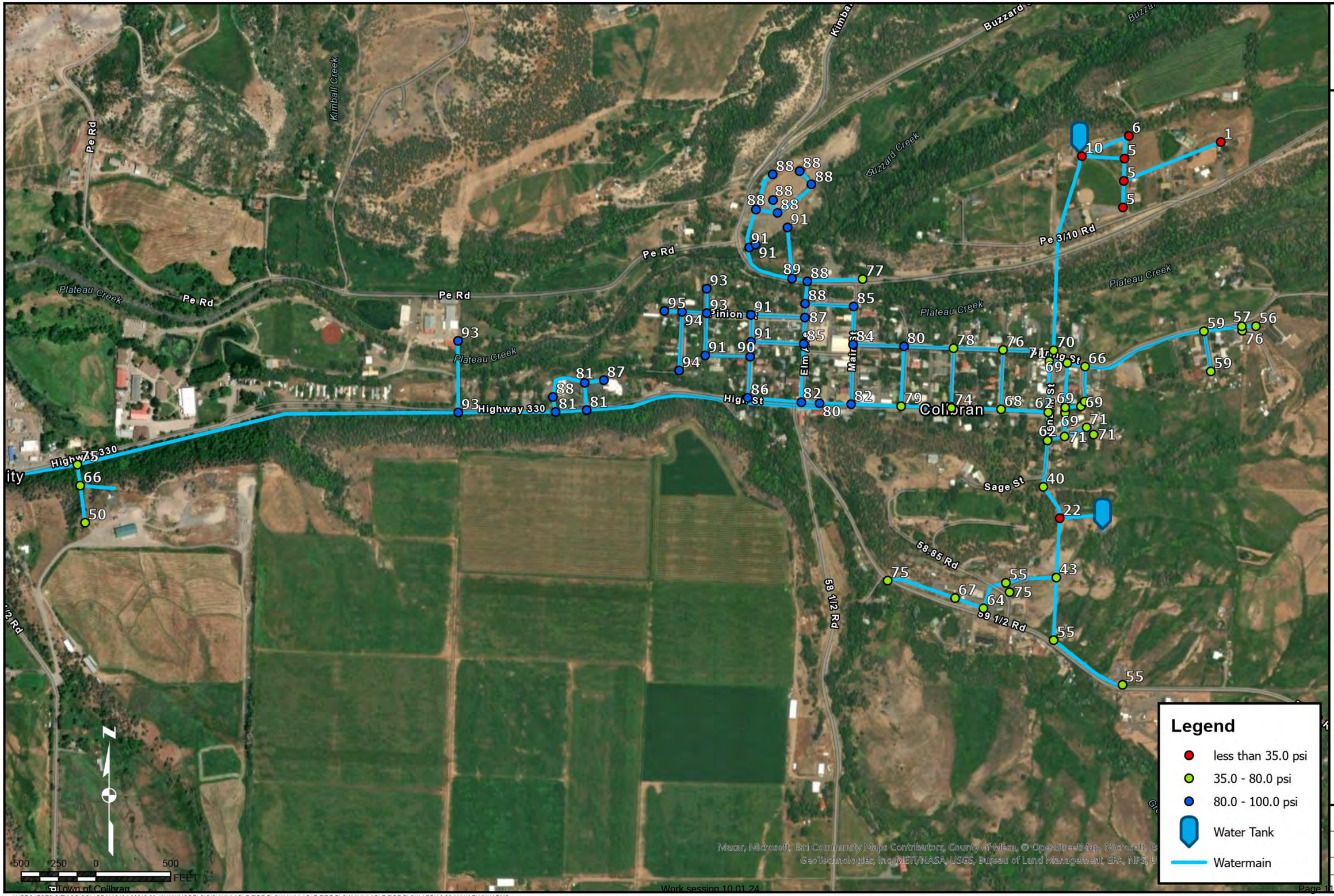

EXHIBIT 2
Max Daily Pressure
Town of Collbran Water Model Analysis
HORIZONTAL DATUM: NAD 1983 STATEPLANE COLORADO CENTRAL FIPS 0502 FEET
VERTICAL DATUM: NAVD 88

PROJECT NUMBER:	2404-00219-03
SITE LOCATION:	Collbran, CO
DATE:	SEPTEMBER 16, 2024
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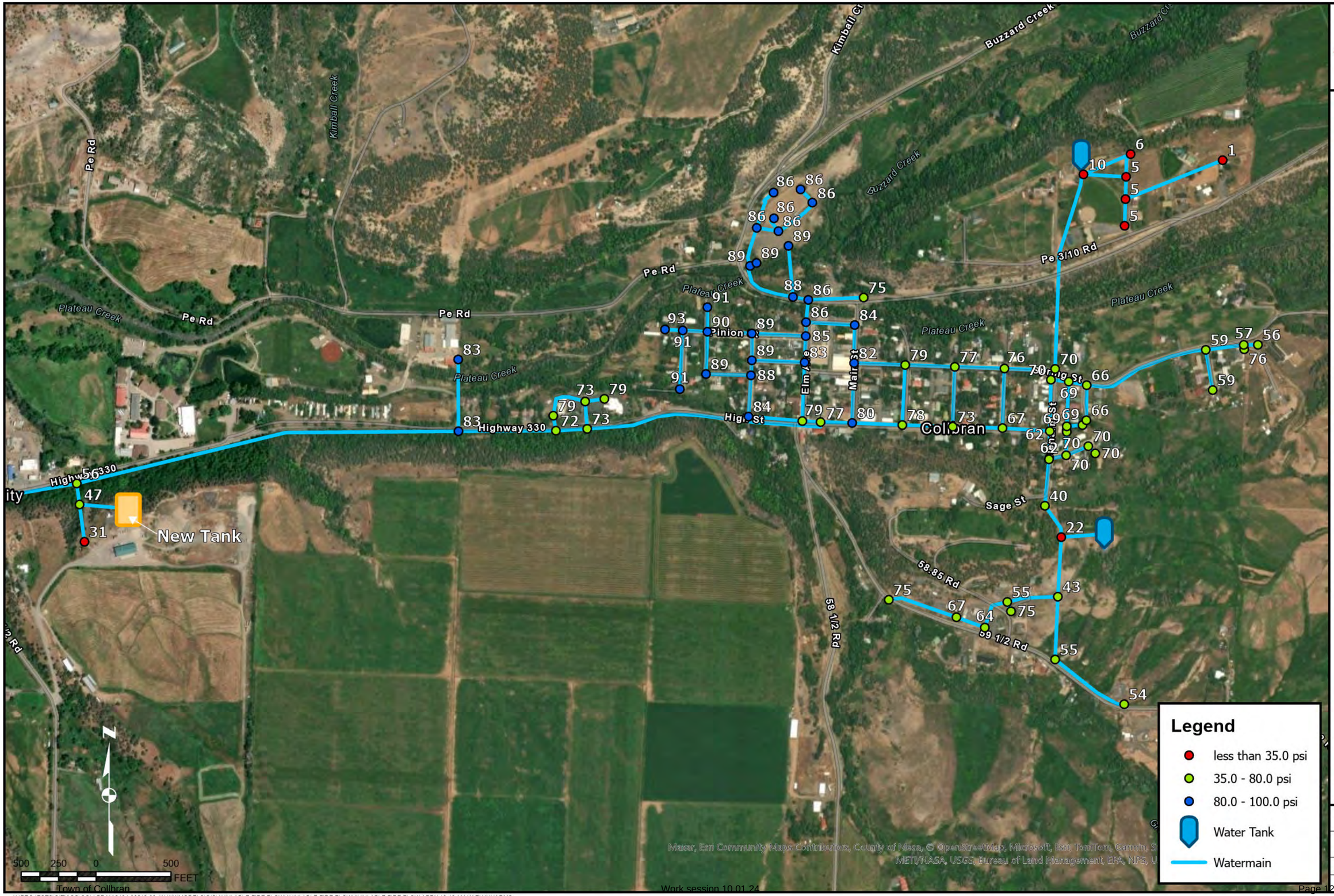

EXHIBIT 3

School Tank and 10" Watermain Scenario (HWL 6067)

Town of Collbran Water Model Analysis

HORIZONTAL DATUM: NAD 1983 STATEPLANE COLORADO CENTRAL FIPS 0502 FEET
VERTICAL DATUM: NAVD 88

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EXHIBIT 4

School Tank Backfeed Scenario (HWL 6067)

Town of Collbran Water Model Analysis

HORIZONTAL DATUM: NAD 1983 STATEPLANE COLORADO CENTRAL FIPS 0502 FEET
VERTICAL DATUM: NAVD 88

Pe Rd
Kimball Creek
Buzzard Creek
Plateau Creek
Pe 3/10 Rd
Highway 330
Elm Ave
Main St
High St
Pinion
Sage St
57 1/2 Rd
58.85 Rd
58 1/2 Rd
59 1/2 Rd
Collbran
New Tank

Legend

- less than 35.0 psi
- 35.0 - 80.0 psi
- 80.0 - 100.0 psi
- Water Tank (offline)
- Watermain

500 250 0 500 FEET

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Appendix B - Wastewater

Appendix 1 - GIS Map Results

Existing Velocity
Future Velocity

Existing Peak Hour Velocity
Future Peak Hour Velocity

Existing Pipe Capacity
Future Pipe Capacity

Velocity Change Analysis
Peak Hour Velocity Change Analysis

KLJ

EXHIBIT 1

City of Collbran Sanitary Sewer

Existing Velocity

HORIZONTAL DATUM: NAD 1983 STATEPLANE COLORADO CENTRAL FIPS 0502 FEET
VERTICAL DATUM: NAVD 88

Legend

Pipe Velocity (ft/s)

- 0.0 - 2.0
- 2.1 - 4.4

500 250 0 500 FEET

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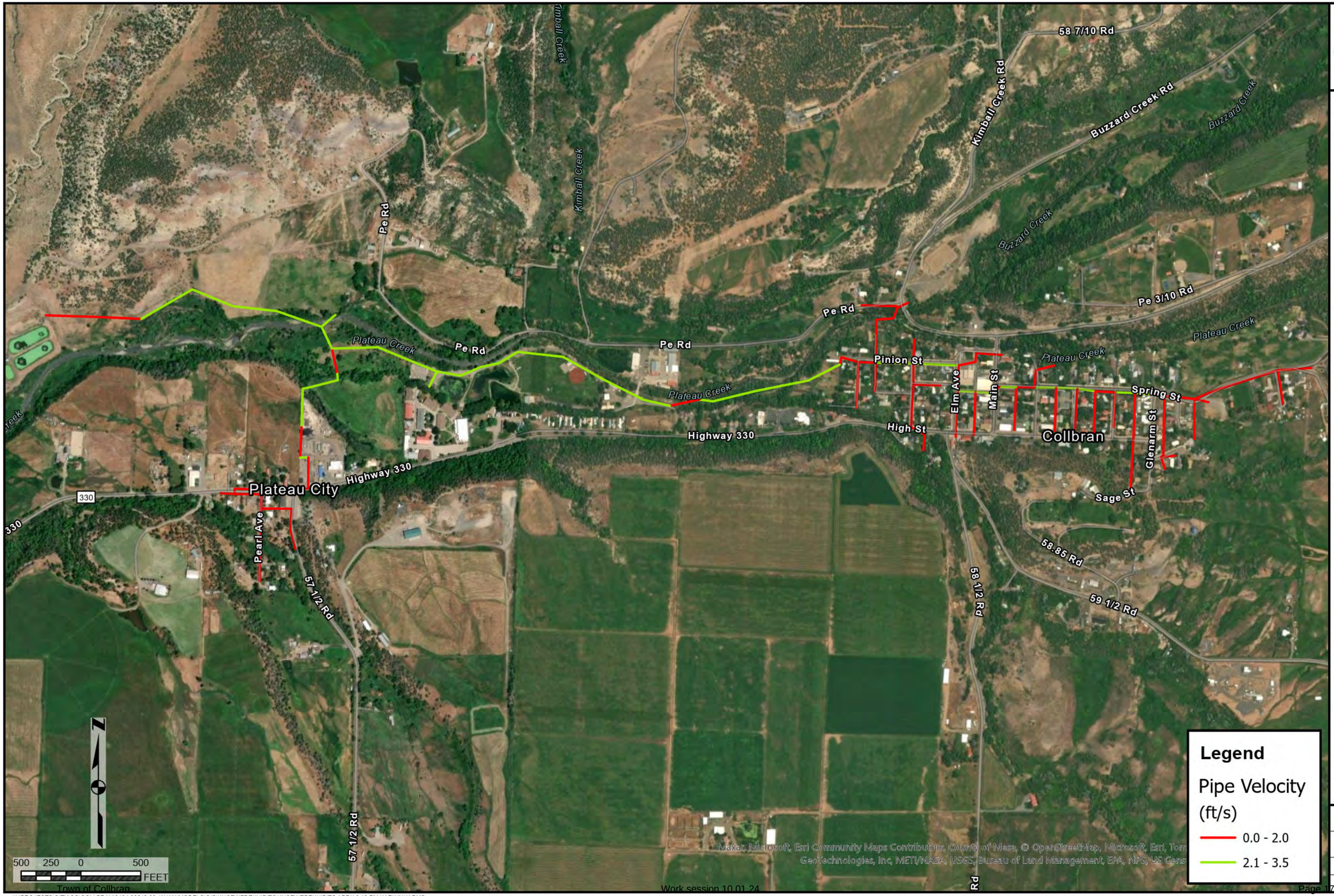

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EXHIBIT 2
City of Collbran Sanitary Sewer
Future Velocity

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VERTICAL DATUM: NAVD 88

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EXHIBIT 3
City of Collbran Sanitary Sewer
Existing Peak Hour Velocity
HORIZONTAL DATUM: NAD 1983 STATEPLANE COLORADO CENTRAL FIPS 0502 FEET
VERTICAL DATUM: NAVD 88

Legend
Pipe Velocity (ft/s)
0.0 - 2.0
2.1 - 4.5

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500 250 0 500 FEET

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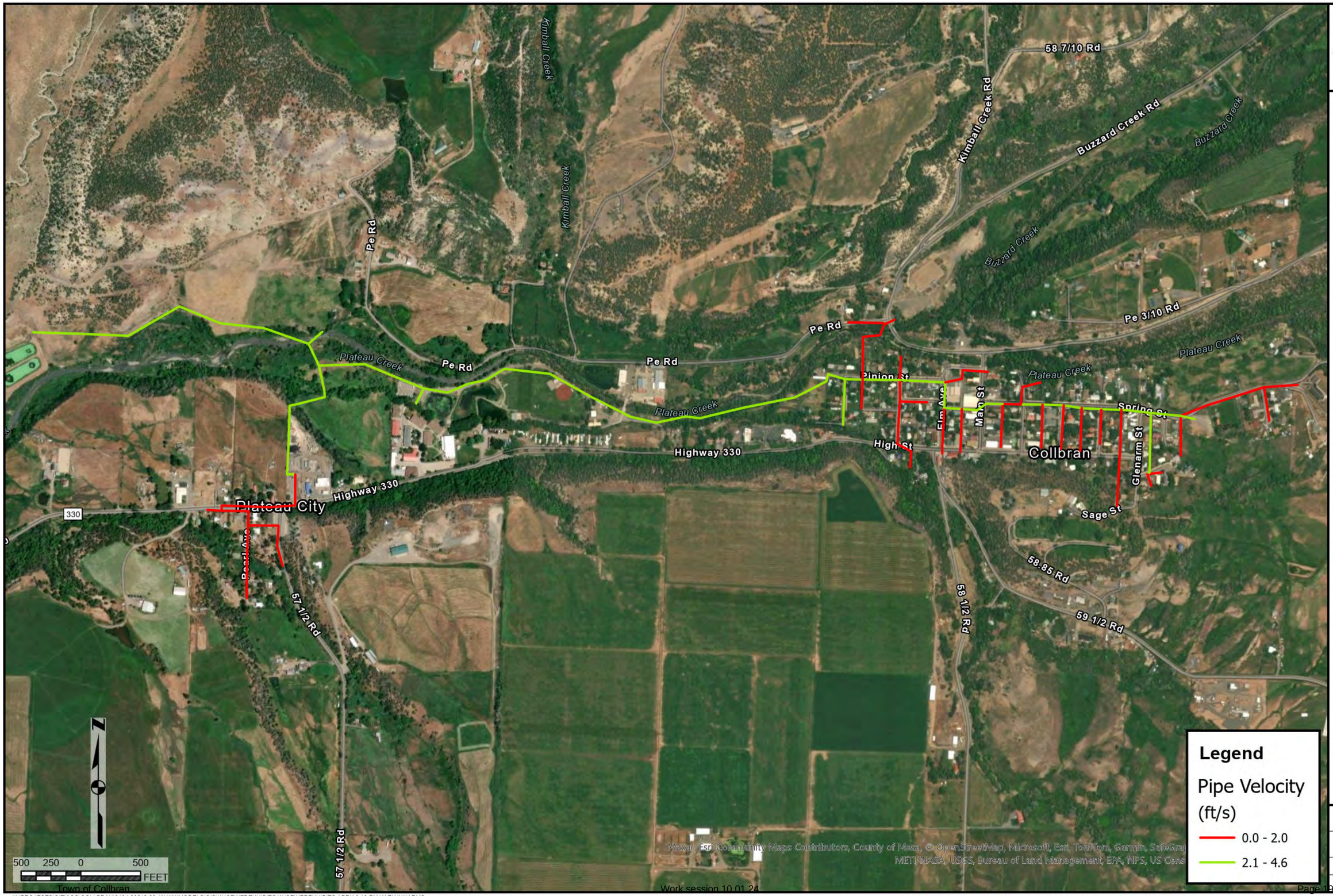

EXHIBIT 4
City of Collbran Sanitary Sewer
Future Peak Hour Velocity

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VERTICAL DATUM: NAVD 88

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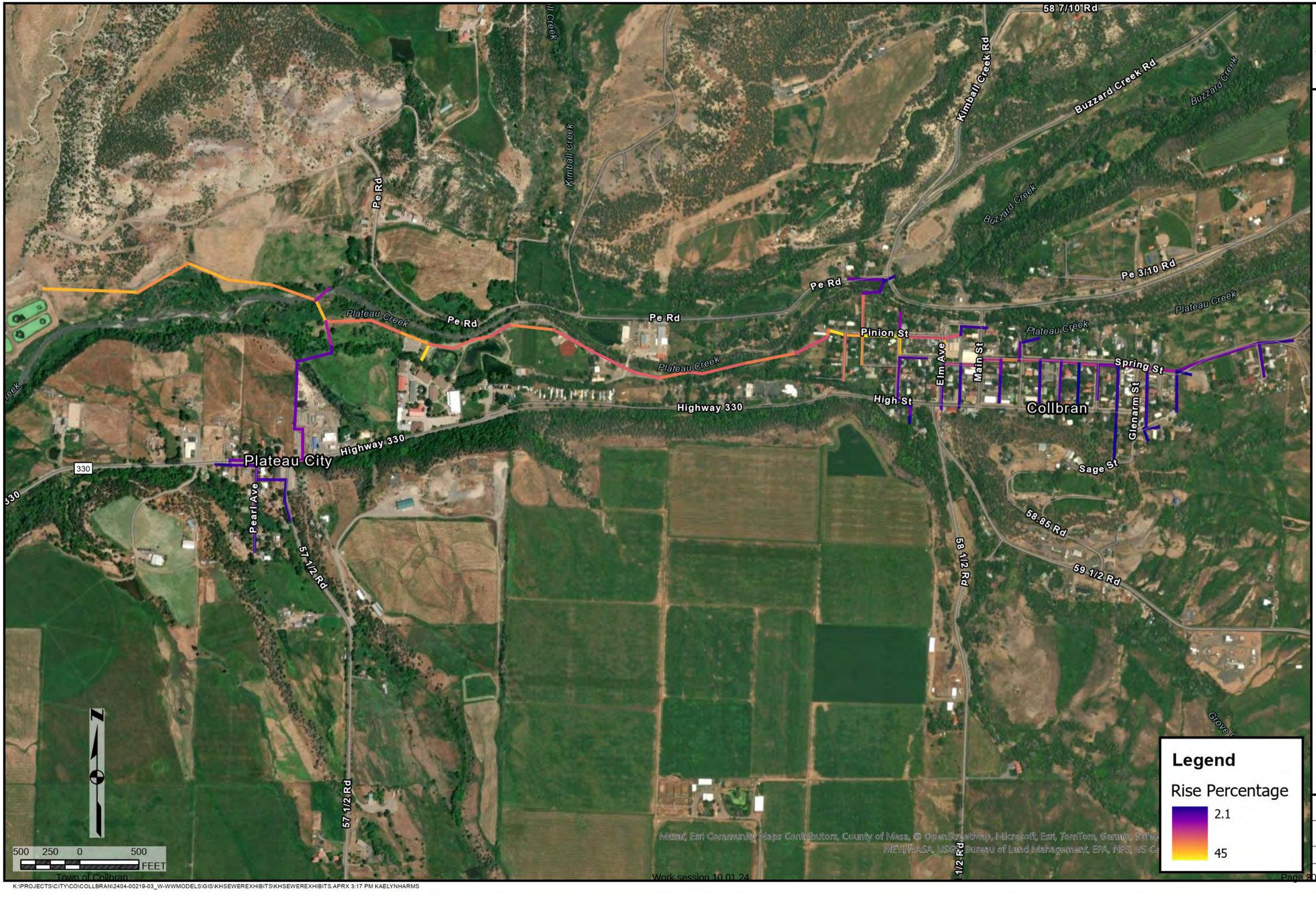

EXHIBIT 5

City of Collbran Sanitary Sewer

Existing Pipe Capacity

HORIZONTAL DATUM: NAD 1983 STATEPLANE COLORADO CENTRAL FIPS 0502 FEET
VERTICAL DATUM: NAVD 88

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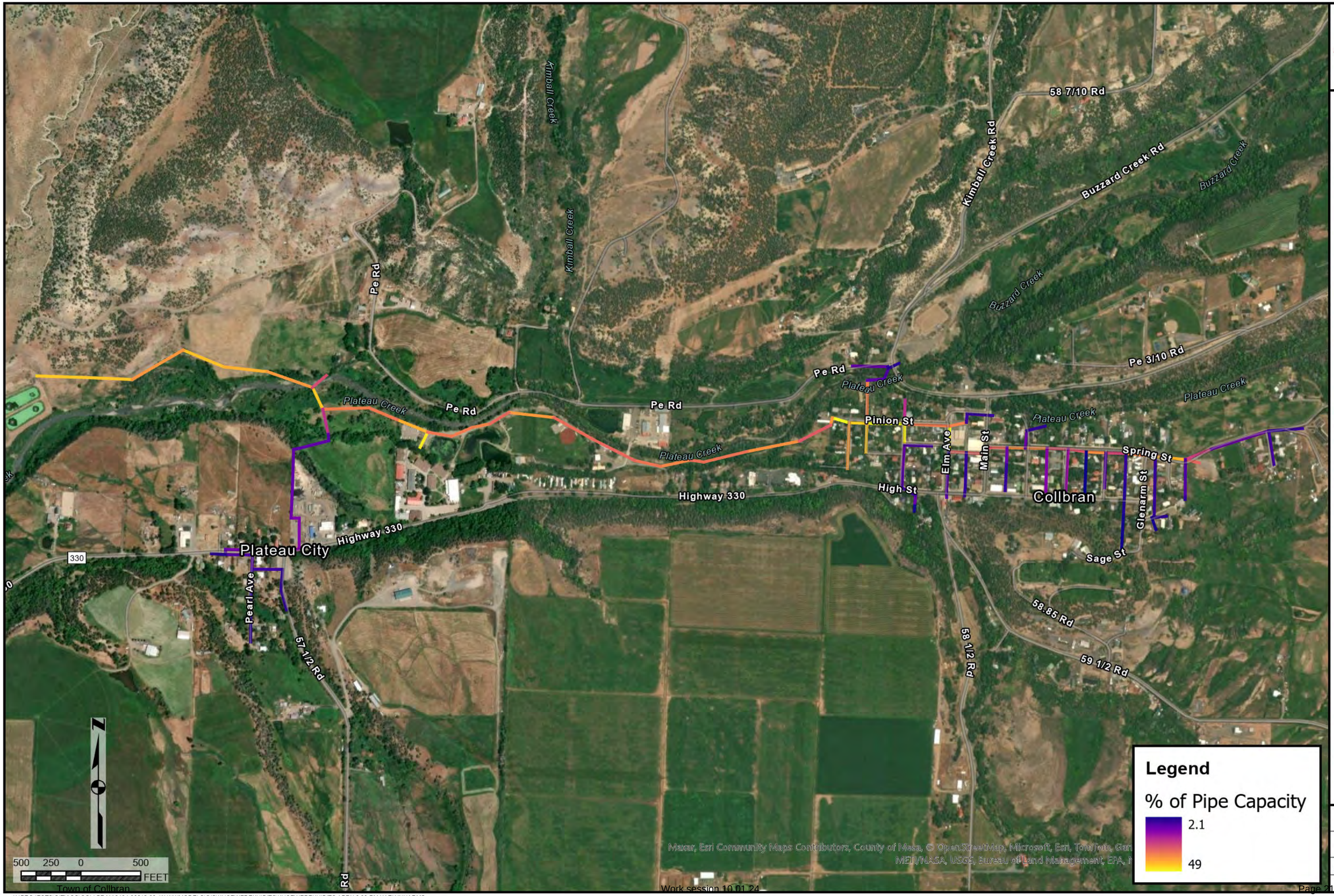

EXHIBIT 6

City of Collbran Sanitary Sewer

Future Pipe Capacity

HORIZONTAL DATUM: NAD 1983 STATEPLANE COLORADO CENTRAL FIPS 0502 FEET
VERTICAL DATUM: NAVD 88

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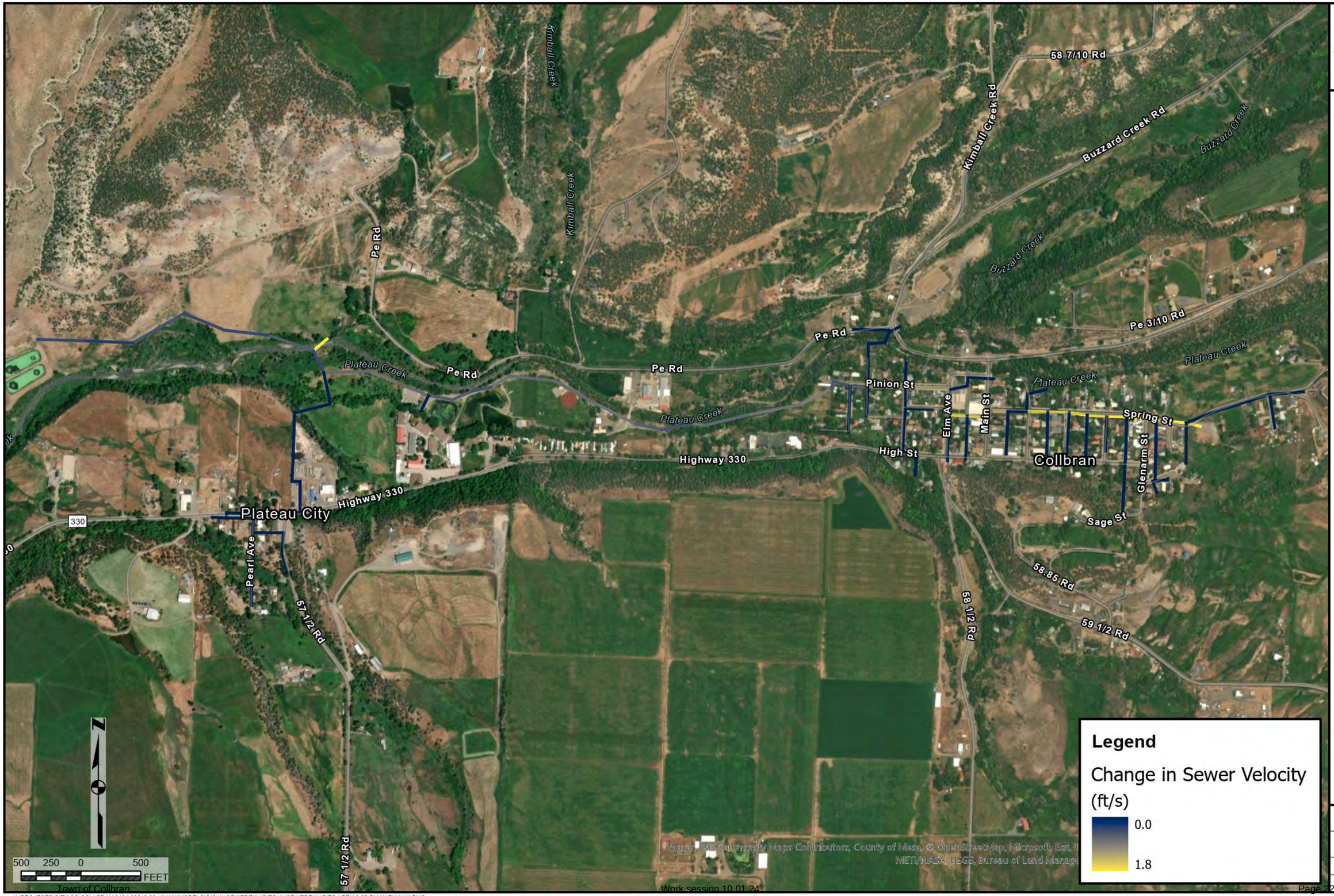

EXHIBIT 7
City of Collbran Sanitary Sewer
Velocity Change Analysis
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VERTICAL DATUM: NAVD 88

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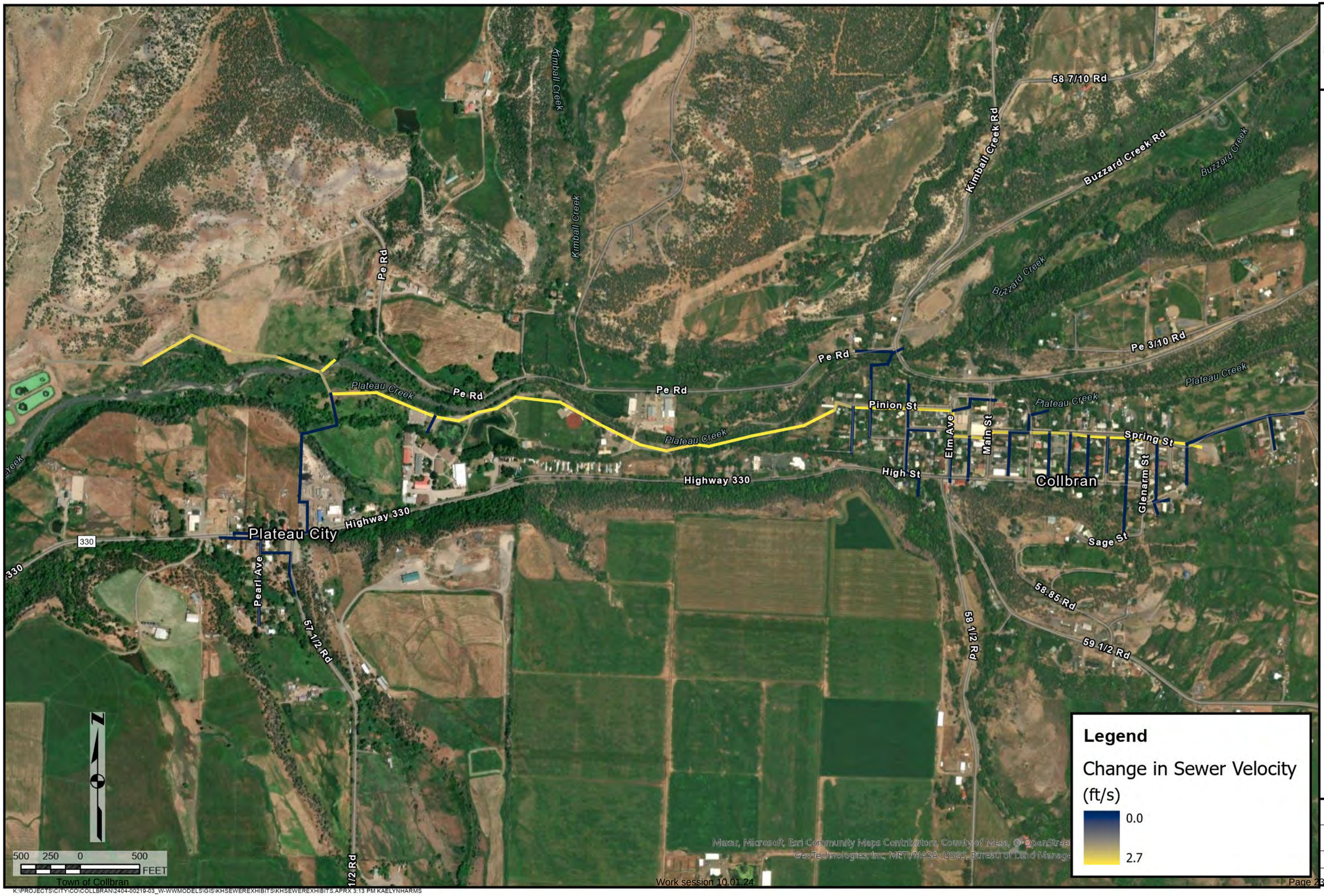

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EXHIBIT 8

City of Collbran Sanitary Sewer
Peak Hour Velocity Change Analysis

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VERTICAL DATUM: NAVD 88

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Appendix 2 - Modeling Notes

Existing Model GIS Assumptions
Locations for Future Tie Ins
Loading Diagram

Assumptions made when developing Sewer Gems model for analysis.

Manholes that did not have any information such as rim elev or dip sheet were removed (indicated by the red x).

Invert Elevations guessed as 5800'

Stacked Pipes. Bottom pipe used

No Diameter listed. Assumed 10" to conform with downhill pipe

No dipsheet, elevation guessed as 5,835'

Invert Elevations guessed as 5840'

Invert Elevations guessed as 5855'

Invert Elevations guessed as 5885'

Assumed 10" diameter

Stacked Pipes. Bottom pipe used

Invert Elevations guessed as 5885'

Wastewater Treatment Plant

Plateau Creek

Pe Rd

Kimball Creek

Highway 330

Plateau City

330

Plateau Valley School

57 1/2 Rd

Pipe lengths were found using scaled inputs rather than from GIS

Manhole 95 has a drop pipe with only top elevation given. This was used although there is a pipe feeding into the bottom.

Also, dip rods show that there is an uphill slope here. Should either be resurveyed or have new inputs. Survey says that pipes slope upwards. Really needs to resurveyed

Model inverts were adjusted to avoid an adverse slope

Oe Rd

Invert Elevation guessed at manhole R-2AB, Stacked pipe at R-3, used bottom pipe elvation

Assumed diameter of 6"

Pipe lengths were found using scaled inputs rather than from GIS

Pipe diameter assumed to be 8"

Assumed diameter of 6" for entire section

Stacked Pipes. Bottom pipe used

Invert Elevations guessed as 5935 and 5940

8" pipe diameter assumed

Invert Elevations guessed as 5960'

Stacked Pipes. Bottom pipe used

Stacked Pipes. Bottom pipe used

Invert Elevations guessed as 5980'

Stacked Pipes. Bottom pipe used

No Dip sheet. Rim Elev. set as 6010', invert as 6006'

Pipe diameter assumed to be 8"

Pipe diameter assumed to be 8"

No Dip sheet. Rim Elev. set as 6025', invert as 6019'

Invert Elevations guessed as 5970'

Collbran

Buzzard Creek Rd

Buzzard Creek

58 7/10 Rd

Pe 3/10 Rd

58 1/2 Rd

59 1/2 Rd

Legend

- Missing Rim Elev. and Dip Sheet
- Missing Dip Sheet
- Manhole
- Clean Out
- Sewer Main
- Force Main

500 250 0 500 FEET

Town of Collbran

Esri Community Maps Contributors, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, MET

EXHIBIT 1

City of Collbran Sanitary System

HORIZONTAL DATUM: MCA
VERTICAL DATUM: NAVD 88

PROJECT NUMBER: 2404-00219-03

SITE LOCATION: Collbran, CO

DATE: AUGUST 21, 2024

PAGE 1 OF 3

K:\PROJECTS\CITY\CO\COLLBRAN\2404-00219-03_W-WWMODELS\GIS\MANOLE AND SEWER LINE MAP.APRX 3:46 PM KAELYNHARMS

KLJ

EXHIBIT 2
Future Tie in Locations

HORIZONTAL DATUM: MCA
VERTICAL DATUM: NAVD 88

Wastewater Treatment Plant
Plateau Valley School
Future Connection
Future Connection
Plateau City
Collbran
Kimball Creek
Kimball Creek Rd
Buzzard Creek
Buzzard Creek Rd
58 7/10 Rd
Pe 3/10 Rd
Pe Rd
Plateau Creek
Highway 330
330
57 1/2 Rd
58 1/2 Rd
59 1/2 Rd
Oe Rd
Spring St

Legend
- Manhole
- Clean Out
- Sewer Main
- Force Main
- Parcel Lines

500 250 0 500 FEET

Esri Community Maps Contributors, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of
NPS, US Census Bure

PROJECT NUMBER:	2404-00219-03
SITE LOCATION:	Collbran, CO
DATE:	AUGUST 21, 2024
	PAGE 2 OF 3

K:\PROJECTS\CITY\CO\COLLBRAN\2404-00219-03_W-WWMODELS\GIS\MANOLE AND SEWER LINE MAP.APRX 3:39 PM KAELYNHARMS

Green outlines indicate the service area of specific manholes used to determine loading rates for the Sewer Gems model.

The manholes that service the area that they are located within are circled in green.

Wastewater Treatment Plant

Plateau Valley School

Plateau City

Collbran

Kimball Creek

Plateau Creek

Buzzard Creek

Pipeline Creek

Pe Rd

Highway 330

330

58 7/10 Rd

Kimball Creek Rd

Buzzard Creek Rd

Pe 3/10 Rd

57 1/2 Rd

58 1/2 Rd

59 1/2 Rd

59 1/2

Oe Rd

500 250 0 500 FEET

Esri Community Maps Contributors, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of... NPS, US Census Bure...

Legend

- Manhole
- Clean Out
- Sewer Main
- Force Main
- Parcel Lines

KLJ

EXHIBIT 3

Sanitary Loading Map

HORIZONTAL DATUM: MCA
VERTICAL DATUM: NAVD 88

PROJECT NUMBER:	2404-00219-03
SITE LOCATION:	Collbran, CO
DATE:	AUGUST 21, 2024
	PAGE 3 OF 3

K:\PROJECTS\CITY\CO\COLLBRAN\2404-00219-03_W-WWMODELS\GIS\MANOLE AND SEWER LINE MAP.APRX 3:41 PM KAELYNHARMS

Appendix 3 - CDPHE Design Flows

b. Possible demonstrations of competence in visual and tactile evaluation of soil:

(1) Degree in soil science, agronomy, geology, other majors if a course(s) in soil morphology was included; or

(2) Attendance at training or workshop for soil evaluation for OWTS including both class and field work.

(i) If the training or workshop includes an exam to verify acceptable completion of the course, a passing grade on the exam must be attained.

c. The Division must approve training for visual and tactile evaluation of soil.

43.6 Wastewater Flow and Strength

A. Wastewater Flows

1. A local public health agency may require the installation of a meter to measure flow into the facility or the OWTS.

2. Single-Family Residential Homes:

a. Design flow per person must be 75 gallons per day (gpd).

b. A local public health agency may only increase the wastewater design flow per person to 100 gpd on a case by case basis, where justified.

c. The minimum design flow for a new home must be for a two-bedroom house unless otherwise noted in this regulation. The minimum design flow for the repair or replacement of an OWTS of an existing one-bedroom home must be for one-bedroom unless bedrooms are added.

d. For homes up to and including three bedrooms, the assumed number of persons per bedroom is two for design purposes.

e. For homes with more than three bedrooms, the assumed number of persons is six persons (first three bedrooms x two persons per bedroom) plus one additional person for each bedroom more than three bedrooms.

f. A local public health agency may increase the number of persons per bedroom to two for all bedrooms for design purposes.

g. Table 6-1 summarizes the design flows for single-family residential homes up to six bedrooms. A local public health agency has authority to adjust these values as described in sections 43.6.A.2.b. and 43.6.A.2.f.

h. If a new home has unfinished areas, a local public health agency may increase the number of bedrooms used for the design of the OWTS by one or two bedrooms based on an assumption that 150 square feet of unfinished space can be converted into a bedroom, if the space can meet building code requirements for a bedroom.

Table 6-1 Single-Family Residential Design Flows

# Bedrooms	Occupancy (# of Persons)	Wastewater Flow Per Person (gallons/day)	Design Flow (gallons/day)
2	4	75	300
3	6	75	450
4	7	75	525
5	8	75	600
6	9	75	675

3. Auxiliary Buildings

   a. If a single-family home has an auxiliary building, such as a non-commercial shop with plumbing fixtures, the flow may be conveyed to the OWTS of the home, or to a separate OWTS constructed to handle the flow from the auxiliary facility.

   b. If the flow from the auxiliary building is only generated by residents of the home, it will be assumed that the OWTS for the home will be adequately sized to include the auxiliary building if the flows are combined.

   c. If the auxiliary building will have users in addition to residents and the flow from the auxiliary building will flow to the OWTS of the home, the design flow of the home must include the increased use.

   d. If the auxiliary building has a separate OWTS, the facility must be sized on the basis of Table 6-2 and a septic tank detention time of 48 hours.

4. Multi-Family and Commercial On-site Wastewater Treatment Systems

   a. Design flow values and strengths for multi-family and commercial systems must be determined from:

      (1) Table 6-2; or

      (2) An analysis of flows and strengths from at least three comparable facilities or from the facility, if it is an existing facility, must be submitted to the local public health agency for approval. The analysis must include:

         (i) Metered water flows for inside use only for at least a year, or if use is seasonal, for a full season. If metered flows are less than full capacity, they must be paired with actual use in units of persons present or meals served or other units as appropriate so that an actual daily rate per unit can be determined. The daily rate per unit times the number of units at full occupancy will be the design flow.

         (ii) Total Suspended Solids and BOD_5 or $CBOD_5$ tests at times of full use. At least three samples taken at least one week apart are required. Sampling that provides equivalent and representative data through “composite sampling” may be allowed

(iii) Explanation and justification for the comparability of the tested facilities with the proposed facility.

5. Flow Equalization

a. Flow equalization may be used if a facility has flows that vary from day to day by more than four times the average flow.

b. The highest peak assumed must be at least equal to the full capacity of the facility.

c. The stored flow must be distributed to the soil treatment area before the next greater-than-average peak.

d. Flow equalization may be used only if:

(1) The facility is non-residential;

(2) The facility is only used for one purpose;

(3) Flows will follow a predictable pattern; and

(4) There is a long-term expectation that size and pattern of the flows will remain the same.

e. Timed dosed pressure distribution or timed dosed NDDS must be used. The soil treatment area reduction for pressure distribution (Table 10-2) must not be used in addition to the flow equalization reduction.

f. Contingency plans must be made for expanding the capacity of the OWTS in the event of changed use at the facility.

TABLE 6-2 For Design Purposes, the Estimated Daily Wastewater Flow and BOD_5 Load Per Person Unless Otherwise Noted

RESIDENTIAL WASTEWATER	**GPD**	**BOD_5 IN POUNDS PER DAY**
Single-family dwellings	75	.20
Auxiliary buildings, by fixture type		
Bath/Shower	14.7	.014
Dishwasher	1.8	.002
Kitchen sink with garbage grinder	5.8	.052
Laundry washer	19.5	.037
Lavatory	8.4	.021
Water closet (toilet)	24.8	.029
Hotels and motels per room	75	.15
Multiple-family dwellings or apartments	75	.20
Boarding and rooming houses (users absent during working hours)	50	.15
Tiny Homes[3], per unit	150	.40
Mobile home	75	.20
Mobile home park per space	300	.80

COMMERCIAL WASTEWATER	**GPD**	**BOD_5 IN POUNDS PER DAY**
Facilities with short-term or transient visitors		
Examples: Airports or bus stations per passenger; fairgrounds per person attending; ball parks, race tracks, stadiums, theaters or auditoriums per seat	5	.02
Airport per employee	10	.06
Barber and beauty shops per chair	100	.70[1]
Bowling alleys per lane - toilet wastes only	5	.03[1]
Country club per member	30	.02
County club per employee	20	.06
Dentist offices per non-wet chair	50	.14[1]
Doctor offices per doctor	250	.80[1]
Factories and plants exclusive of industrial wastewater per employee per eight-hour shift – no showers	20	.05
Factories and plants exclusive of industrial wastewater per employee per eight-hour shift - showers provided	35	.08
Kennels per dog	30	.20
Laundries, self-service per commercial washer	400	.75
Office buildings per employee per eight-hour shift	15	.06
Service stations per toilet fixture	250	.50[1]
Stores and shopping centers per square foot of retail space	.1	.01[1]
Work or construction camps semi-permanent with flush toilets	50	.17
Work or construction camps semi-permanent without flush toilets	35	.02
FOOD SERVICE ESTABLISHMENT	**GPD**	**BOD_5 IN POUNDS PER DAY**
Restaurant open 1 or 2 meals per seat	50	.06/meal
24-hour restaurant per seat	75	.07/meal served
Restaurant with paper service only per seat	25	.01/meal served
Additional for bars and cocktail lounges per seat	30	.02
Drive-in restaurant per car space	50	.02
INSTITUTIONAL WASTEWATER WITHOUT KITCHENS UNLESS OTHERWISE NOTED	GPD	**BOD_5 IN POUNDS PER DAY**
Churches per seat; without any food service, or other uses	3.5	.01
Churches, per seat; warming kitchen only, no major food service	5	.01
Churches, per seat; with food service, per meal served[4]	4	.02
Hospitals per bed space	250	.20
Nursing homes; Group homes for developmentally disabled, per bed space	125	.20
Schools, Boarding per person	100	.17
Schools, Day without cafeteria, gym or showers	15	.04
Schools, Day with cafeterias, no gym or showers	20	.08
Schools, Day with cafeterias, gym and showers	25	.10
Schools, Day additional for school workers	15	.06

RECREATIONAL AND SEASONAL WASTEWATER USE	GPD	BOD_5 IN POUNDS PER DAY
Camps, day, no meals served	15	.12
Luxury resort	125	.17
Resort night and day	50	.12
Campground per campsite[2]	50	.12
Public park flush toilet per fixture per hour when park is open	36	.04 lbs./ fixture
Public park urinal per fixture per hour when park is open	10	.01 lbs./fixture
Public park shower per fixture per hour when park is open	100	.10 lbs./ fixture
Public park faucet per fixture per hour when park is open	15	.04 lbs./ fixture
Swimming pools and bathhouses	10	.06
Travel trailer parks with individual water and sewage hookup per unit [2]	100	.24
Travel trailer park without individual water and sewage hookup per unit [2]	50	.12

1 BOD levels need further verification depending on the specific use of the facility.

2 Laundry facilities are to be calculated on a per commercial washer basis in accordance with other elements of this table.

3 For the purposes of this Table, a "Tiny home" is a structure (a non-recreational vehicle) that has only one bedroom and has <400 sq.ft. of livable space, including lofts. In this instance, the OWTS may be sized for only one bedroom.

4 For churches with food service, the 4 gal/meal must be added to the 3.5 gal/seat to determine projected design flows.

B. Wastewater Strength

1. Table 6-3 includes levels of treatment that can be achieved by various OWTS components, excluding the soil treatment area. Systems qualifying for these treatment levels except TL1 produced by a septic tank alone must be approved under section 43.13. of this regulation. If soil treatment area or vertical separation distance reductions are permitted, the local public health agency must have a maintenance oversight program under section 43.14.D. in place.

2. High strength waste must be reduced to at least Treatment Level TL1 quality or lower before applying to a soil treatment area. Waste strength levels defined in Tables 6-3 and 6-4 must be used to determine compliance.

Table 6-3 Treatment Levels

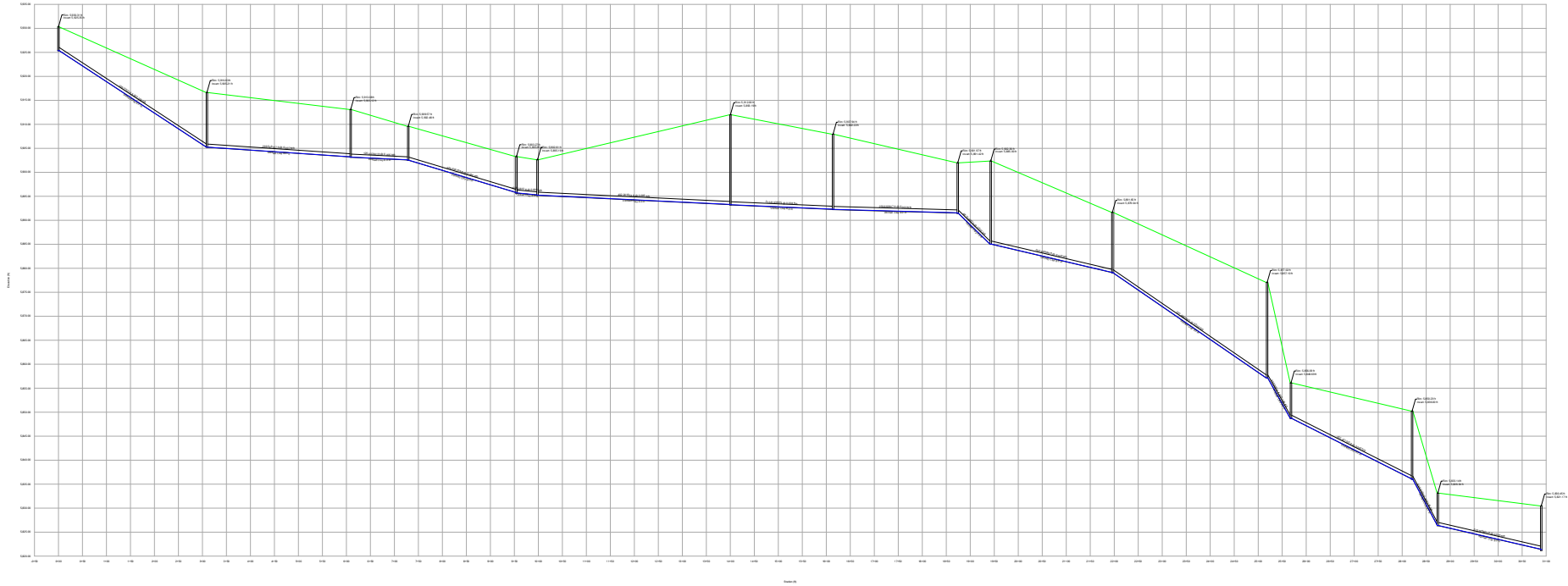
Treatment Level	BOD_5 (mg/L)	$CBOD_5$[1] (mg/L)	TSS (mg/L)	Total Nitrogen (mg/L)
TL1[2]	180	-	80	60-80
TL2	-	25	30	N/A[3]
TL2N	-	25	30	>50% reduction[4]
TL3	-	10	10	N/A[3]
TL3N	-	10	10	20 mg/L

Shading indicates higher treatment levels.

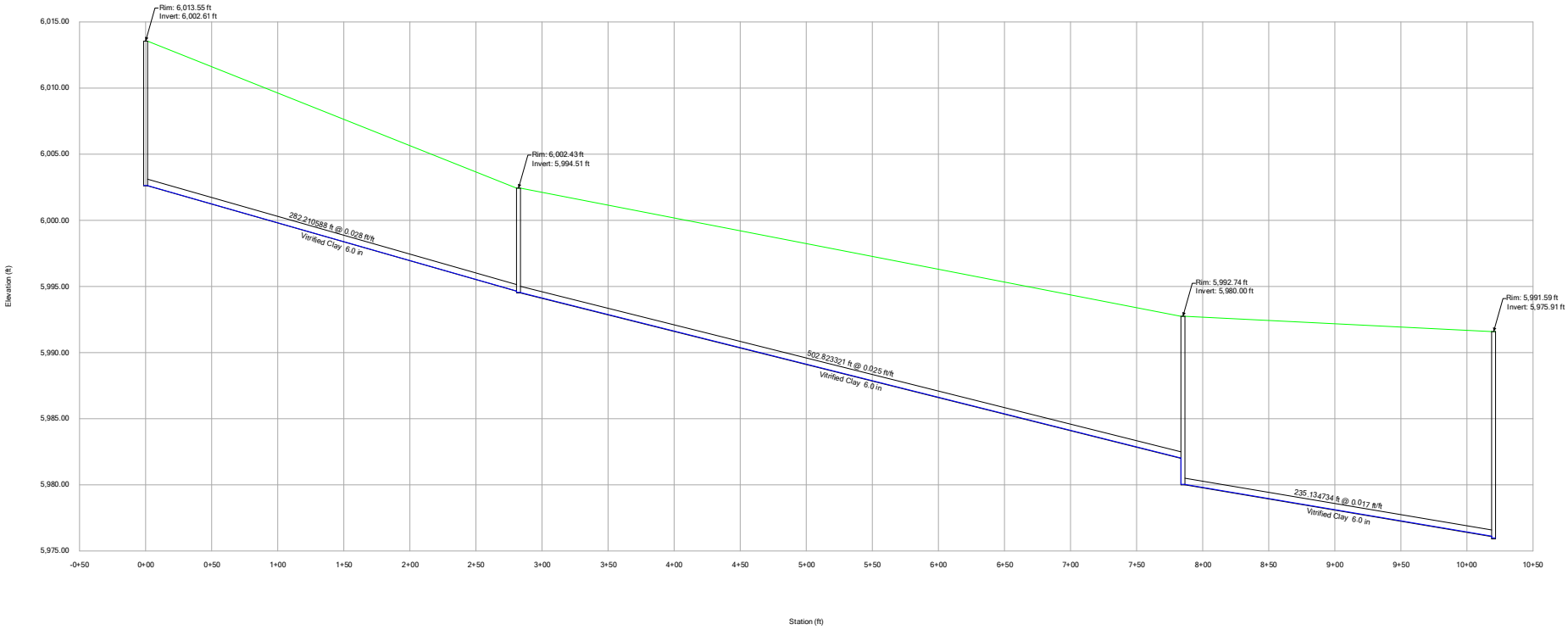
1 Requirements for $CBOD_5$ are only related to effluent samples from a higher level treatment system.

Appendix 4 - Sewer Main Profile Results

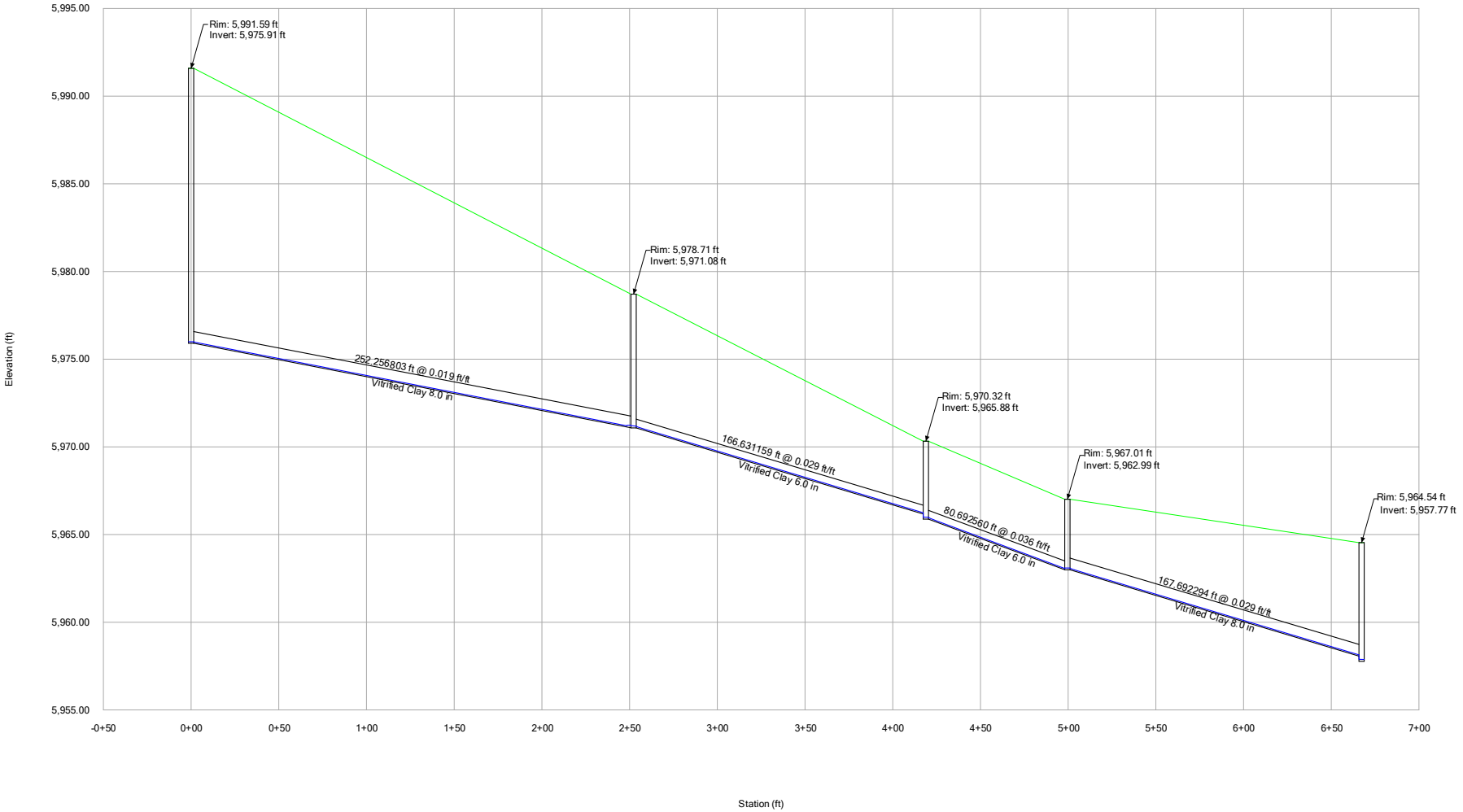
Profile Report
Engineering Profile - Plateau City (Sanitary Sewer Model.stsw)



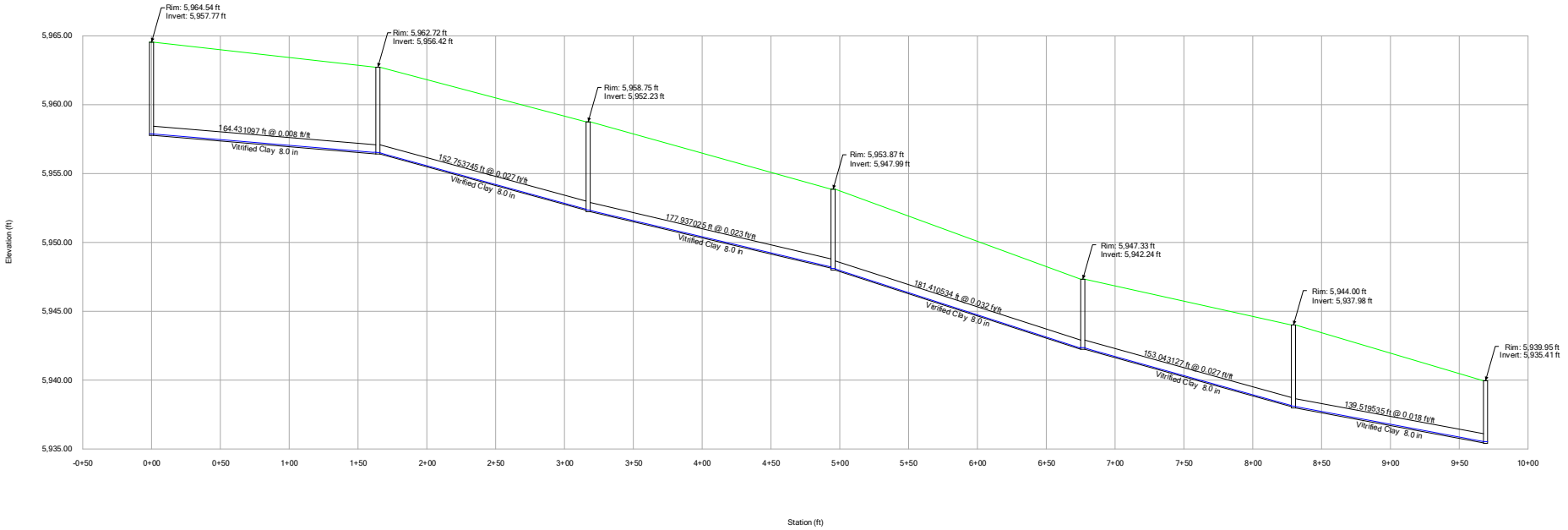
Profile Report
Engineering Profile - Wagonwheel Ct-Glenarm Ave (Sanitary Sewer Model.stsw)



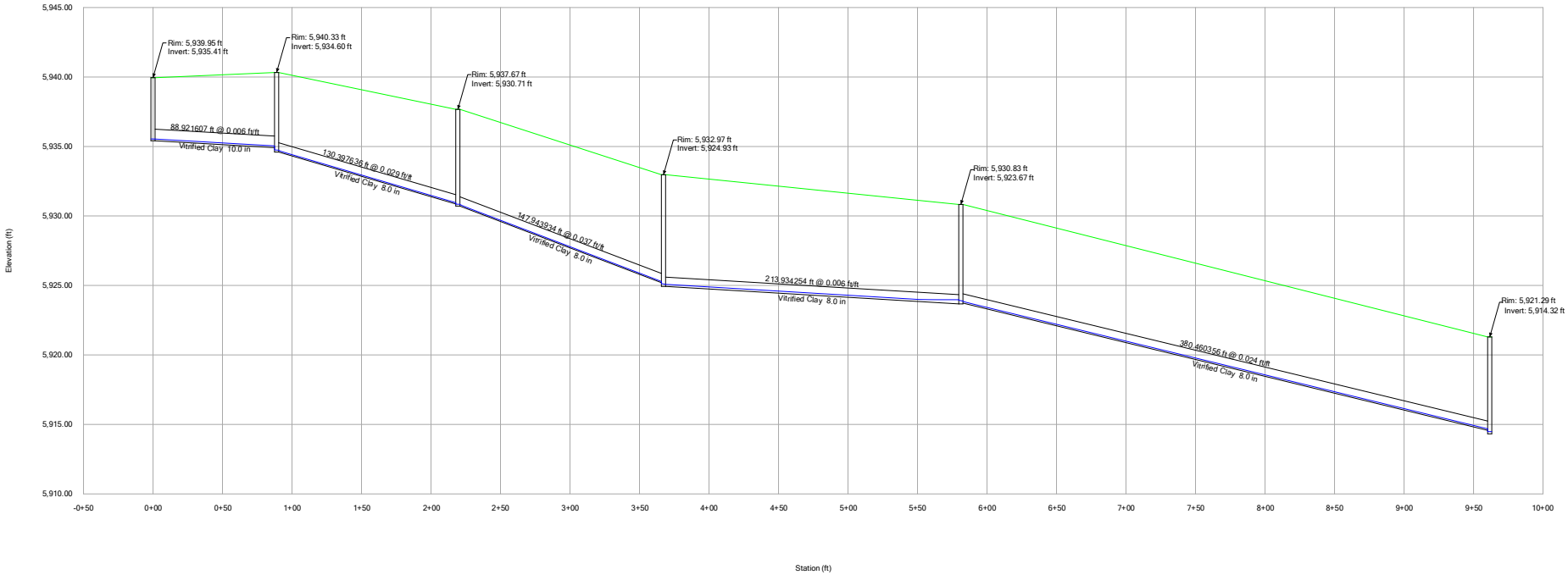
Profile Report
Engineering Profile - Glenharm- Park Ave (Sanitary Sewer Model.stsw)



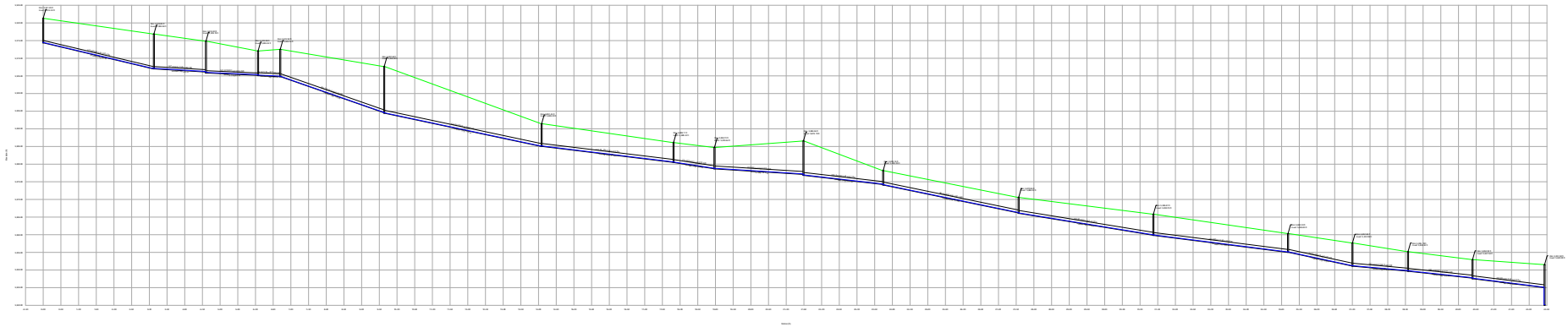
Profile Report
Engineering Profile - Park Ave- Main St (Sanitary Sewer Model.stsw)



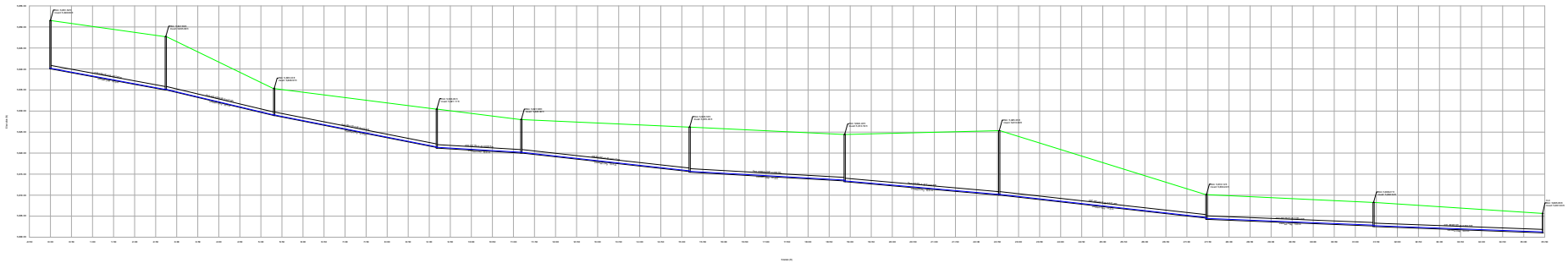
Profile Report
Engineering Profile - Main St- Orchard Ave (Sanitary Sewer Model.stsw)



Profile Report
Engineering Profile - Orchard Ave- Job Core (Sanitary Sewer Model.stsw)



Profile Report
Engineering Profile - Job Core- Treatment Plant (Sanitary Sewer Model.stsw)



EXTERNAL MEMORANDUM

To: Desi Santerre
Water and Wastewater Program Manager
Colorado Department of Local Affairs
1313 Sherman Street, Room 521
Denver, CO 80203

cc: Dana Hlavac, Northwestern Regional Manager
Town of Collbran Board of Trustees and Staff
Project Central File W0317.24019

From: Douglas E. Schwenke, P.E.
Tammy Lake, P.E.
RESPEC
5540 Tech Center Drive, Suite 100
Colorado Springs, CO 80919

Date: August 1, 2024

Subject: Town of Collbran – Plateau Valley School District 50

INTRODUCTION

Through the Colorado Department of Local Affairs (DOLA) Small Communities Water and Wastewater Project Development program, RESPEC provides technical assistance to small communities as a third-party evaluator of engineering design documents, planning documents and masterplans, and engineering evaluations of water and wastewater facilities. The Town of Collbran (Town), by accessing this program, has requested a review of both water- and wastewater-related issues associated with the replacement of a PK-12 school as well as those related to the servicing of a proposed 43-unit residential development, the approval of which is anticipated.

The Town is specifically interested in whether recommended options for water and sewer service for the new school and proposed development can be supported by the systems' existing capabilities and are aligned with the Town's water and wastewater system priorities.

SCOPE

RESPEC is providing opinions on recommended alternatives for water and sewer service for the new school and proposed development, reviewing the task order by KLJ Engineering, and

providing an updated prioritization of projects based upon pending developments, existing system limitations, and master planning considerations.

REVIEWED/REFERENCED DOCUMENTS

In addition to participating in meetings with the Town and DOLA representatives and speaking with Public Works, RESPEC has referenced the following documents as part of this effort:

- Preliminary Engineering Report – Plateau Valley School New PK-12 School Off-Site Water and Sewer Supply and Distribution Alternative Analysis, WestWater Engineering, January 2024
- Draft Scope of Services for Task Order #2: Water/Wastewater Capacity Study, KLJ Engineering, including revisions requested by the Town of Collbran, June 2024
- WWTP Preliminary Engineering Report – Town of Collbran, CO, KLJ Engineering, September 2022
- Asset Inventory and Capital Improvement Plan by SGM, October 2020
- Technical Memorandum: Water and Wastewater CIP Prioritization, JDS Hydro Consultants, Inc. (now Respec), February 22, 2021
- Technical Memorandum re: land application of wastewater sludge, KLJ Engineering, August 24, 2023

BACKGROUND

Plateau Valley School District 50 (PVSD or District) has begun construction activities on a new PK-12 school to replace an existing school facility on the same property located west of the Town of Collbran on Highway 330. The new school is partially financed with a BEST grant with the requirement that a certificate of occupancy be obtained by January of 2026.

Construction development activities on the school site began in May of 2024. According to the most recent PVSD progress update (provided by Dynamic Program Management, owner's representative on June 19, 2024), issuance of a 100% construction document set/bid package #3 planned for August 7th. This most recent progress update does not account for the proposed waterline extension or lift station replacement which represent two critical infrastructure components. The Town has expressed support for the District's chosen alternative – a waterline extension with off-site tank – for water and fire flow for the new school facility. Further discussions regarding a new/relocated lift station are pending. Colorado Department of Health and Environment (CDPHE or Division) approvals will be required for both the storage tank and the lift station. This creates two critical path infrastructure items for the District.

The Town's consulting engineer, KLJ Engineering, has reviewed the Preliminary Engineering Report for the Plateau Valley School District 50 (PVSD PER) by WestWater Engineering. In addition, KLJ has provided, and the Town has approved, a scope of services for consulting related to water system and wastewater system modeling. These work products will be instrumental in further developing the Town's water and sewer master plan as well as providing a basis for the establishment of design parameters for the school, the proposed 43-unit development, and other future development projects.

The Town has agreed to partner with the District and pursue Energy Impact and Assistance Funds (EIAF) from DOLA for the construction of the new waterline approximately two miles in length as well as an off-site storage tank to connect the new school to the Town's water system. Since the school site has been annexed into the Town, the District maintains the right to connect with a full capital

investment. In addition, the District has expressed interest in constructing a larger capacity lift station at a new location on site. The PVSD PER provides an analysis of alternatives for water and sewer service for the new school.

The Town's last Comprehensive Plan was completed in 2011. Currently, work is underway by the Town on a Comprehensive Plan update and a Three Mile Area Plan. At this time, the Town is in the public/stakeholder engagement phase with these planning efforts.

EXISTING INFRASTRUCTURE

WATER

The Town's water treatment plant (WTP) utilizes two 100-gpm package treatment trains to treat water pumped from the main water source (springs) or via gravity flow from the Hoosier Ditch. Water is treated using flocculation, settling, filtration using dual media filters, and then followed by disinfection using liquid chlorine prior to chlorine contact, which employs a 200,000-gallon unbaffled clearwell. The WTP typically operates only one treatment train at 100 gpm which satisfies both average and peak demands. According to SGM's 2020 Asset Inventory and Capital Improvement Plan, the wooden roof structure of the clearwell needs replacement and this work would present some temporary operational challenges to achieve the required chlorine contact time. SGM also identified some functionality issues with flow pacing for the disinfection system but is unknown if these issues have been resolved.

The Town's water distribution system includes two finished water storage tanks. Tank 1, built in 1970, has a capacity of 285,000 gallons and is fed by a 10-inch waterline while Tank 2, built in 2000, has a capacity of 250,000 gallons and is fed by a 6-inch waterline. In addition, the clearwell at the WTP currently provides 200,000 gallons of finished water storage. However, the Town is evaluating the feasibility of pursuing a redundant water source as well as potentially using water from the Hoosier Ditch as a raw water source for the irrigation of Town properties. Therefore, there is the potential that the existing clearwell could be removed from the Town's finished water storage inventory at some point in the future.

As part of their analysis of the Town's distribution system, SGM (2020) reported that a fire flow analysis using their hydraulic model indicated approximately 83 percent of modeled nodes had less than 1,500 gpm available fire flow while maintaining a minimum of 20 psi residual pressure throughout the system. Additional connectivity, looping, and the replacement of bottleneck sections was recommended.

SGM completed a feasibility study prior to 2020 to evaluate a potential waterline extension to Plateau City and the Plateau Valley School which included modeled pressure and fire flows. The study also provided certain recommended improvements were implemented. Ultimately, the study concluded that even with implementation of all recommendations, the available fire flow at the school site would be inadequate, reaching about 500 gpm.

The existing school facility derives both drinking water and irrigation water from four nearby springs. The school's drinking water system, which obtains water from springs 1 and 3, is a public water supply currently classified as a groundwater, non-transient, non-community system. The system utilizes a 20,000-gallon raw water storage tank and drinking water is treated solely with disinfection using liquid sodium hypochlorite and a baffled chlorine contact chamber. The most recent sanitary survey of this system noted that groundwater from springs 1 and 3 may be considered under the direct influence of surface water (GWUDI); therefore, reclassification of this source water is a possibility following the next

sanitary survey in 2027. Such a reclassification would require additional treatment and is a consideration for the District in evaluating a system for the new school. Similarly, raw irrigation water is obtained from springs 2 and 4 and is not currently sent through the existing potable water treatment system. The District intends to maintain these two collection vaults and associated piping for raw water irrigation purposes at the new school.

WASTEWATER

According to the WWTP Preliminary Engineering Report (WWTP PER), the Town's wastewater system serves 250 residential and 36 commercial taps in addition to taps for the school, hospital, and Job Corp property. These latter three taps account for approximately 44 percent of flows. The WWTP PER states that the Town does not plan on additional sewer service areas. However, there are several properties that logically should be part of any such discussion regarding potential sewer service areas. One area of consideration is the parcel that generates wastewater flows by gravity from the main area of town to the west along the south side of Plateau Creek. There are currently two creek crossings from this area that need to be discussed. The upstream/eastern-most creek crossing was exposed by erosion in 2010 and is planned for abandonment, leaving a single creek crossing from south to north for sewer flows. The remaining crossing is located approximately midway between the main area of town and the school property within Mesa County parcel no. 2667-273-00-399.

Wastewater from the existing school facility enters an on-site lift station, owned and operated by the Town. The force main from this existing lift station carries wastewater approximately 100 feet north to a creek crossing, then along the north side of Plateau Creek to the headworks at the WWTP. The WWTP is located just north of Plateau Creek west of town and at the western/lower end of the sewer service area. Public works estimates the WWTP is approximately 70 feet higher in elevation than the school site. The existing facility is an aerated lagoon facility with two lagoons and a polishing basin. Following chlorination and dechlorination, the WWTP utilizes a surface water discharge to an outfall channel leading to Plateau Creek. The facility has a permitted capacity of 192,000 gallons per day (gpd). The Operator has voiced concerns related to the plant including current sludge depth and effluent ammonia levels (in winter), Within the collection system, higher infiltration and inflow (I&I) has been documented in various locations. The existing lift station on the school site is over 40 years old and despite limited upgrades in 2017, the age of the wet well and other major components complicates any alternative based upon modifying the existing structure.

EVALUATION OF RECOMMENDED ALTERNATIVES FOR SCHOOL WATER AND SEWER SERVICE

We agree that connection to the Town's water system is advantageous since it relieves the school district of the responsibility for water treatment and the resulting implications of future water source classification or regulation changes. We also assume that any improvements (and thus disturbance) to existing intake structures for the springs may increase the chance of surface water influence, thus making a new waterline connection to the existing distribution system more attractive. The PVSD PER by WestWater Engineering presented two alternatives for water service and two for wastewater for the school. While the report's discussion of water service alternatives is well-prepared, it is not clear how WestWater developed its model and whether or not any of the recommended improvements (per SGM's feasibility study, described above) were considered in the model assumptions. KLJ has indicated their concurrence with the school's chosen alternative (Alternative 2) for water service which includes the waterline extension and the construction of an off-site water storage tank.

WATER

Alternative 1 generally would involve the installation of a 10- to 12-inch waterline along Highway 330 to connect the school to the Town's existing distribution system. According to WestWater Engineering, the Town's water system would not support the school's fire flow requirements of 1600 gpm for 4 hours (380,000 gallons) without improvements. WestWater modeled the water system and analyzed the Town's existing water storage (two tanks plus allowable clearwell volume) for the simultaneous needs of equalization (using an estimated maximum or peak day flow), emergency storage (using the Town's average day demand), and fire flow (4-hour volume for the proposed school facility.) WestWater concluded that the existing available storage is only slightly (3 percent) more than these requirements when the allowable volume in the clearwell is included. With the potential for the Town to repair or reconstruct the clearwell or to eliminate it as drinking water storage, **we feel that any fire flow storage calculations should exclude the clearwell volume**.

WestWater noted that the Mesa County Road and Bridge building water service, which currently uses a tank and booster pump for low-pressure conditions, could have a pressure slightly below the required 20 psi minimum in the event of fire flow use at the school. We understand that Alternative 1 includes the construction of a supplemental 8-inch waterline in South County Road 58 ½ to connect to the High Street distribution lateral waterline and we assume that this line would provide a parallel line or loop to improve the pressure at the County's Road and Bridge building. However, it is unclear how this additional improvement would position the Town's distribution system overall with respect to current deficiencies and future development. It is also unclear if WestWater considered other improvements to the water distribution system as previously suggested by SGM. Based upon the conclusions of SGM's feasibility study and the lack of specific information about water system model assumptions by WestWater, we feel a more detailed water distribution system model is needed and includes an analysis with the prior (SGM's) recommended improvements. Of particular importance is an analysis of the water system with respect to the 43-unit development located on the east side of town, and currently in the planning process. In addition, the subsequent distribution system model should also include an evaluation of demands from other future service areas designated for future growth, especially on the west side near the proposed new school area.

Alternative 2 proposes a new, 275,000-gallon water storage tank near the tie-in point with the Town's system and a 10-inch waterline to the school, to be served by the new tank which would fill from the existing distribution system and would create a separate pressure zone. While the tank would primarily benefit the new school, this new pressure zone may provide benefit for future development below the new tank and northeast of the school. The additional tank would provide equalization as well as storage volume amounting to just over 70 percent of the required fire flow for the new school facility. Additional capacity – beyond the minimum required per the above discussion - would allow for either tank to be offline for painting or other maintenance.

It is assumed that the property for the new tank may either be purchased or acquired by easement from Mesa County. In addition, we assume that the cost of the new water storage tank in Alternative 2 will be borne by the District since the primary purpose of the tank would be to provide fire flow storage for the new school facility. However, the Town may wish to consider participating in the master planning of the proposed tank site if it wants the site to be expandable for the purpose of serving potential growth and development below the storage tank area. A cost sharing agreement with the District may be advisable should the Town wish to use current or future storage at the tank site to support future development on this side of the service area (i.e. northeast of the school). However, the certainty of whether these parcels would ever support future growth may play into whether the Town would wish to participate in

the site planning at this juncture. At a minimum, the proposed tank site should at least be master planned to include a second tank to support additional residential growth in this area.

REQUIRED COORDINATION, PERMITTING, AND REVIEW

Intergovernmental cooperation with Mesa County will be required to obtain the land or an easement to advance the permitting and design of the proposed water storage tank (Alternative 2). In addition, the proposed off-site storage tank will require CDPHE design review. The Division's stated review time frame is 45 days, not including time needed following a design submittal for requests for information.

IMPORTANCE OF DSTRICT/TOWN COLLABORATOIN

The District should facilitate collaboration and the sharing of information among the District's engineer, the Town's engineer, and the Town of Collbran so that design parameters can be confirmed. The Town's engineer should confirm design parameters after modeling is complete and the needs of not just the school – but also the Town – are considered. Although the new tank will primarily serve the new school, there is the potential that the new water main and newly created pressure zone could serve several adjacent parcels east of the school along Highway 330 at such time these are developed and annexed.

WATER AGE

Either alternative poses water age concerns due simply to the length of the watermain extension and seasonal variation in water demand at the school. The school will experience significant turndown (decreased water demand) during the summer months. As such, water will take longer to reach the school, increasing water age. The effects of water age can include inadequate chlorine residual and/or elevated disinfection byproducts (DBP's.), biofilm buildup in storage tanks, and other cascading issues.

WATER RIGHTS

The most recent comprehensive plan (2011) stated that "new development shall dedicate adequate water rights." However, recent correspondence from the Town indicates the Town has an adequate supply of drinking water. The Town's existing water rights/supply should be evaluated with respect to anticipated future growth to inform policymaking moving forward.

WASTEWATER

WestWater proposed two alternatives for the lift station. Alternative 1 proposes an expansion of the existing lift station on the school property while Alternative 2 proposes a new lift station - designed for increased sewer flows and located in a designated utility area. The new, relocated lift station location would allow for unencumbered development of the new school facility, provide for easier maintenance and better access to the lift station, and avoid the potential pitfalls of expansion of an older structure. Though, in the PER, a Site Location Application is not listed as a disadvantage under Alternaitve 1, neither option would allow the Town to bypass the Site Location Application process with CDPHE. We understand that the District and the Town are proceeding under the assumption that a replacement lift station (Alternative 2) is the preferred option, and we agree with this direction.

REQUIRED PERMITTING AND REVIEW

The proposed lift station requires both a Site Location Application and a design review through CDPHE. The Site Location Application (attached) requires an engineering report meeting Section 22.4 of Regulation 22 as well prior approval of appropriate local governments, local health authority, 208-designated planning and management agencies, and applicable state and federal agencies. The local and 208-designated agencies have sixty (60) days to review the application and report and provide comments and recommendations. Any agencies not providing input within this time frame will be

contacted directly by CDPHE and provided an additional 7 days to respond. Regarding the design review, the Division's goal is to respond to a submittal within 45 days, exclusive of any time needed for requests for additional information. Once approved, an applicant has one year from the date of approval to begin construction. Due to the District's tight schedule and the anticipated review times for both the Site Location Application and design review, we suggest that the District contract immediately for these services.

IMPORTANCE OF DSTRICT/TOWN COLLABORATOIN

It is important to note that the Town is both the owner and operator of the existing lift station and would likewise assume this authority for a replacement constructed by the school. As such**, any CDPHE permitting or review requirements , including a Site Location Application, design review, etc. must include participation by the Town, even if the Town is not the original applicant on the new lift station**. The District should facilitate collaboration and the sharing of information among the District's engineer, the Town's engineer, and the Town of Collbran so that design parameters can be confirmed and the Town's preferences and requirements as owner-operator can be accommodated.

WASTEWATER TREATMENT FACILITY EXISTING CAPACITY AND AREAS OF CONCERN

WestWater's PER for the District was limited in scope and addressed only the lift station and not the hydraulic and organic capacities or other potential concerns with respect to the Town's WWTP. We have reviewed the most recent flow data and effluent water quality information provided by the Operator as well as general information from the Town. Operator data since January of 2023 indicates average flows in the range of 60,000 to 80,000 gpd with peak flows often reaching 130,000 gpd (and a maximum of 150,000 gpd in October of 2023.) According to the WWTP PER, the WWTP has been operating at 25 to 55 percent of permitted capacity and wastewater average and peak daily flows have been decreasing, likely the result of mitigation of infiltration and inflow. The Town continues to budget approximately $5,000 per year for cleaning and video services for collection system piping with the goal of identifying pipe sections in need of repair.

As would be expected, it appears that effluent ammonia levels are highest (15+ mg/L January through March of 2023 and 12-14 mg/L January through February of 2024) with a permitted limit of 25 mg/L year-round (it appears this limit previously varied by month.) In the couple of months leading up to and during these periods of elevated ammonia, 2024 average daily flows were nearly double those of 2023. BOD percent removal appears generally consistent and adequate year-round. Nutrient levels (nitrate/nitrite, TKN, and phosphorus) are sampled bimonthly for what we assume to be a report-only requirement according to Regulation No. 85. As was pointed out in the WWTP PER, an asset inventory by SGM in 2020 expressed concerns about the ability of the lagoon treatment facility to meet future Regulation 85 nutrient limits, specifically total inorganic nitrogen (TIN) and phosphorus. The next 5-year renewal for the Town's permit will be in 2025; Regulation 85 nutrient limits will not be incorporated into the permit at this renewal but may be in the future.

The Town is anticipating it will replace the existing WWTP with a mechanical plant at some point in the future when the funding picture is favorable. Alternatives for the WWTP replacement were presented by KLJ in the WWTP PER. Another option the Town has is to develop the third treatment lagoon/cell at the existing facility. However, this may not provide the treatment required to meet future effluent limits as dictated by Regulation No. 31. In the meantime, the Town has been utilizing *Restore* enzyme treatments to aid in sludge reduction and is considering measurement and potential removal/disposal of sludge to maintain capacity and optimize treatment (the last sludge measurement was several years ago, prior to the start of enzyme treatment and new measurements would be beneficial.) The

replacement lift station will, over time, serve an increasing school population and the capacity impacts of future flows on the existing WWTP should be evaluated.

Overall, how the Town wants to approach current improvements to the WWTP vs. future improvements to meet Regulation No. 31 effluent limits needs to be carefully evaluated. RESPEC would tend to agree with KLJ's recommendation of investing as minimally as possible in the current WWTP until future effluent limits have been identified and the Town is put in a position that it needs to upgrade its current WWTP to meet Regulation No. 31 effluent limits. We would agree that the Town maintain the existing WWTP and its facilities to meet sanitary survey and current permit requirements, but refrain from making significant investments now as most investment in the current WWTP processes now will more than likely not contribute to the future processes to be incorporated into any future improvements to the plant. We would also likely suggest that the Town refrain from removing any excess sludge from the plant at this point as it is likely that sludge removal will be required with any future overhaul of the WWTP and could end up being subsidized by future funding opportunities. We would, however, suggest that the Town conduct a subsequent sludge profile in each cell to gauge current sludge levels and available capacities. If the WWTP begins to exceed current effluent permit limits, then it may wish to invest in some limited sludge removal to increased lagoon capacity and mitigate release of biosolids into the effluent.

WASTEWATER COLLECTION SYSTEM CONSIDERATIONS

The most recent Comprehensive Plan (2011) identified Town limits/annexed properties as well as those designated for Tier 1 annexation and Tier 2 annexation. We are unaware of any master planning that has been done for the annexed parcel immediately northeast of the school property and other parcels in this vicinity on the north side of Highway 330 that are within the Tier 1 annexation area, but it seems that these properties may be relevant to the design of and future expansion options for the lift station on the school site. If any of these properties could benefit from utilizing gravity sewer and tying into the replacement lift station, the District's engineer should provide an abbreviated basin study and, if warranted, allow for an appropriate future expansion in its design of the lift station. This would also require an assessment of the existing force main and an easement for a gravity line across a portion of the school property to allow for connection to the lift station. At a minimum, the proposed lift station site should be masterplanned to accommodate for future expansion and potentially masterplan the force main to accommodate future expansion as well. These accommodations for future growth may necessitate a cost-sharing agreement between the Town and District.

KLJ TASK ORDER REVIEW

RESPEC has reviewed the draft Task Order 2404-00219_03 by KLJ Engineering with respect to both the immediate concerns related to the new school facility and longer-term issues related to pending and future development. We offer the following comments.

WATER

KLJ's scope with respect to water system modeling is comprehensive and should provide the Town with the analytical tools it needs to evaluate not only the new school's impact on the water distribution system but also that of the proposed 43-unit development and future development proposals.

The Town might request that KLJ specifically analyze the impacts of the proposed 43-unit residential development on the water distribution system once the model is developed and calibrated, as well as assumed demands from other annexed parcels that the Town anticipates will be prioritized for future

development (Tier I annexation parcels.) Such an analysis would provide the Town with a basis upon which other proposed developments can be evaluated.

KLJ has removed the water age analysis from its scope to reduce fees. Water age is an important consideration for any public water system as drinking water quality and safety is impacted by the delicate balance of water chemistry realized through choice of disinfection method, chlorine residual, tank sizing and mixing within tanks, and operational measures as well as water demand patterns. The Town does not currently have significant dead-end waterlines and manages chlorine residual for the current distribution system. Increasing the chlorine dosage at the water treatment plant could lead to higher-than-optimal chlorine residuals throughout most of the distribution system. The District should request a water age analysis from their engineer so that, at a minimum, operational procedures can be developed (for both the school and the Town's operation of the storage tank) to mitigate the potential negative effects of the length of the watermain extension and seasonal periods of lower demand. This work should be coordinated with the Town. Should an analysis show that additional measures are needed, the Town can work with their engineer and the school's engineer to evaluate equipment (passive or active mixing) and operational procedures (cycling, flushing) that can be employed at the storage tank/system level. It should also be noted that if parcels northeast of the school property along Highway 330 develop, annex, and are connected to the Town's distribution system, there will be more demand on this water main extension and the dead-end length to the school will effectively decrease.

WASTEWATER

KLJ's draft Task Order states that the firm will "assess the capacity impacts of the replacement lift station on the performance of the existing [waste]water treatment facilities and collection system." Although KLJ states that their scope does not include an alternatives analysis for the lift station replacement, it would be beneficial for KLJ to opine on the possibility of serving one or more of the parcels east of the school on Highway 330 via gravity sewer to the new lift station. Again, it would be logical to extend this evaluation to include the potential impacts of the proposed 43-unit subdivision on the WWTP since this would represent a nearly 20 percent increase in residential taps.

OVERALL PRIORITIZATION AND FUNDING CONSIDERATIONS

Table 1 summarizes the prioritization of capital improvement projects related to water and wastewater. Although this is intended to assist the Town in identifying immediate needs for preparing a 2025 budget and with general capital planning, KLJ's planned work will better inform 5- and 10-year capital planning efforts. The applicable short- and mid-range capital planning spreadsheets can be revised at the conclusion of KLJ's services defined in the Task Order #2 scope.

Table 1 – Recommended CIP Prioritization

ITEM NO.	CIP PROJECT	2020* ORIGINAL ESTIMATE	x 3%/yr INFLATION FACTOR	2024 ADJUSTED COST
	Water			
1	Clearwell superstructure (roof) replacement	$150,000	1.1255	$168,825
2	WTP building repairs	$66,000	1.1255	$74,283
3	Cost sharing for school waterline extension and new finished water storage tank			TBD
	Distribution system recommendations			
4	Upsize High St pipeline	$207,000	1.1255	$232,979
5	Looped pipe - Hwy 330	$360,000	1.1255	$405,180
6	Looped pipe - 59.5 Rd	$310,000	1.1255	$348,905
7	Bulk water filling station improvements	$15,000	1.1255	$16,883
8	Hoosier Ditch improvements	$1,012,000	1.1255	$1,139,006
9	Restoration of springs building	$2,000	1.1255	$2,251
10	Annual raw water system maintenance	$2,500	1.1255	$2,814
	Subtotal - water			**$2,391,125**
	Wastewater			
1	Sludge profiling			$0
2	Sludge removal and disposal	$120,000	1.1255	$135,060
3	Cost sharing for school lift station replacement			TBD
4	WWTP lab building maintenance	$2,000	1.1255	$2,251
	Collection system recommendations			
5	Grove St/59.5 Rd line replacement w/ MH's	$750,000	1.1255	$844,125
6	New mechanical WWTP *(2022 estimate)*	$6,000,000	1.0609	$6,365,400
	Subtotal - wastewater			**$7,346,836**

* 2020 estimate unless otherwise noted

Attachment:

Site Location Application for New or Change in Design Capacity of a Lift Station

Regulation 22 Site Location Application Form
Section 22.9 – Lift Station

A. Project and System Information			
System Name			
Project Title			
County			
Associated CDPS Permit No.			
Date Fee Paid or payment attached		Invoice Number and Check Number	
Design Company Name			
Design Engineer		CO License Number	
Address			
Email		Phone	
Applicant/Entity			
Representative Name			
Address			
Email		Phone	

B. Project Information							
Location (existing or proposed site)			***Proposed Project Capacity***				
Brief location description			Firm Pumping Capacity (capacity with the largest unit out of service)			GPM	
Legal Description (e.g., Township, Range)			Service Area Flow to Lift Station (maximum month average flow)			MGD	
County							
Latitude			Service Area Flow to Lift Station (peak hour flow)			MGD	
Longitude							
Funding Process	Will the State Revolving Fund (SRF) loan program be used to finance any portion of the project?		Yes	☐	No	☐	If yes, please list project number
Project Schedule and Cost Estimate							
Estimated Bid Opening Date							
Estimated Completion Date							
Estimated Project Cost							

Project and System Information	
System Name	
Project Title	
County	
Associated CDPS Permit No.	

Treatment Entity Information	
1.	Name and address of the treatment plant providing treatment (Receiving treatment entity must fill out "Receiving Wastewater Entity Certification")

Site Information	
2.	**Vicinity maps of site location which includes the following:** a) 5-mile radius map: all treatment plants, lift stations and domestic water supply intakes b) 1-mile radius map: habitable buildings (e.g., residences, schools, and commercial structures), location of public and private potable water wells, an approximate indication of the topography of the area, and neighboring land uses.
3.	**Site Location Zoning**
	a) Present zoning of the site location?
	b) Zoning within a one (1) mile radius of the site location?
4.	**Flood Plain and Natural Hazards**
	a) Is the site located in a 100-year flood plain or other natural hazard area? If so, what precautions are being taken?
	b) Has the flood plain been designated by the Colorado Water Conservation Board, Department of Natural Resources or other agency? If so, please list agency name and the designation.
5.	**Legal Arrangements Demonstrating Control of the Site**
	Please provide the legal arrangements showing control of the site or right-of-way for the project life or showing the ability of the entity to acquire the site or right-of-way and use it for the project life.

Lift Station Information	
6.	Please describe the period during which service area build-out will occur.
7.	Please describe the flows/loadings expected in the first five years operation. Also provide the flow/loading projections showing projected flow and loading over the following 20 years.
8.	Will the proposed lift station replace an existing lift station?
	Yes ☐ No ☐
	If Yes, please describe the current flows and loadings that will be switched to the proposed lift station.
9.	Describe emergency back-up system in case of lift station and/or power failure to minimize the possibility of sanitary sewer overflows and health hazards to the public and operations personnel.

Project Information	
10.	What entity is financially responsible for the construction of the treatment works?
11.	What entity has the financially responsibility for owning and long term operating expense of the proposed treatment works?
12.	What entity has the responsibility for managing and operating the proposed treatment works after construction?
Additional Factors	
13.	Please identify any additional factors that might help the Division make an informed decision on your site location application.

Applicant Certification and Review Agencies Recommendation
Section 22.9 – Lift Station

Project and System Information	
System Name	
Project Title	
County	
Associated CDPS Permit No.	

1. Applicant Certification

I certify that I am familiar with the requirements of *Regulation 22 - Site Location and Design Regulations for Domestic Wastewater Treatment Works*, and have posted the site location in accordance with the regulations. An engineering report, as described and required by the regulations, has been prepared and is enclosed.

Applicant Legal Representative			
Position/Title	Typed Name	Signature	Date
Email		Phone	

The system legal representative is the legally responsible agent and decision-making authority (e.g. mayor, president of a board, public works director, owner). The Design Engineer is not the legal representative and cannot sign this form.

2. Recommendation of Review Agencies

As required in Sections 22.9(1)(c) and 22.9(1)(d), the application and the engineering report must be submitted to all appropriate local governments, local health authority, 208 designated planning and management agencies and other state or federal agencies for review and comment prior to submittal to the Division. By signing below, the review agency: 1) acknowledges receipt of the proposed site location application, 2) has reviewed the proposed application and may elect to provide comments, and 3) has provided a recommendation concerning the application to the Division. The recommendation should be based on the consistency of the proposed site location application with the local comprehensive plan(s) as they relate to water quality and the approved regional water quality management plan(s). *Please note: Review agencies are encouraged to provide project comments; however, if a review agency does not recommend approval then the agency must attach a letter describing the reason for their decision or comment on the next page.*

Signature of designated Management Agency (i.e., Water Quality Authority, Watershed Association, Watershed Authority)					
Agency	Typed Name	Signature		Date	
Email		Phone	Recommend Approval?	*Yes*	☐
				No	☐
Signature of County, if the site is located in unincorporated areas of a county					
County	Typed Name	Signature		Date	
Email		Phone	Recommend Approval?	*Yes*	☐
				No	☐
Signature of City or Town, if the site is located within a City/Town boundary or within three miles of the City/Town boundary (if multiple, attach additional sheets as needed)					
City/Town	Typed Name	Signature		Date	
Email		Phone	Recommend Approval?	*Yes*	☐
				No	☐

Signature of Local Health Authority					
Agency	Typed Name	Signature		Date	
Email		Phone	Recommend Approval?	*Yes*	☐
				No	☐
Signature of 208 Designated Planning Agency					
Agency	Typed Name	Signature		Date	
Email		Phone	Recommend Approval?	*Yes*	☐
				No	☐
Signature of other State or Federal Agencies, if treatment works is located on or adjacent to a site that is owned or managed by a federal or state agency.					
Agency	Typed Name	Signature		Date	
Email		Phone	Recommend Approval?	*Yes*	☐
				No	☐
Signature of other undesignated Basin Water Quality Authority, Watershed Association, Watershed Authority, etc.					
Agency	Typed Name	Signature		Date	
Email		Phone	Recommend Approval?	*Yes*	☐
				No	☐

Review Agency Comments:

COLORADO
Department of Public Health & Environment

Water Quality Control Division
Engineering Section

4300 Cherry Creek Drive South, B2
Denver, Colorado 80246-1530
CDPHE.WQEngReview@state.co.us
303-692-6298

Wastewater Receiving Entity Certification
Section 22.9 – Lift Station

Project and System Information			
System Name			
Project Title			
County			
Receiving Treatment Entity Information – Certification of Available Treatment Capacity			
Receiving Treatment Entity		Receiving Treatment Plant	
CDPS Permit No.		Permit Capacity	
Site Location Approval No. (attach copy of approval)		Site Location Approved Capacity	

Proposed treatment works capacity impacts on receiving treatment plant (projected at buildout or 20-years)	
Proposed maximum month average hydraulic capacity:	MGD
Proposed peak hour hydraulic capacity:	MGD
Proposed maximum month average organic loading capacity:	lbs BOD_5/day
Proposed treatment works will increase the receiving treatment plant's hydraulic loading to:	(% of total plant capacity)
Proposed treatment works will increase the receiving treatment plant's organic loading to:	(% of total plant capacity)

Treatment Certification – Section 22.9(1)(b)(v)(A)			
Yes, the treatment entity will provide treatment	☐	No, the treatment entity will not provide treatment	☐

Capacity Certification – Section 22.9(1)(b)(v)(B)	
I certify that the receiving treatment plant is not presently receiving wastes in excess of the design capacity as defined in the above listed site location approval and discharge permit and has the capacity to treat the projected discharge from the proposed treatment works (initial in box).	
OR	
I certify that the receiving treatment plant does not currently have the capacity to serve the proposed project flows but is under construction, or will be in a phased construction of new or expanded facilities, and will have the necessary capacity to treat the projected discharge from the proposed treatment works (initial in box).	
Estimated date capacity will be available	
Note: Projections of flow and loading to the treatment plant over the period during which build out of the service area will occur or twenty years, whichever is less, as well as current and future plant capacity information must be provided to demonstrate the plan for maintaining adequate capacity to treat. Any proposed treatment plant phased construction must be shown in the Water Quality Management Plan or by appropriate planning and engineering studies.	

Compliance Status Certification – Section 22.9(1)(b)(v)(C)	
I certify that the receiving treatment plant has not been in violation of any effluent limitations in its discharge permit for the last two years (initial in box).	
I certify that the receiving treatment plant is not operating under a Notice of Violation and/or Cease and Desist Order from the Division resulting from discharge permit violations (initial in box).	
Note: If there have been effluent violations or if the treatment plant is operating under a Notice of Violation and/or Cease and Desist Order from the Division, please provide additional description of the situation and the treatment entity's proposed corrective measures to achieve consistent compliance. The Division will evaluate information provided and determine if approval should be granted, granted with conditions, or denied.	

Signature of Treatment Entity Representative certifying that the information presented above is accurate and complete.			
Position/Title	Typed Name	Signature	Date
Email		Phone	

WWTP PRELIMINARY ENGINEERING REPORT

Town of Collbran, CO

September 2022

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Appendix

PROJECT PLANNING

Location

The Town of Collbran (Town) is located on the western slope in Mesa County. The Town is east of Grand Junction along Plateau Creek. Formal boundaries for the Town of Collbran encompass a land area of 0.59 sq. miles. The area is home to cattle ranching and tourism. The general location of Collbran is shown in the figure below.

Figure 1. Project Location

Planning Area

The planning area for this report includes the area currently being served by the Valleywide Sewage System. The service area is shown in the figure below.

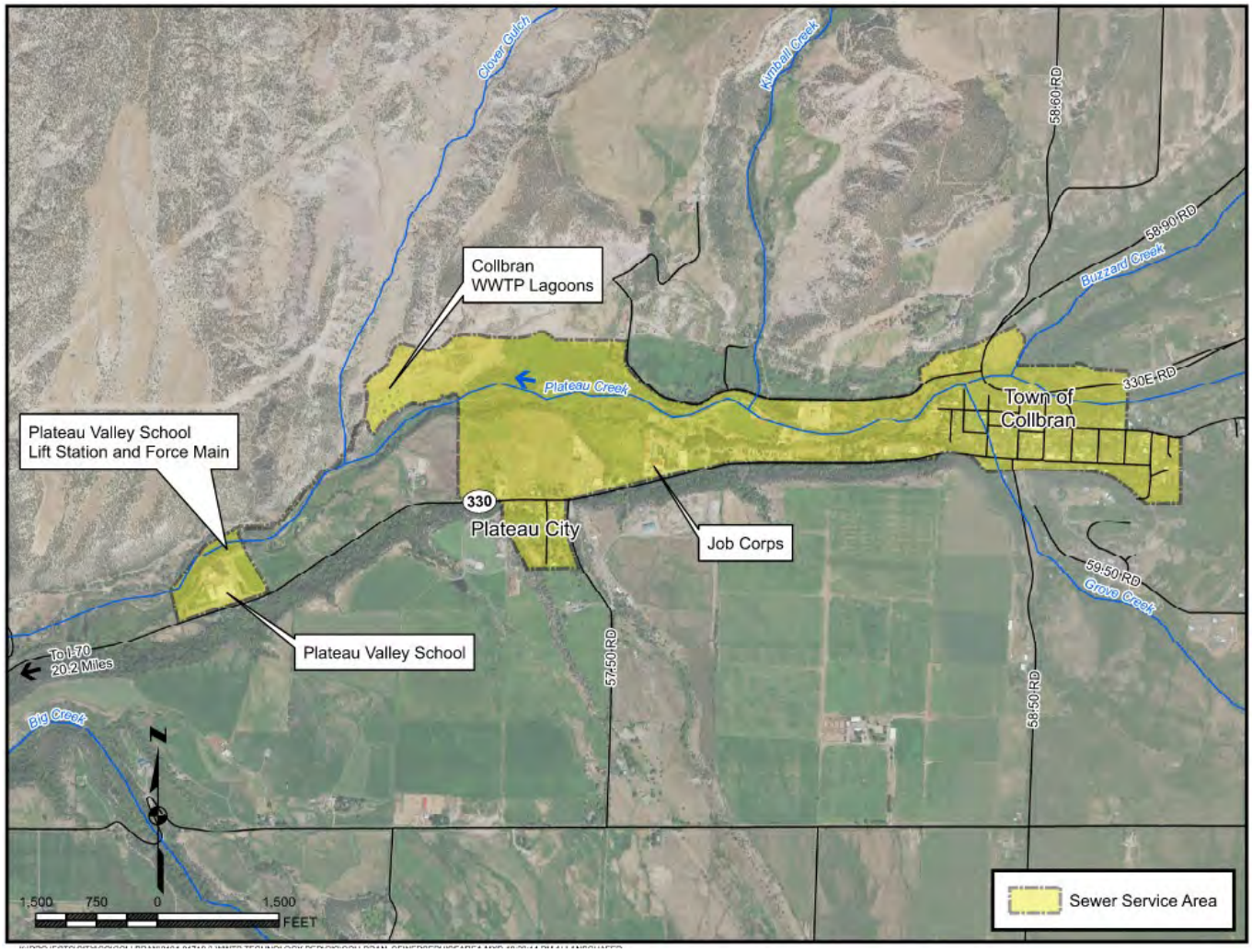


Figure 2. Sewer Service Area

Environmental Resources Present

Floodplains

The Town is not within a designated floodplain or floodway. The area immediately surrounding the wastewater treatment facility has not been mapped by the Federal Emergency Management Agency (FEMA). See Appendix A for the available maps. However, Plateau Creek, Buzzard Creek, and Grove Creek all run through the Town of Collbran. These creeks drain large watersheds upstream of the town and areas along these creeks can flood under high-flow conditions.

Wetlands

Colorado Wetland Inventory does not indicate any wetlands within the Town's Wastewater Treatment Plant (WWTP) property. See map included in Appendix A.

Climate

Climate data obtained from the Western Regional Climate Center indicates that Collbran's average annual maximum temperature is 61.7 degrees Fahrenheit with an annual average minimum temperature of 30.7 degrees as

depicted in Figure 3 below. The average annual precipitation in Collbran is 14.81 inches and the average annual evaporation measured at the nearest evaporation station in Grand Junction is 64.13 inches.

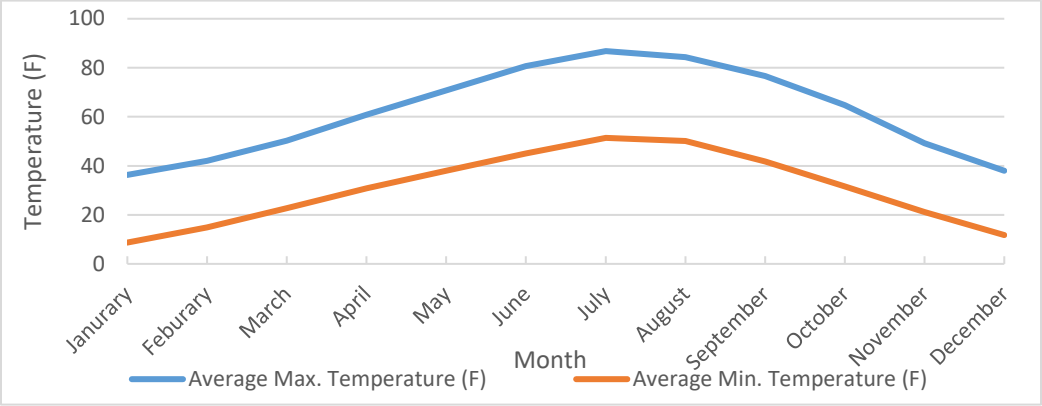


Figure 3. Annual Temperatures

Land Use

Land use within the Town planning area consists primarily of residential housing and commercial businesses consistent with a small town. Land use outside of Collbran is mainly used for ranching and pass-through tourism in the summer and fall months.

Socio-Economic Issues

Households in Collbran, CO have a median annual income of $35,625 (2019 value), which is less than the median annual income of $65,712 (2019 value) across the entire United States. Of the population for whom poverty status is determined in the Town; 47.8% (289 of 605) live below the poverty line. This is higher than the national average of 12.3%.

Based on data from the Department of Housing and Urban Development, the Town has a low to moderate income percentage of 37.1% for fiscal year 2011-2015. However, increasing rates to fund any projects that are recommended in this Preliminary Engineering Report will impact the users on a fixed income as a larger share of living expenses will be needed for utilities. The human health and environmental effects are not expected to be disproportionate to the benefits received by improvements to the wastewater collection and treatment facility.

Population Trends

Historic Data

The Town of Collbran, according to the 2020 census, has a population of 369. The table below shows the historic population trends for the Town. The 2010 census shows the population more than doubled from 2000 to 2010 and then fell back to 2000 population in the 2020 census. This is due to the oil boom that was occurring when the 2010 census was taken. Since then, the oil boom and the population resulting from the boom, have been reduced to pre oil boom status. Mesa County, where Collbran is located, also shows and increase in population in the 2010 census. Following the 2010 census, Mesa County is showing an annual population increase of less than 1%.

According to the 2020 surface discharge permit application the Town currently services 250 residential taps, and 36 commercial taps; plus taps for the Job Corp, Plateau Valley School and Hospital. The Job Corp, when in session, can house up to 210 students in dorms, in addition to the staff and students that attend classes but do not live on campus. This can result in additional temporary population that can add to the wastewater flows. The discharge permit application states that 44% of the estimated flows are a result of the Job Corp, Plateau Valley School and Hospital.

Table 1 - Historic Population

Census Year	Population	% Change +/-	Census Year	Population	% Change +/-
1910	156		1970	225	-27.4
1920	286	83.3	1980	344	52.9
1930	341	19.2	1990	228	-33.7
1940	301	-11.7	2000	388	70.2
1950	237	-21.3	2010	708	82.5
1960	310	30.8	2020	369	-47.9

Future Growth

For the purposes of planning an assumed annual population growth of 1% was used for the 20-year planning period. The Town does not anticipate any new industries or any reason to see a higher-than-average influx of new residents. The Town does not plan on adding any additional sewer service areas. The graph below shows the design population growth for the 20-year planning period based on an assumed annual growth of 1%.

Table 2 - Planning Period Population Projections

Year	Population	Year	Population		
2022	376	2029	404	2036	433
2023	380	2030	408	2037	437
2024	384	2031	412	2038	441
2025	388	2032	416	2039	446
2026	392	2033	420	2040	450
2027	396	2034	424	2041	455
2028	400	2035	428	2042	459

Community Engagement

Community engagement will be critical in the process if the Town elects to move forward with one of the alternatives discussed in the report, or any other improvements to the WWTP. Improvements to the WWTP might result in cost increases to users to pay for infrastructure improvements and the public will need to be well informed prior to any changes taking effect. Meetings will need to be held to collect input from the public as part of the grant funding process.

EXISTING FACILITIES

Location Map

The figures below show the access road and the layout of the WWTP site. The WWTP is located north of Plateau Creek. The WWTP discharges into Segment 16b of the Lower Colorado River subbasin to the Plateau Creek, a tributary to the Colorado River. The stream segment is classified for the following uses: Recreation (Class 2), Aquatic life (Class 1 cold), water supply and agriculture.

Figure 4. WWTP Site Access

Figure 5. WWTP Site Layout

Compliance

The WWTP has historically maintained acceptable discharge limits with only a few violations. However; with the upcoming changes to sanitary treatment system discharge permits, which will most likely include nutrients limit, there is concern that the existing lagoon may not be capable of meeting the new nutrient limits without additional treatment. An asset inventory and Capital Improvement Plan prepared by SGM (October 2020) discussed the inability of the current WWTP lagoon system to meet the upcoming Reg 85 nutrient limits.

CDPS Permit (Current)

The Town of Collbran WWTP maintains an Individual Permit (Permit Number CO0040487) under the Colorado Discharge Permit System (CDPS). The Town applied for a permit renewal in 2020 and will be set for the next renewal cycle in 5 years from the renewal date (ie 2025). A copy of the current surface water discharge permit is included in Appendix B.

The individual permit held by the Town is an administratively continued individual permit and cannot be modified. That means that any modifications to the WWTP must wait until the new permit is issued, then the Town can proceed with requesting modification to the WWTP.

Existing Wastewater Flows

The WWTP monitors the daily flow as part of their discharge permit requirements. The table below provides historic flows (June 2019-March 2022) at the WWTP.

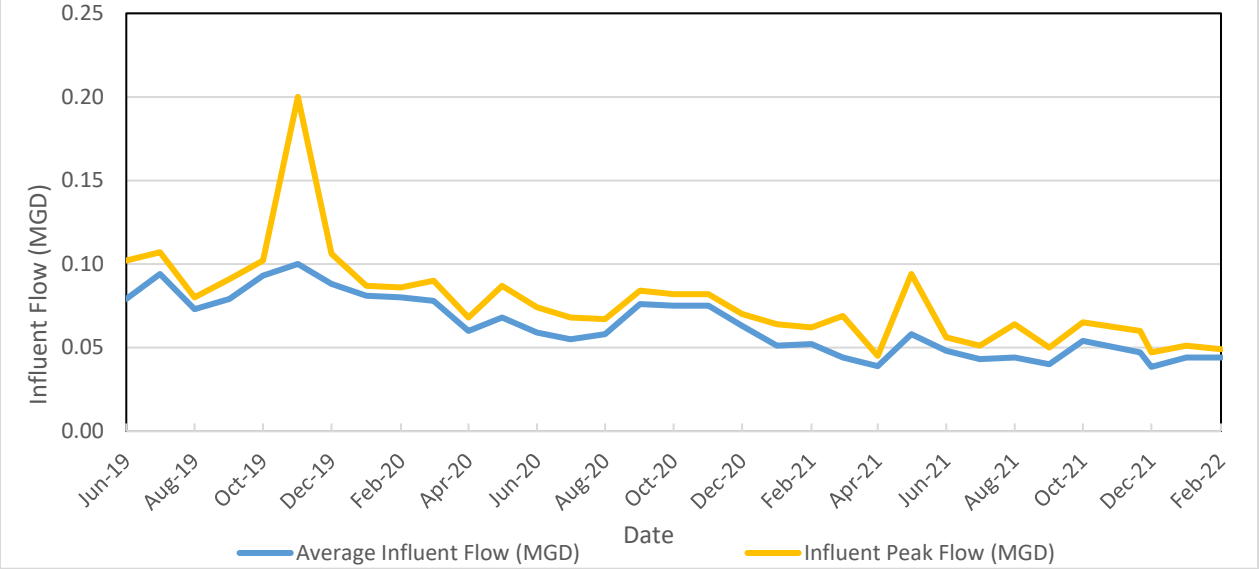


Figure 6. Historic Influent Flow

The Town has seen a decrease in the monthly average and peak daily flow from 2019 to the present. The Town has been addressing the issue of increased groundwater and stormwater entering the sewer system through cracks and breaks in the pipe and manholes commonly referred to as Inflow and Infiltration (I/I). The effluent flows for the years 2019- present are shown in the figure below. Flow data is available as a monthly average flow. Given the lack of available long-term data for this PER it is assumed that the I/I are within allowable limits.

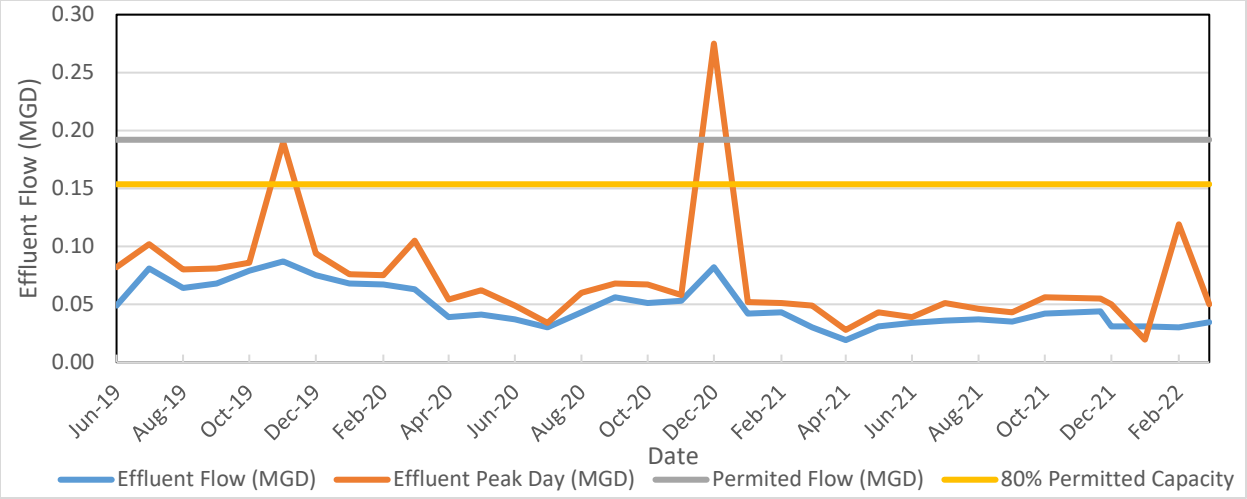


Figure 7. Historic Effluent Flow

The Town WWTP average daily flow is below the permitted 30-day average of 0.192MGD. The WWTP operates between 25-55% of the permitted capacity. Like what was shown in the influent flow graph, the average effluent flow has been decreasing from 2019 to present. Based on the design criteria provided by Colorado Department of Public Health & Environment (CDPHE) and using the current assumed resident population the current influent wastewater flows are presented in the table below.

Table 3 – Current WWTP Design Flow

Parameter	Flow
Average Daily Flow (ADF) (gpd)*	36,900
Peak Hourly Flow (gpd) (ADF x 4.0)	149,000
Peak Day Flow (gpd) (ADF x 2.2)	81,500

* Assumes 100 gpcpd based on Town population of 376

The average daily flows measured at the WWTP are greater than the calculated flow presented in the table above. This is due to the Job Corp, Plateau Valley School, and the Hospital accounting for an estimated 44% of the flows Using the Town's population to estimate the average daily flows is difficult because these three entities provide services to other individuals from the surrounding areas. The Town also experiences higher flows during the hunting season with visitors coming to town. Based on the flows over the past year (January 2021-Feburary 2022) and using the Town's population the assumed gallons per capita per day was adjusted to 125 gpcpd. The adjusted WWTP flows based on a change in the per capita flows are shown in the table below.

Table 4 – Current Adjusted WWTP Design Flow

Parameter	Flow
Average Daily Flow (ADF) (gpd)*	47,000
Peak Hourly Flow (gpd) (ADF x 4.0)	188,000
Peak Day Flow (gpd) (ADF x 2.1)	98,700

* Assumes 125 gpcpd based on Town population of 376

With an adjustment the Town flows are still significantly below what they are permitted for. The Town does not anticipate much population growth over the design period.

Existing Water Quality

The WWTP discharge permit allows for an influent organic loading of 272 lbs BOD_5 per day. The effluent BOD_5 limit for a 30-day average is 30 mg/l and a removal rate of 85%. The figure below shows the BOD_5 data collected and recorded from March 2019 to February 2022.

BOD_5

BOD_5 is one of the parameters included on the discharge permit. The historic data for the BOD_5 loading is shown in the figure below.

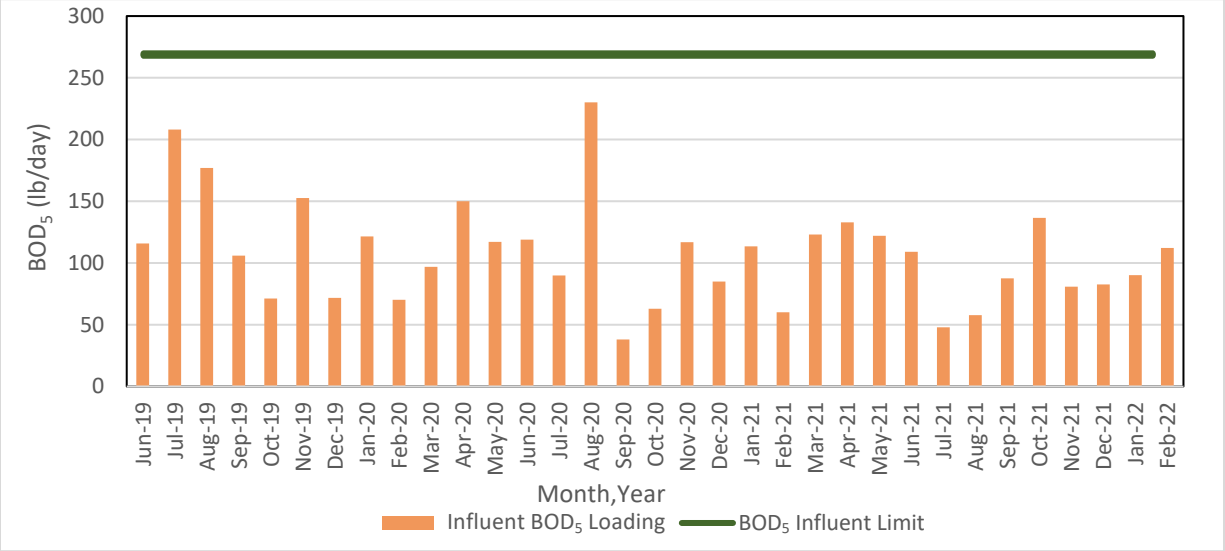


Figure 8. Historic BOD_5 Influent Loading

The average influent BOD_5 loading for the last 3 years is 108 lbs/day which is below the permitted 30-day average concentration of 272 lbs/day.

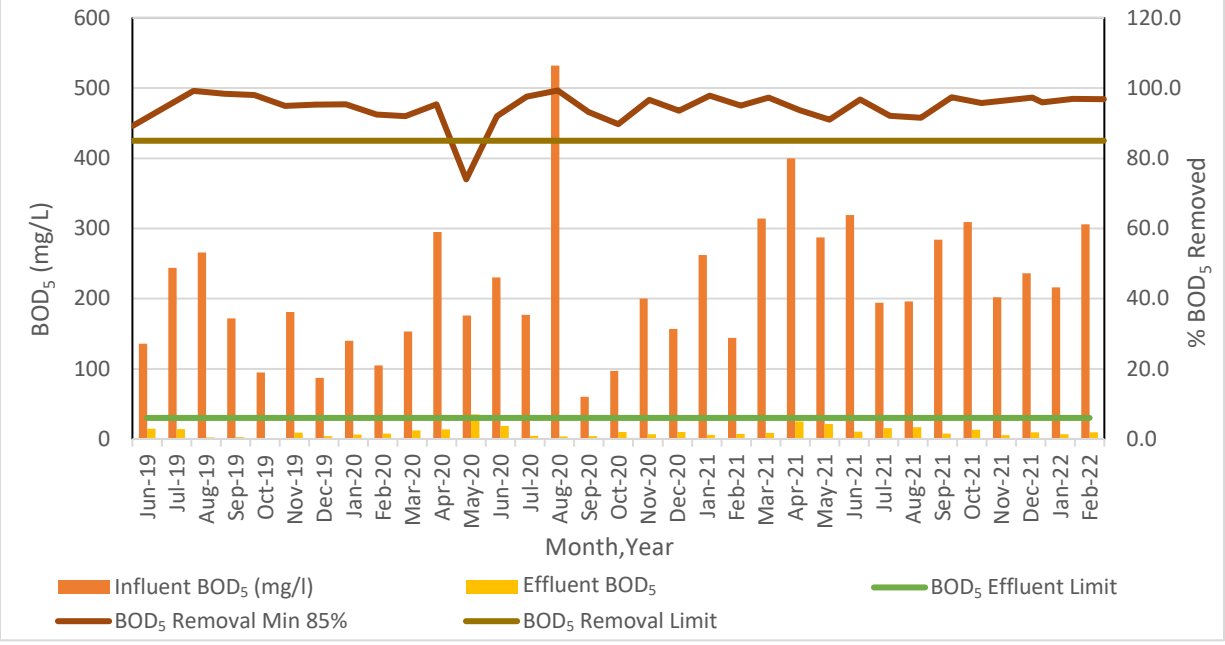


Figure 9. Historic Effluent BOD_5

The WWTP did not record any violation of the permitted BOD5 effluent limits except for May 2020 which was due to an instrument error.

TSS

The TSS effluent limits for the WWTP for a 30-day average are 75 mg/l. The figure below shows the TSS data collected and recorded from March 2019 to February 2022.

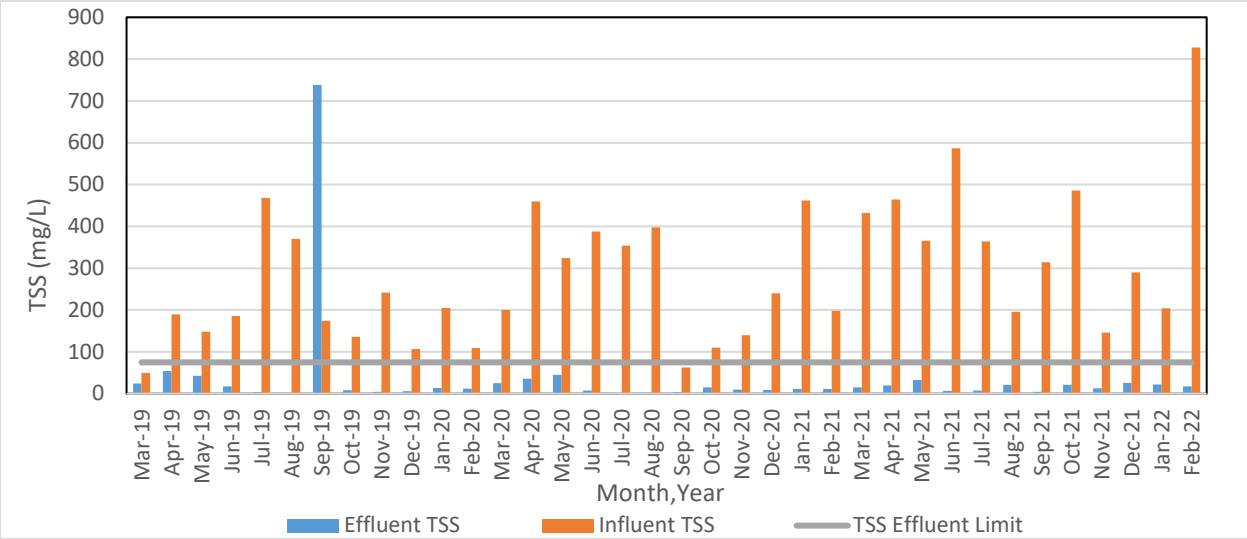


Figure 10. Historic Influent and Effluent TSS

The data provided shows one violation in September 2019. The average TSS effluent concentration is 17 mg/l.

Ammonia

Another effluent parameter included in the CDPS is ammonia. The limits vary month to month and were established based on the stream low flow as calculated by CDPHE. The summer months have a lower effluent requirement compared to the winter months. The figure below compares the sampled effluent ammonia vs the permitted limits.

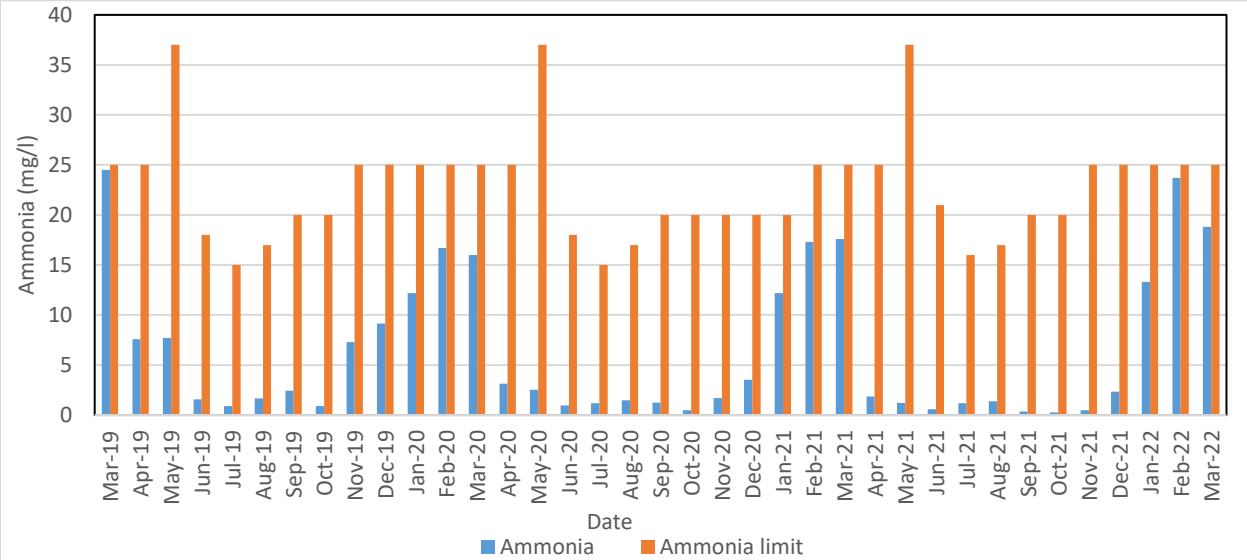


Figure 11. Historic Effluent Ammonia

The ammonia concentrations were below the permitted limit in all the samples as shown in the figure above.

Condition Assessment

An assessment of the current condition of the WWTP was conducted. This section discusses the findings of the site visit. The wastewater design criteria policy (Policy Number WPC-DR-1) Design Criteria for Domestic Wastewater Treatment Works (DWWTW) is referenced in the following section for discussion of different components of the WWTP.

WWTP Process Flow Diagram

The current WWTP layout is shown in the figure below.

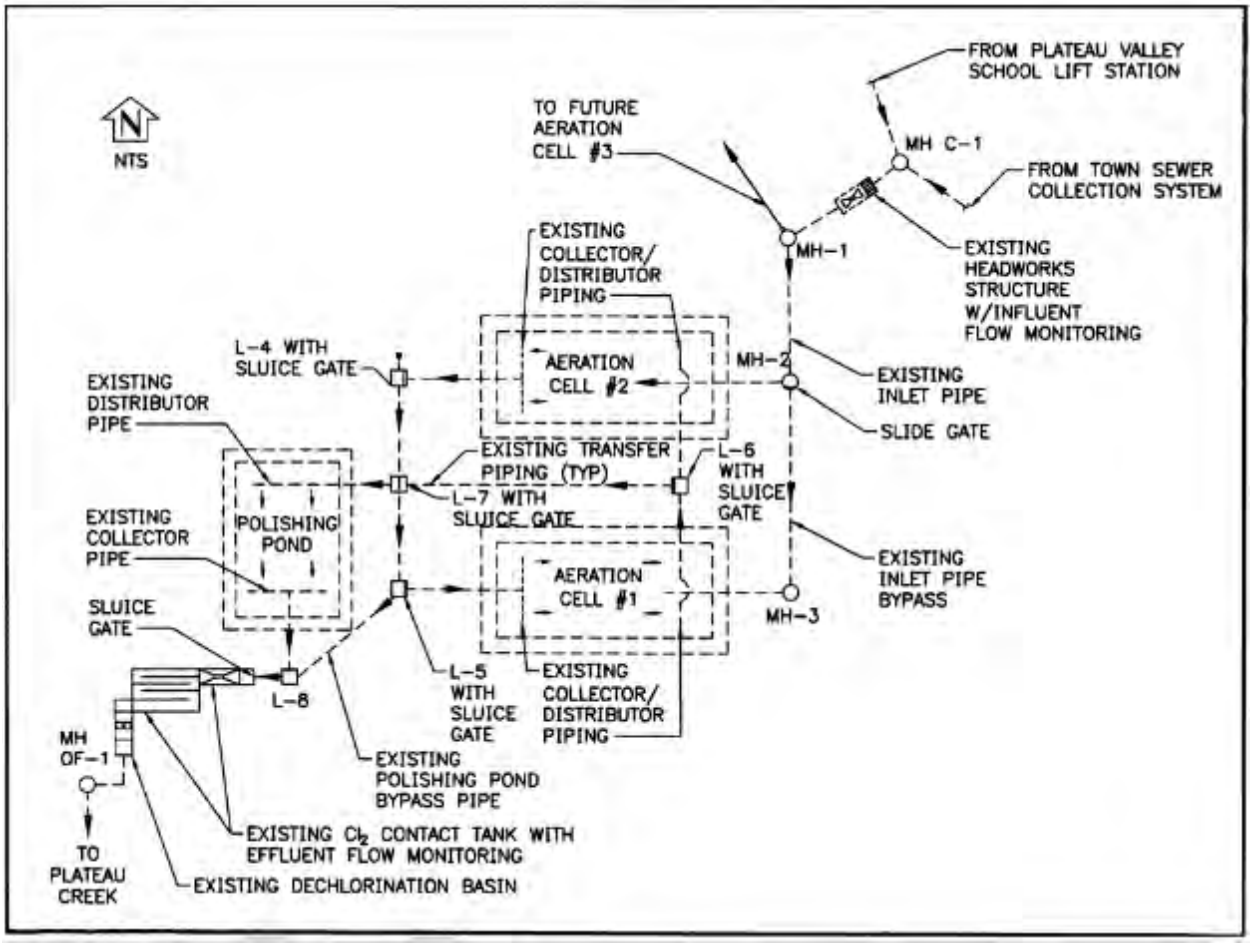


Figure 12. WWTP Flow Diagram (From Permit Renewal Application)

WWTP Access

"A pond WWTP must be constructed with a perimeter fence suitable for exclusion of livestock utilizing no less than 4 strands of barbed, smooth wire or woven wire with a height no less than 3.5 feet. Gates for operator access must be constructed in a fashion to permit locking and exclusion of livestock and wildlife" (8.1.2.f.1). "Roadways with a driving surface no less than 10 feet in width must be provided adjacent to each wastewater pond on all sides of each pond" (8.1.2.f.2). "Signage must be attached to the fence, fence posts or to freestanding posts at intervals no greater than 200 feet" (8.1.2.f.3).

INSTALLED

Access to the WWTP from the main road is via a .75-mile maintained gravel road. The WWTP is surrounded by stock fencing with t-post and a double swing chain link locked entrance gate. The road around the wastewater cells is mowed grass with a minimum width of 10 feet.

CONDITION

The access road to the WWTP from the public road is in good condition overall but did have a few locations that could use additional gravel surfacing and grading. The access gate was adequately locked and requires a key for access to the WWTP site. The fencing was deemed adequate for keeping cattle out but is aged and will need to be replaced in the future. There were no "No Trespassing" signs visible near the entrance. The access roads around the cells are mowed grass and are in good condition and rainfall runoff from the road drains away from the cells. Access from the gate to the chlorine building, the headworks building and around the settling pond is a gravel/grass surface. Access from the gate to the headworks building is gravel and is in good condition. Pictures of the condition of the access road in various locations are shown in the figures below.

Figure 13. Access Road around Cell No. 1

Figure 14. Access Road at the Headworks Building

Figure 15. Access Road entrance gate to Chlorine Building

Screening

"Screening devices, or equivalent method (e.g., septic tank), must be provided for all WWTPs for the purpose of removing debris and nuisance materials from the influent wastewater" (5.2.0). "Firm capacity of screening facilities must meet design peak hour influent flow" (5.2.1). "For manually cleaned screens, clear openings must be at least 1 inch but not more than 1.75 inches and bars must be placed at a slope of 30 to 45 degrees from the vertical".

INSTALLED

The screening system includes two (2) bar racks of equal dimensions. Screening baskets are located adjacent to the bar screens, one for each screen and can be manually removed by a handle.

Table 5 – Screening Information

Item	Information
Bar Screen	¼" 2"
Manual Bar Screen Opening (inches)	2"
Channel Width	11 ½"
Velocity (fps) (Section 5.2.3.b.)	3.0
Screening Basket Dimensions	11 ½" x 11 x 4"
Hydraulic Capacity (peak flow)	2 MGD

CONDITION

The headworks equipment is installed in a plywood structure with a slanted roof. The condition of the building is poor and the door no longer closes and has minimal room for storage within the structure (Figure 16-17). The bar screen and basket are shown in Figure 18 below. The bars on the screen are all intact and it appears the screening baskets are in good condition.

Figure 16. Influent/Headworks Building Interior

Figure 17. Influent/Headworks Building Exterior

Figure 18. Influent Bar Screen

Flow Measurements

"Flow metering at the headworks area of any treatment facility shall be provided. The metering device shall be equipped with a local flow indication instrument and a flow recording-totalizing device suitable for providing permanent flow records." (2.3.2)

INSTALLED

The Headworks include a Parshall flume for measuring influent flow. The flume is 3-inch, fiberglass reinforced polyester. The data is recorded by an open channel ultrasonic flow recorder and totalizer device.

CONDITION

The Parshall flume and measurement equipment located in the headworks building is in good condition and the flow meter is regularly calibrated to maintain consistent accuracy.

Control/Lab Building

The control/lab building in located to the north of the settling pond (Figure 19). The building houses the lab equipment and controls for the aeration equipment in Cells No. 1 and 2. The controls for the mechanical surface aerators are located outside the building under an overhang. The exterior of the building is in poor condition and the control panel is exposed to the elements. A complete assessment of the structure is included in the Asset Inventory and Capital Improvement Plan prepared by SGM in October 2020.

Figure 19.Control Building/Lab Exterior

Flow Structures

The WWTP includes 2 influent structures from the headworks building to Cells No. 1 and 2. The structure is a shallow concrete manhole with flow channels (Figure 20 and 21). The structures appear to be in good condition.

Figure 20.Cell No. 2 Influent Manhole

Figure 21.Cell No. 1 Influent Manhole

Wastewater Cells

The WWTP includes 2 mechanically aerated cells and one settling pond. "Aerated wastewater treatment pond systems must provide mechanical aeration in one or more individual ponds or cells of a DWWTW. Mechanical aeration may involve submerged, diffused air or floating or fixed propeller or turbine-type mechanical aeration" (8.2.0).

CDPE DESIGN CRITERIA

Table 6 – Wastewater Cells Design Criteria

Parameter	Design Criteria
Operating Depth, ft (8.2.1.a)	6.0 (minimum)
Length: Width Ratio (8.2.1.b)	1:1 to 5:1
Side Slope (8.2.1.c)	3 horizontal: 1 vertical
Free Board, feet (8.2.1.d)	2.0 feet (minimum)
Number of Ponds (aerated) (8.2.1.e and f)	2 (minimum)
Number of Ponds (not aerated) (8.2.1.e and f)	1 (minimum)
Seepage (8.1.2.e)	Less than 10^-6 cm/sec

POND CONFIGURATION AND CAPACITY

The information included in the table below was taken from the Valleywide Sewerage System Part II Aerated Lagoon Treatment Plans (dated November 10, 1982). A copy of the as-builts is included in Appendix C.

Table 7 – Wastewater Cells Capacity

Parameter	Current
Cell No. 1	
Length:Width Ratio	1:3
Side Slope	3:1
Total Depth (Feet)	15
Freeboard (feet)	3
Volume (MG)	2.05
Detention Time (peak day)	20
Detention Time (permit)	10.7
Aeration Type	floating aerator (3)
Aeration HP, each	7.5 hp
Cell No. 2	
Length:Width Ratio	1:3
Side Slope	3:1
Total Depth (Feet)	15
Freeboard (feet)	3
Volume (MG)	2.04
Detention Time (peak day)	20

Detention Time (permit)	10.6
Aeration Type	floating aerator (3)
Aeration HP	7.5 hp
Settling Pond	
Length:Width Ratio	1:1.5
Side Slope	3:1
Total Depth (Feet)	14
Freeboard (feet)	3.3
Volume (MG)	0.54
Detention Time (peak day)	5
Detention Time (permit)	2.8

The current aeration ponds and settling pond meet the CDPHE current design criteria.

CONDITION

The condition of Cell No 1 and 2 appears to be good except for some cattails along the interior perimeter of the berm. The rip rap appears to be sable and not major signs of sloughing. Figure 22-24 show the current condition of the cells.

Figure 22. Cell No. 1 and Cell No. 2 Berm Condition

Figure 23. Cell No. 2 Berm Condition

Figure 24. Cell No. 1 Berm Condition

The Settling Pond is showing some signs of rodent damage and erosion. Pictures of the current condition of the settling pond are shown in the figures below.

Figure 25. Settling Pond Berm Condition

Figure 26. Settling Pond Berm Condition

Transfer Structures

The WWTP transfer structures (Figure 27-28) indicate the current condition of the structures are good. The concrete does not appear to have any major spalling or exposed rebar. The gates are in good operating condition and can be opened and closed with no issues. The weirs appear to be holding back the water; however, an inspection of the weir structures was not conducted so the condition of the submerged portion of the structure is unknown.

Figure 27. Cell No. 1 and Cell No. 2 transfer structure condition

Figure 28. Diversion structure condition

Disinfection

"The hydraulic capacity of the inactivation step must be sized to convey the design peak instantaneous wet weather effluent flow, without bypass, taking into account the presence of flow equalization at the plant" (9.2.0.b). "When a single sample maximum is specified or utilized by the discharger based on the number of samples analyzed per week, inactivation capacity shall be sized for the wet weather peak hour design flow expected during the high groundwater infiltration season, taking into account the presence of flow equalization" (9.2.0.b.2). "a minimum contact time of 30 minutes must be provided at the design peak hour flow" (9.3.3.a).

INSTALLED

The chlorine contact basin consist of a Parshall flume followed by a 10'-6" x 18'-0" concrete tank with 4 channels and an inlet scum baffle. The WWTP doses 12.5% Sodium Hypochlorite at a rate of 8.9 mg/l. The WWTP also includes dechlorination that was recently installed.

CONDITION

The chlorine building (Figure 29) is in poor condition and is only enclosed on 3 of the 4 sides leaving a large opening leaving the equipment exposed to the elements. The metal roof on the building is in good condition, however the structure itself is in poor condition.

Figure 29. Chlorine structure condition

The chlorine recirculation pump structure is in good condition (Figure 30). The chlorine contact chamber (Figure 31) concrete structure and top grating are in good condition. The baffles within the contact chamber are constructed of wood and show signs of rot leading to leaks between the channels that can ultimately shorten the chlorine contact time. The re-chlorination chamber (Figure 32) is in good condition. The chlorination and dechlorination are operating as designed and the WWTP has not had any issues with meeting/exceeding the permit limits.

Figure 30. Chlorine Recirculation Pump structure condition

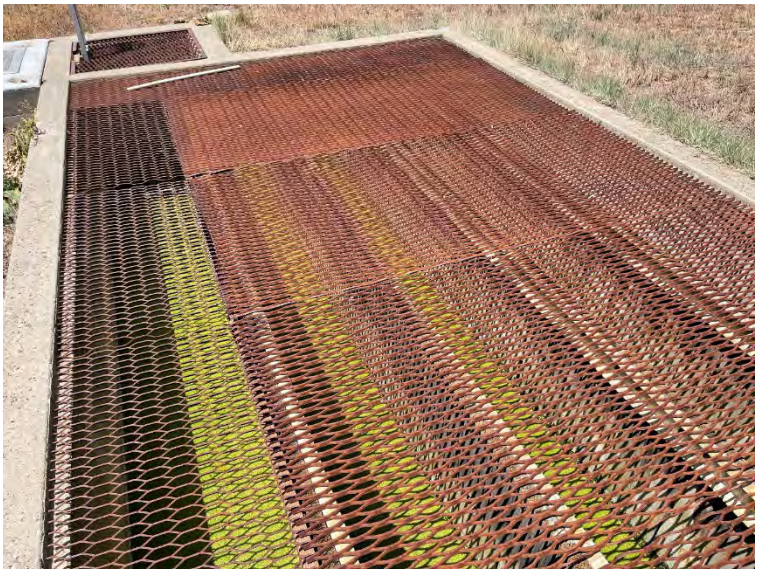


Figure 31. Chlorine Contact Chamber grating condition

Figure 32. De-Chlorination Chamber condition

Outfall

Prior to the chlorine contact chamber, the water flows through a Parshall flume located in the chlorination building (Figure 33) where flow measurements are taken. The flume appears to be in good condition.

Figure 33. Discharge Flume condition

The water then flows through an outfall pipe to a channel and discharges into the Plateau Creek. The discharge pipe appears to be in good shape (Figure 34). The outfall channel is overgrown but has not caused any issues with the water flowing to the Plateau Creek.

Figure 34. Outfall Pipe

Figure 35. Outfall Channel

Sludge

The Town has indicated that Cell No 1 and Cell No 2 have a significant volume of sludge that has settled to the bottom of the cells. The Town has been adding Restore by Solutions 4Earth to help in reducing the total sludge volume. According to their website "Restore fuels aerobic and anaerobic activity. It's heavier than water, so it sinks to the bottom, where solids accumulate. Restore brings solids to the surface where faster-acting aerobic bacteria can break them down quickly. The churn of rising bottom solids is the first sign of Restore in action."

High volumes of sludge in wastewater lagoons can have numerous negative effects including reduced treatment capacity which can lead to higher levels of BOD, TSS and ammonia. This can also lead to issues with odor. Excessive sludge accumulation can be the result of numerous things included the age of the lagoon or poor mixing within the lagoon. Cell No. 1 and 2 at the WWTP were designed as aeration cells and were constructed deeper than in a facilitative cell. If the aeration is not properly distributed throughout the deeper water levels the solids can settle and become anaerobic and take longer to breakdown.

When the sludge levels within the wastewater lagoon result in treatment issues, the sludge should be removed from the lagoon.

Financial Status of Existing Facilities

Sewer Rates

- In-Town Base Customer Charge: $12.10/unit
- Tier 1 Sewer Rate: $22.25/unit, up to 10,000 gallons of monthly water use per unit.
- Tier 2 Sewer Rate: $6.55/1,000 gallons, or part thereof, for water use/month over 10,000 gallons per unit.

Annual Operating Budget

INCOME

The Town brings in approximately $1,200,000.00 in taxes, fees and rents in 2021 (General Fund); $118,000.00 sewer services charges (Sewer Fund).

ANNUAL OPERATIONS & MAINTENANCE COSTS

The Town spends approximately $120,000.00 in 2021 on operations and maintenance of the existing WWTP and collection system.

Reserves

The Town has $152,000.00 in reserve sewer funds.

Water/Energy/Waste Audits

CDPHE performed a compliance inspection of the wastewater treatment system as a part of the CDPS. Most recent inspections were completed on December 7, 2020 inspection noted no major or other findings. Observation/Recommendation noted the following:

» The permittee is exploring technologies to attain future regulatory requirements. In the interim, the permittee is exploring changes in operations of the lagoons including changes to the aeration and increasing the depth of the lagoons to increase residence time.

NEED FOR PROJECT

Health, Sanitation, and Security

There can be negative impacts on the public's health, sanitation, and security because of deficiencies in the wastewater collection and treatment systems. The Town currently has and will continue to address inadequacies within each system such as I/I in the collection system and improvements to the WWTP to avoid compromising the health and safety of the residents.

The WWTP is operating at about 50% of the permitted capacity. The WWTP has not experienced frequent discharge violations. The Town has applied for a discharge permit renewal and is waiting for it to be issued by the CDPHE along with any changes to their current discharge permit. The Town has completed improvements to the disinfection system.

The WWTP was constructed in the early 1980's and as the treatment system ages if improvements are not completed the public's health and sanitation could be adversely impacted**.** Improvements to the WWTP may also be required to meet future permit discharge requirements and protect the health of its residents and environment.

Aging Infrastructure

Although portions of the collection and treatment systems are decades old, the Town has done a good job of rehabilitating failing areas and replacing deteriorating parts with acceptable construction materials. Significant effort has been made to make system upgrades and meet the appropriate standards to the extent feasible. Currently, the driving factors behind any proposed project are the public's health and safety, as well as aging infrastructure and future discharge limits for nutrients.

Reasonable Growth

As discussed previously in this report the Town does not anticipate substantial growth within the WWTP service area. The growth is assumed to be 1% over the 20-year palling period adding approximately 90 individuals. The current WWTP is operating about approximately 50% of the permitted capacity. The WWTP has adequate capacity remaining to accommodate the design growth. The WWTPs will require improvements to the treatment process to continue to meet future discharge limits. The Town will be applying for funding to assist in funding any improvements necessary to the WWTP. Some funding options may require the Town to increase service fees to pay back any loans and will be further studies once the funding options are identified.

CDPS Permit (2027 and beyond)

CDPHE has indicated and are working towards revising discharge permits effective in 2027 by adding nutrients limits to the permits. Specifically, phosphorus and nitrogen and are listed in Regulation #85. Larger WWTPs (i.e., large mechanical plants) in the state currently treat for nutrients. The CDPHE at this time is not providing any information on what the potential limits will be for the smaller facilities most of which are lagoon treatment systems like Collbran's existing system. CDPHE's current recommendation is to review Regulation #85 as a guidance to what they could potentially be, and they are not providing any guidance or technology recommendations at this time.

The state is also recommending that smaller facilities such as Collbran move from an individual permit to the state's general permit. A copy of the state's general permit that would apply to Collbran is included in Appendix D. The state is currently working on the updated version and will be re-numbered to COG589100. The benefit of a general permit is a shorter process time and lower permitting fees. A general permit allows for modifications to the permit while it is administratively continued.

Discharge Specific Variance

Communities that wish to request a change in the discharge limits set by CDPHE can apply for a discharge specific variance (DSV) from the Water Quality Control Commission. The decisions are made in accordance with Regulation No. 31. All DSVs granted are considered temporary changes to the water quality standards and will include an expiration date. Water Quality Control Commission Policy 13-1 provides guidance for development, adoption, and review of DSVs. This policy allows for the development of a specific pollutant and specific point source discharge where compliance with the Water Quality Based Effluent Limitations (WQBEL)is not feasible. The process may take several years and is not guaranteed to result in a variance being given.

The more favorable approach for a given facility that needs more time to meet the WQBEL is to create a compliance schedule. Examples provided in Policy 13-1 VI.A. of situations where a DSV is better suited than a compliance schedule to address a compliance problem include:

1. Treatment or other pollution control options exist that would achieve the WQBEL during the compliance schedule timeframe but are not economically feasible for the discharger to implement.

2. No pollution control options exist that can achieve compliance with a reasonable degree of certainty.

3. There is significant uncertainty about how much time would be necessary for the permittee to achieve compliance (i.e., what duration qualifies as “as soon as possible”?).

4. There is a demonstrated need for an adaptive management approach to compliance, i.e., the effectiveness of initial efforts will help to inform how soon compliance can be achieved and which pollution control strategies would be most effective.

A third option is to change the classified uses or site-specific standards (Policy 13-1 VI.B.). This allows for changes to the standard and uses when they are supported by a use attainability analysis (UAA). UAA is defined as "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" (Regulation 31.5(44)). A UAA are also used to support the development of a site-specific standard.

The Town has not been provided their new discharge permit and have not been provided any information on what, if any, changes will be made to their current permit. Once the discharge permits are renewed the Town will have an opportunity to review the limits and determine the best course of action moving forward. Should the state move forward with effluent limits that are not economically feasible to obtain, the Town can pursue a discharge specific variance based on economic feasibility.

Planning Period Design

The planning period for this report is 20-years. Based on historic data and the forecasted change in population the planning flows and loads for the WWTP are provided in the tables below.

Table 8 – Design Flow

Parameter	Flow
Gallons per capita per day (gpcpd)	125
Assumed Population	459
Average Daily Flow (ADF) (gpd)	57,400
Peak Hourly Flow (gpd) (ADF x 4.0)	229,200
Peak Day Flow (gpd) (ADF x 2.1)	124,700

Table 9 – Assumed WWTP Design Influent Water Quality

Parameter	Design Value
Influent Flow (average) MGD	0.192
Influent BOD (from permit) ppd	272
BOD (ppd)	170
Total Phosphorus (mg/l)	8
TKN (mg/l)	40

Table 10 – Assumed Discharge Limits

Parameter	Design Value
BOD (mg/l) (30-day average)	30
TSS	75
TIN (mg/l)*	15
Total Phosphorus (mg/l)*	1.0

*Reg 85 limits for existing WWTP

Biosolids

Biosolids are the byproduct of wastewater treatment plants. The Standards for the Use or Disposal of Sewage Sludge is referred to in the EPA Part 503 Biosolids Rule. The rule was implemented to protect public health and the environment. Biosolids are divided into "Class A" and "Class B" designations based on treatment methods. The rule provides guidance on properly treating and disposing of biosolids created during the treatment process. Biosolids can be used or disposed of by:

- Applying it to crop or other vegetation;
- Placing in on a surface disposal site for final disposal;
- Firing it in a biosolids incinerator.

CDPHE Regulation 64 provides the Biosolid regulations. A permit for land application can be obtained from CDPHE. This option is not discussed in further detail in this PER. If the Town choose to pursue this option it can be researched and discussed at a later time prior to design.

Nutrients

The CDPHE has indicated that in-stream limits for ammonia, selenium, total nitrogen, and total phosphorus will go into effect in 2027. Currently CDPHE is issuing permits with limits for phosphorus and nitrogen for large wastewater treatment plants. The permits are issued based on Regulation No. 85 and 31. For this preliminary report it is assumed that the limits set in Regulation No. 85 would apply to the Town's WWTP. The assumption is that regardless of the improvements made to the WWTP it would still be considered as an existing facility. If they determined the WWTP is a new facility the limits will be much more stringent and will require additional treatment. The limits set in Regulation No 85 are as follows:

Existing WWTP

Total Phosphorus: 1.0 mg/l

Total Inorganic Nitrogen as N: 15 mg/l

New WWTP

Total Phosphorus: 0.7 mg/l

Total Inorganic Nitrogen as N: 7 mg/l

ALTERNATIVES CONSIDERED

Alternative A: Minimal Maintenance

Description

Alternative A would include minor improvements to the existing WWTP. The current WWTP is not designed to treat for nutrients as there are no limits included in their current permit. The CDPHE has indicated that nutrient limits will be something that will be included in future permits. As to when these limits will be added to the permit is still unknown. The current WWTP is experiencing issues with excessive sludge within the cells that may be affecting their ability to meet discharge limits under varying conditions. This alternative is still a viable option for the Town since they have not had issues with violations under the existing permit, which is still good for several more years. However, improvements to the existing system will need to be completed over time to maintain the current equipment, facilities, and structures. If the CDPHE moves ahead with stricter discharge limits the WWTP will likely not be able to meet the required nutrient limits without significant upgrades to or total replacement of the existing system. The Town will need to decide if the existing system can be upgraded, whether to apply for a DSV, or to complete an expensive whole-scale upgrade to a mechanical type of treatment system.

Proposed Improvements

HEADWORKS

Replacement of the current building structure with a fully enclosed structure.

DISINFECTION

The chlorination and dechlorination systems are in good condition. The building would be replaced with a fully enclosed structure.

PRIMARY CELLS

Conduct a cost benefit analysis of replacement of the existing surface aerators that are no longer functioning with a similar model or change to a solar powered aerator. The aerator selected will need to be a replacement equivalent to what the Town currently operates to avoid the CDPHE considering it an upgrade to the WWTP not a replacement of existing equipment.

SLUDGE REMOVAL

The sludge will be removed from the lagoon cells by the Town and placed on a sludge drying beds and once the sludge has dried it will be hauled of-site and disposed of or on-site application could be investigated, but there is little land available within the WWTP boundary for the application of dried sludge. In-lieu of expensive off-site disposal, on-site land application of dried sludge may be an option and can be further explored and discussed during design.

Environmental Impacts

The improvements to the WWTP would be minor and would have a minimal environmental impact if any. Some improvements such as the removal and replacement of the existing buildings would have a short-term disturbance at the WWTP. The site would be returned to its original condition following the completion of the construction work. Any excess or unusable materials not used for completion of the project would be disposed of properly. Depending on the rate of sludge removal from the cells a sludge drying bed may need to be constructed to avoid leaking water into the ground and may affect groundwater quality.

Land Requirements

This alternative would not require acquisition of any land and can be implemented within the WWTP existing property. It is assumed the sludge drying beds if needed would be installed in the location reserved for a 3rd primary cell.

Operation Concerns

The improvements to the WWTP would not require a change in the current operator's license.

Potential Construction Issues

There should be no construction issues with this alternative as all improvements are considered maintenance and would not result in any disruption of the wastewater treatment process.

Sustainability Considerations

The proposed improvements will allow for the Town to provide adequate treatment for the current discharge limits. With proper maintenance of the wastewater aeration ponds and other equipment, the WWTP should remain in working condition for several years but additional improvements may be necessary as the equipment continues to age. This alternative would not allow for the WWTP to adequately treat for nutrients when limits are added to the discharge permit.

Engineer's Opinion of Costs

The opinion of probable construction cost presented in Table 11 is based on a preliminary design and will be refined during design.

Table 11 - Alternative A Opinion of Probable Project Costs

Description	Opinion of Probable Cost
Sludge Removal*	$ 100,000.00
Aeration Improvements (3 new solar aerators)	$ 66,000.00
New Headworks Building	$ 20,000.00
New Chlorine Building	$ 20,000.00
Construction Cost	**$ 206,400.00**
Engineering and Construction Observation (20%)	$ 41,200.00
Contingencies (20%)	$ 41,200.00
Opinion of Probable Construction Cost	**$ 288,400.00**

*work completed by Town Maintenance Staff and hauled to landfill

Alternative B: Improvements to the Existing WWTP

Description

Alternative B would include improvements to the existing WWTP to provide better treatment and better meet current and future discharge limits. The proposed improvements to the WWTP would include better aeration in the primary cells to help with better treatment and keeping the sludge levels lower in the cells. Other improvements would include the addition of new buildings for the headworks, chlorine, and equipment/lab building. A leakage test completed by SGM and discussed in the Asset Inventory and Capital Improvement Plan (October 2020) found no indications of excessive leaking from the lagoon cells.

Proposed Improvements

HEADWORKS

Replacement of the current building structure and if needed improvements to the bar screens and flow monitoring equipment.

PRIMARY CELLS

Submersible course bubble diffusers would be installed in both Cell No. 1 and 2. A bubble diffuser would create a complete mix system in the first half of the cell and a partial mix in the second half of the cell and would provide better treatment and help keep the sludge levels lower.

SETTLING POND

Minor repairs would be made to the berms to fix areas of erosion.

DISINFECTION

The chlorination and dechlorination systems are in good condition. The building would be replaced and some minor repairs to the chlorine contact chamber will be completed to address any sources of leakage.

LAB/EQUIPMENT BUILDING

The lab/equipment building would be replaced to accommodate the new blowers required for the proposed diffusers.

SITE WORK

Site work would include site grading, electrical and all other items associated with the construction and operation of a new aeration equipment.

SLUDGE REMOVAL

The opinion of probable project cost assumes the sludge would be removed from the cells, dried, hauled off site and disposal of by a contractor. Another option that may be considered prior to design would be to have the Town address the sludge removal and disposal on their own without hiring a contractor prior to construction. In-lieu of expensive off-site disposal, on-site land application of dried sludge may be an option and can be further explored and discussed during design.

Environmental Impacts

The current WWTP would not provide adequate treatment for the assumed future nutrient limits and has excessive sludge in the cells that can lead to inefficient treatment, and might influence the ammonia treatment. There would be minimal, short term disturbance in and around the proposed WWTP due to construction activities. The site would be returned to its original condition following the completion of the construction work. Any excess or unusable materials not used for completion of the project would be disposed of properly. Site grading would be evaluated to assure that there is proper drainage around the WWTP and surrounding area. If a sludge drying bed is constructed to allow drying the removed sludge on-site; then additional land will be used, and over time if the drying bed starts to leak, it could seep into the ground and may affect groundwater quality.

Land Requirements

This alternative would not require acquisition of any land and could be implemented within the existing WWTP property. Additional land may be required if a drying bed is constructed for the sludge removed from the cells. It is assumed the sludge drying beds would be installed in the location reserved for a 3rd primary cell.

Operation Concerns

The improvements to the WWTP would not require a change in the current operator's license. However; if this is not equipment the Operator is familiar with, there may be a bit of a learning curve.

Potential Construction Issues

Construction issues associated with the proposed WWTP could include delay's in acquiring materials, or a contractor unfamiliar with installation of the aeration equipment. Other concerns would be with the phasing of the project. The current WWTP will remain in service throughout construction and will need to be monitored and a detailed phasing approach be developed prior to any work on the site.

Sustainability Considerations

The proposed improvements to the wastewater aeration ponds would allow for the Town to provide adequate treatment for the current discharge limits. With proper maintenance of the wastewater aeration ponds and other equipment, the WWTP should remain in working condition for many years. This option would increase the energy usage slightly compared to their current WWTP. However, the addition of new aeration equipment would provide better mixing and help the WWTP to achieve better quality water. This alternative would not allow for the WWTP to adequately treat for nutrients when limits are determined and added to the discharge permit.

Engineer's Opinion of Costs

The opinion of probable construction cost presented in Table 12 is based on a preliminary design and will be refined during design.

Table 12 - Alternative B Opinion of Probable Project Costs

Description	Opinion of Probable Cost
Mobilization, Bonds, Insurance	$ 100,000.00
Sludge Removal (by contractor)	$ 300,000.00
Aeration Improvements (Cell 1 & 2)	$ 675,000.00
Settling Pond Improvements	$ 75,000.00
Headworks Building and Equipment Improvements	$ 43,800.00
Chlorine Building and Contact Chamber Improvements	$ 45,000.00
Site Work	$ 100,000.00
Construction Cost	**$ 1,338,800.00**
Engineering and Construction Observation (20%)	$ 267,800.00
Contingencies (20%)	$ 267,800.00
Opinion of Probable Construction Cost	**$ 1,847,400.00**

Alternative C: Improvements to the Existing WWTP including Advanced Nutrient Treatment

Description

Alternative C would, like Alternative B, include improvements to the existing WWTP to provide better treatment allowing the Town to meet future discharge limits. This alternative would also include advanced treatment for nutrients. The proposed improvements to the WWTP would include new aeration in the primary cells to help with better treatment and keeping the sludge levels lower in the cells. Other improvements would include the addition of new buildings for the headworks, chlorine, and equipment/lab building. A NitrOx system would be installed to address the nutrient treatment. NitrOx methodology is not a proven treatment method for meeting proposed CDPHE discharge limits. However, there are several full-scale tests being conducted in Colorado and other areas of the country to collect data to prove that this is an effective technology.

Process Flow Diagram

To provide the best treatment and ease of operation, each facility design is unique and should be considered throughout the design process. This PER and the cost estimate for Alternative C are based on the following process flow diagram.

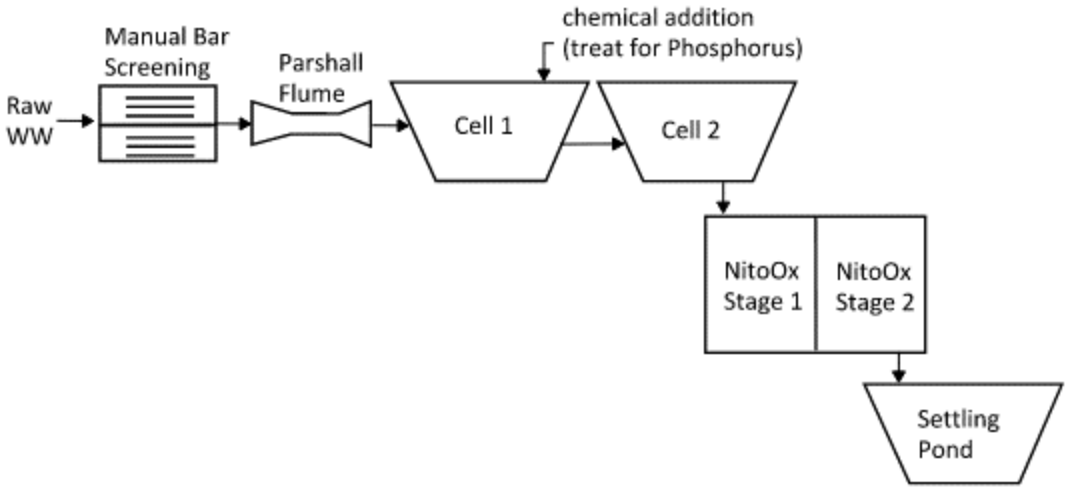


Figure 36. Process Flow Diagram

Proposed Improvements

HEADWORKS

Replacement of the current building structure and, if needed, improvements to the bar screens and flow monitoring equipment.

PRIMARY CELLS

New submersible aeration equipment would be installed in both Cell No. 1 and 2. The new aerators would create a complete mix system in the first half of the cell and a partial mix in the second half of the cell and would provide better treatment and help keep the sludge levels lower.

NITROOX TREATMENT SYSTEM

The nutrient treatment system would be installed between the primary and setting ponds. The treatment equipment would be installed in 2 new concrete tanks. The equipment for the system would be housed in the new equipment building. Treatment basin would be constructed in the preliminary cell #3 area.

SETTLING POND

Minor repairs would be made to the berms to fix areas of erosion and rodent activity.

DISINFECTION

The chlorination and dechlorination systems are in good condition. The building would be replaced and some minor repairs to the chlorine contact chamber would be completed to address any sources of leakage.

LAB/EQUIPMENT BUILDING

The lab/equipment building would be replaced to accommodate the new blowers and nutrient equipment required for the proposed aeration and nutrient treatment.

SITE WORK

Site work would include site grading, electrical and all other items associated with the construction and operation of the new treatment equipment.

SLUDGE REMOVAL

The opinion of probable project cost assumes the sludge is removed from the cell, dried, hauled off site and disposal of by a contractor. Another option that may be considered prior to design would be to have the Town address the sludge removal and disposal on their own without hiring a contractor prior to construction. In-lieu of expensive off-site disposal, on-site land application of dried sludge may be an option and can be further explored and discussed during design.

Environmental Impacts

There would be some short-term disturbance in and around the proposed WWTP due to construction activities. The site would be returned to its original condition following the completion of the construction work. Any excess or unusable materials not used for completion of the project would be disposed of properly. Site grading would be evaluated to assure that there is proper drainage around the WWTP and surrounding area. If a sludge drying bed is constructed to allow the removed sludge on-site, then additional land will be used and over time if the drying bed starts to leak, it could seep into the ground and may affect groundwater quality.

Land Requirements

This alternative would not require acquisition of any land and could be implemented within the existing WWTP property. Additional land may be required if a drying bed is constructed for the sludge removed from the cells. It is assumed the sludge drying beds would be installed in the location reserved for a 3rd primary cell.

Operation Concerns

The improvements to the WWTP would not require a change in the current operator's license. However; if this is not equipment the Operator is familiar with, there may be a bit of a learning curve.

Potential Construction Issues

Construction issues associated with the proposed WWTP could include delay's in acquiring materials, contractor unfamiliar with installation of the equipment. Other concerns would be with the phasing of the project. The current WWTP will remain in service throughout construction and will need to be monitored and a detailed phasing approach be developed prior to any work on the site.

Sustainability Considerations

The proposed improvements to the wastewater treatment system would allow for the Town to provide adequate treatment for the current and potential future discharge limits. With proper maintenance of the wastewater treatment equipment, the WWTP should remain in working condition for many years. This option would increase the energy usage compared to their current WWTP. However, the addition of new aeration equipment would provide better mixing and help the WWTP to achieve better quality water in addition to the equipment to treat for nutrients.

Engineer's Opinion of Costs

The opinion of probable construction cost presented in Table 13 is based on a preliminary design and will be refined during design.

Table 13 - Alternative C Opinion of Probable Project Costs

Description	Opinion of Probable Cost
Mobilization, Bonds, Insurance	$ 100,000.00
Sludge Removal (by Contractor)	$ 300,000.00
Aeration Improvements (Cell 1 & 2)	$ 375,000.00
Settling Pond Improvements	$ 75,000.00
Nitrification System	$ 825,000.00
Headworks Building and Equipment Improvements	$ 43,800.00
Chlorine Building and Contact Chamber Improvements	$ 45,000.00
New Pump/Blower/Electrical Building	$ 82,500.00
Site Work	$ 200,000.00
Construction Cost	**$ 2,046,300.00**
Legal, Admin, Engineering and Construction (20%)	$ 409,300.00
Contingencies (20%)	$ 409,300.00
Opinion of Probable Construction Cost	**$ 2,864,900.00**

Alternative D: Replacement of the Existing WWTP

Description

Alternative D would remove the existing WWTP, which is not designed to treat for nutrients, with a new package WWTP. The proposed WWTP would be a package system that would treat domestic wastewater and can treat for nutrients when future limits are enacted. The WWTP would be sized for the design flows presented previously in the report and also designed for nutrient removal.

Proposed Improvements

SLUDGE REMOVAL

The opinion of probable project cost assumes the sludge is removed from the cell, dried, hauled off site and disposal of by a contractor. Another option that may be considered prior to design would include the Town addressing the sludge removal and disposal on their own without hiring a contractor prior to construction. In-lieu of expensive off-site disposal, on-site land application of dried sludge may be an option and can be further explored and discussed during design.

HEADWORKS

Typically, preliminary treatment is a 2 step process involving a screening process and a grit removal process. Both processes help to keep the treatment equipment is good working order. Since the Town does not anticipate much growth in population both treatment systems were sized based on the permitted flows.

Screening

A WWTP with a design capacity of 0.5 MGD or more must have a mechanical cleaning system (5.2.4). In the screening process the solids are separated and transported up to a collection bin via a conveyor screw. The

screening is washed and dewatered as it moves up the conveyor screw to reduce the volume that must be removed and disposed of off-site. The figure below is an example of a typical conveyor screen.

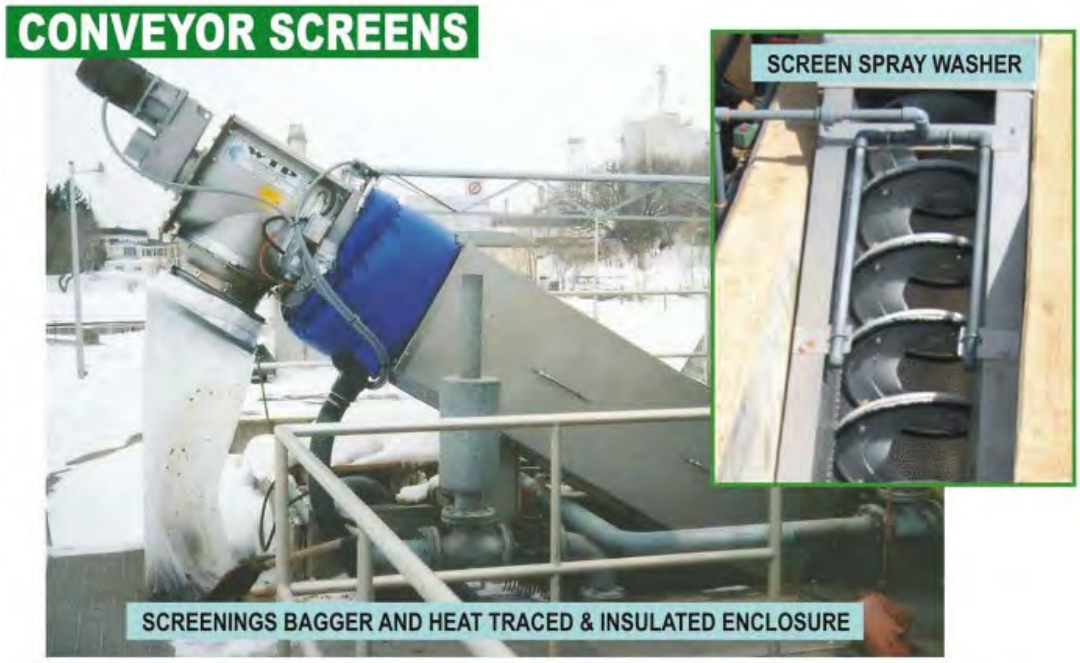


Figure 37. Conveyor Screen (WTP Equipment Corp)

Grit Removal

Grit removal must be provided for all mechanical WWTP (5.4.0). There are several types of grit removal systems. They include aerated grit chambers, tank with mechanical rakes, and vortex style. Given the size of the WWTP, an inline aerated grit collector in a grit chamber was used for this report. An example of the layout for a grit collected is shown below.

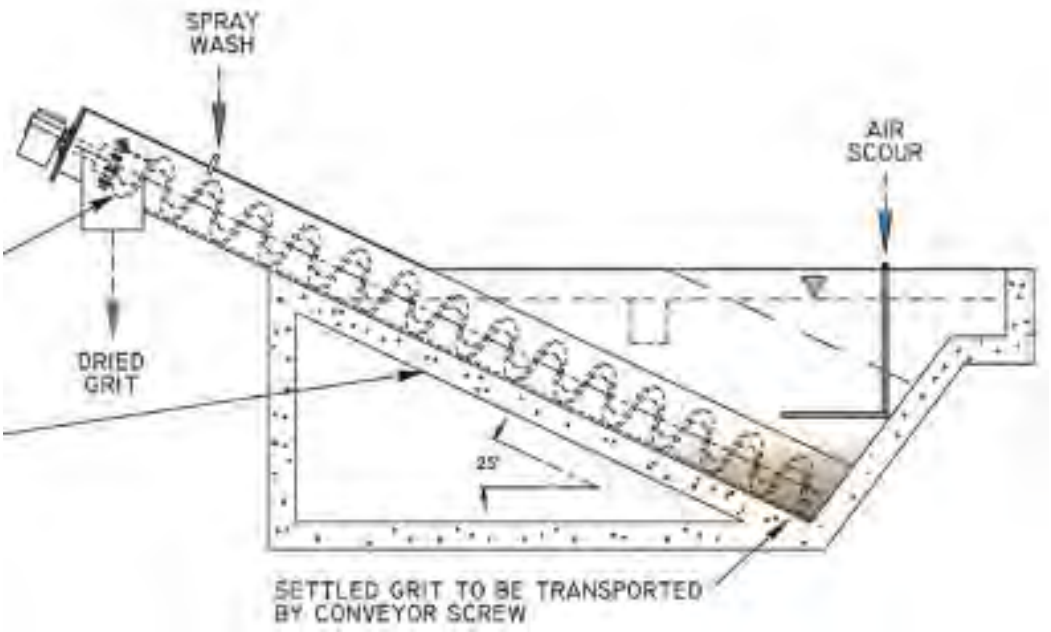


Figure 38. Grit Collector (WTP Equipment Corp)

WASTEWATER TREATMENT PACKAGE SYSTEM

There are several treatment technology options for wastewater treatment. These are a few of the most common treatment systems.

Oxygen Ditch (OD)

This process is considered an extended aeration, activated sludge process. Longer retention time within the ditch allows for a greater amount of organic matter to be broken down by the aerobic bacteria. After treatment in the oxidation ditch, the wastewater is pumped to a secondary settling tank where the sludge and the water can separate. An anaerobic tank may be added prior to the oxidation ditch to enhance biological phosphorus removal. An anaerobic tank may be added upstream of the ditch along with mixed liquor recirculation from the aerobic zone to the tank, to achieve higher levels of denitrification which will enchase nitrogen removal. The process is shown in the figure below.

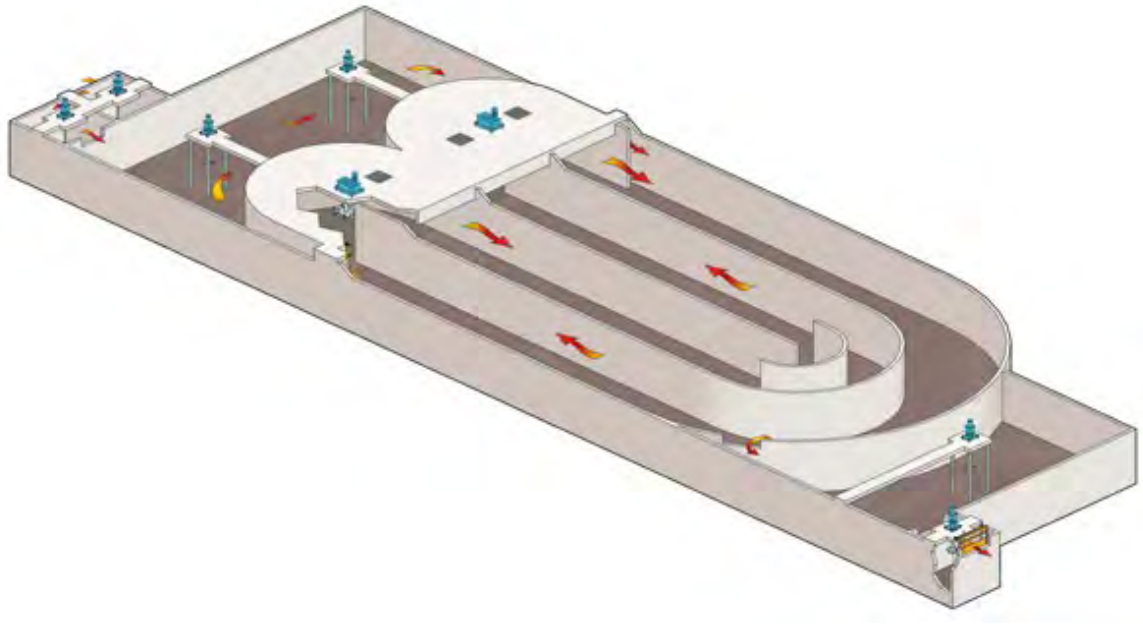


Figure 39. Oxygen Ditch Process (WesTec Inc.)

Advantages of oxidation ditches include

- Efficient in ammonia removal compared to a package plant.
- Produces less sludge compared to other treatment systems.
- Long retention times can minimize shocking the system and effluent surges in flow
- Less maintenance and operation cost compared to other secondary treatment processes.

Disadvantages of oxidation ditches include:

- Higher effluent suspended solids concentrations
- Requires a larger area for installation
- One of the costliest forms of treatment

Membrane Bioreactor (MBR)

MBR is considered an activated sludge process and combines biological treatment with membrane treatment. This process requires a much smaller footprint compared to the other treatment options discussed in the report. The cost for this treatment system and energy consumption for operation of the system is higher than the other options.

Figure 40. MBR (WTP Equipment Corp)

Advantages of MBR include:

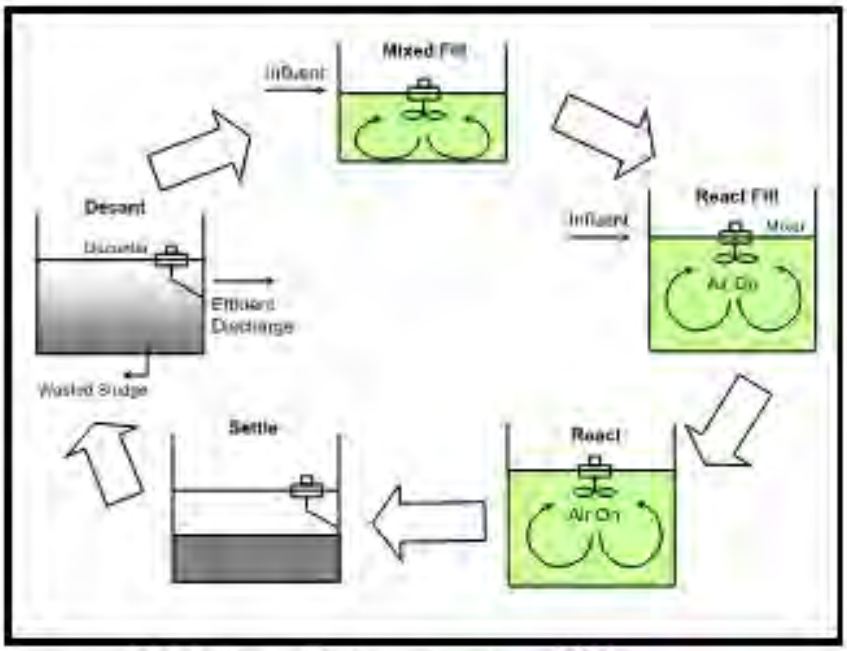
- Longer sludge age resulting in less excess sludge being produced
- Effluent quality is higher than other traditional biochemical processes and reduced pathogen concentrations.
- Convenient operation and management
- Smaller footprint then other treatment options.
- Ease of operation for inexperienced plant operators

Disadvantages of MBR include:

- More expensive when compared to other treatment systems
- High membrane replacement cost
- Membrane fouling can easily occur, requiring additional maintenance
- High energy consumption

Sequence Batch Reactor (SBR)- Selected technology for this report

This is an activated sludge process that operates as a time sequence batch system, as opposed to a traditional continuous flow with aeration and sludge settling that occurs in the same tank. The energy cost for this process is less than is seen with a traditional activated sludge system and an MBR. Sludge must be further treated prior to dewatering. An example of an SBR is shown in the following figure.



Source: CASS Water Engineering, Inc., 2000.

Figure 41. SBR Treatment Process

Figure 42. SBR Tank (Sanitaire)

For this alternative it was assumed that an SBR treatment system would be installed due to its small footprint and low operating cost when compared to other technologies.

Advantages of SBR include:

- Well suited for low or intermittent flow wastewater treatment applications
- Smaller footprint compared to a conventional treatment system
- Treatment can be adapted to include nutrient removal
- Single reaction basin can provide effluent quality water that may take several different units with another treatment system.

Disadvantages of SBR include:

- Higher level of maintenance compared to conventional activated sludge systems
- Controls require a greater degree of sophistication
- Aeration devices may become plugged during some operating cycles
- Equalization tank may be required downstream of SBR if using additional filtration or disinfection

DISINFECTION

Pathogen removal and disinfection shall be included in the WWTP process to meet the permitted discharge limits. The most common forms of disinfection are chlorine and UV. Chlorine disinfection can be feed into the WWTP in gas, liquid, or solid form. The minimum contact time for chlorine is 30 minutes at the design peak hour flow (9.3.3). Dechlorination is required flowing chlorine disinfection to remove the free and combined chlorine residual (9.4.0). The most common dechlorination chemicals used are sulfur dioxide gas or pellet dechlorination systems.

The second common disinfection system is a UV system. The figure below is an example of a UV disinfection system. Some of the advantages to a UV system include shorter contact time required and there are no chemical costs associated with this option. Some disadvantages include preventative maintenance for the UV tubes, high turbidity and TSS can cause the UV system to be ineffective.

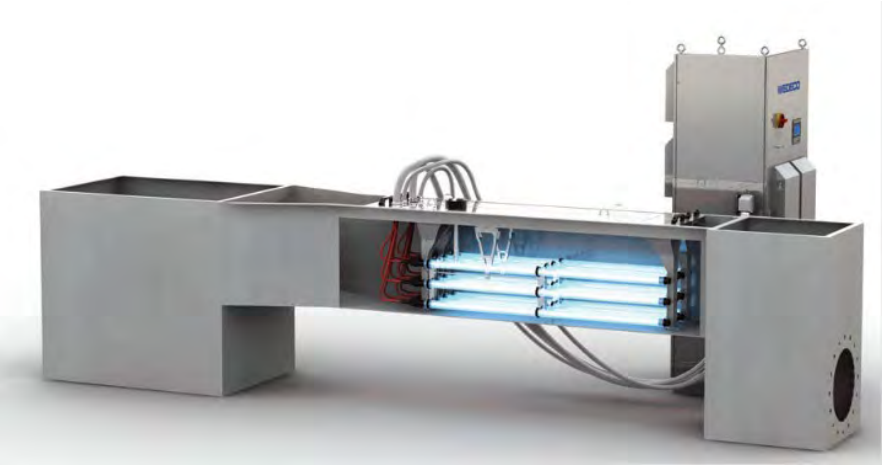


Figure 43. UV Disinfection System (Wedeco)

For this alternative it was assumed that a UV disinfection system would be installed.

SOLIDS PROCESS AND HANDLING

All raw sludge and biological process sludge must be collected and treated prior to disposal. "Wastewater treatment facilities must develop management and operating plans for handling and treatment of raw sludge, biological process sludges, and ultimate use or disposal of biosolids" (Chapter 11). Dewatered undigested and/or digested sludge must be properly stabilized to inactivate pathogens and reduce vector attraction. Solid's processing and disposal is a 4-step process. The steps include:

Step 1 – Sludge Thickening – The sludge is thickened using gravity to reduce the overall volume. Thickening can be completed using a centrifuge thickener or a dissolved air thickening.

Step 2 – Sludge Digestion (stabilization)– Is a biological process where organic solids are decomposed, reducing the total mass of solids, and creating a stable product. Stabilizing the sludge may include processes such as anerobic or aerobic digestion using a digester. Anerobic sludge lagoons may also be used to stabilize the sludge.

Step 3 – Dewatering – Prior to hauling the sludge off-site the sludge is then dewatered to remove as much water as possible. This can be completed with sludge drying beds, belt filter presses, or screw presses.

Step 4 – Disposal – Following sludge dewatering the sludge may be disposed of. Methods of disposing of the sludge include land application as fertilizer or off-site disposal in a landfill.

Sludge Stabilization

Sludge stabilization reduces pathogens, eliminates odor, and reduces the organic matter. There are several options available for solids stabilization including anaerobic digestion (11.3.2), aerobic digestion (11.3.3), and anaerobic sludge lagoons (11.3.4).

For this alternative it was assumed aerobic digestion would be used for sludge stabilization. Aerobic digestion breaks down organic matter using bacteria in the presence of oxygen. The breakdown of the organic matter creates a stabilized, concentrated sludge that can be further processed for use as a fertilizer or further treated to remove additional water and hauled to a landfill.

Dewatering

Dewatering is used to remove excess water from the digested sludge to form a "cake", reducing the volume of sludge that needs to be disposed of. Options for dewatering include both mechanical and natural air-drying processes. Mechanical options include gravity belt press, dewatering centrifuges. Natural air-drying is completed using a sludge drying bed.

For this alternative it was assumed that a filter belt press would be used for dewatering. The mechanical belt press equipment applies pressure to remove the water while retaining the solids. The solids are further dewatered using a polymer. An example of a filter belt press is shown in the figure below.

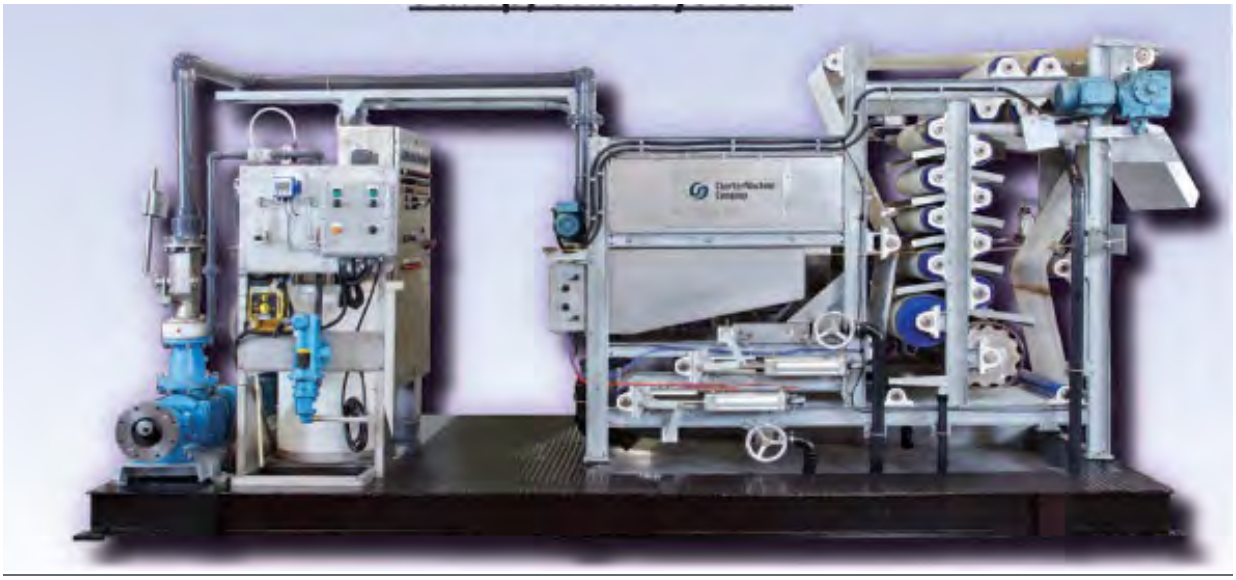


Figure 44. Filter Belt Press (Charter Machine Company)

There are other methods of treating sludge from the mechanical WWTP such as pumping the sludge from the WWTP to a lagoon. The water in the lagoon would be decanted and sent back to the front of the WWTP for treatment. Once the sludge in the lagoon reaches a certain depth in the lagoon, the sludge would be allowed to dry using evaporation and hauled off-site once dried. Another option is the used of sludge drying beds. These options would not require a filter belt press.

Process Flow Diagram

There are many options to be considered for wastewater treatment processing. Each facility design is unique and considerations such as ease of operations, cost and required footprint should be included in the selection of process equipment. This preliminary engineer report and a cost estimate are based on the following process flow diagram.

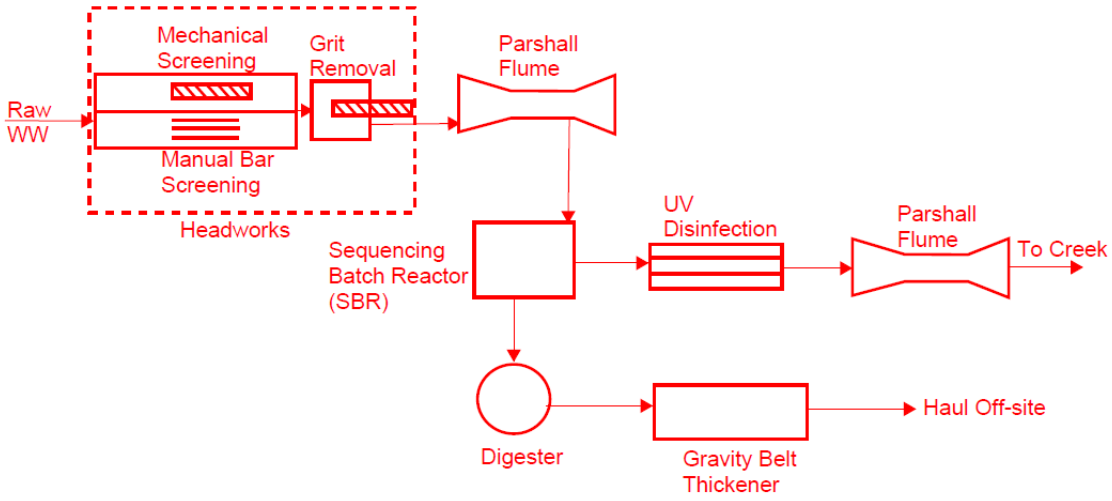


Figure 45. Process Flow Diagram

Construction

Construction would take place while the current WWTP continues to operate. The new facility would include a headworks building, package treatment system and a solids processing building. Following the successful startup of the new WWTP the existing wastewater lagoon cells would be decommissioned. Consideration would be given to retaining a cell to be used as an equalization cell to maintain a steady flow into the WWTP and eliminating spikes that can affect the treatment and effluent quality. The sludge in the cells would need to be dried and hauled of-site and disposed of.

Environmental Impacts

The construction of the new WWTP would reduce or eliminate wastewater from entering and contaminating soils, groundwater, or adjacent surface water. The new WWTP would allow the Town to meet current and future potential discharge limits. There would be a short-term disturbance in and around the proposed WWTP due to construction activities. The site would be returned to its original condition following the completion of the construction work. Any excess or unusable materials not used for completion of the project would be disposed of properly. Site grading would be evaluated to assure that there is proper drainage around the WWTP and surrounding area.

Land Requirements

This alternative would not require acquisition of any land and can be implemented within the existing property. The WWTP would be constructed outside the floodplain and at a location that allows for discharge of the treated effluent to the permitted waterbody.

Operation Concerns

This WWTP option requires a higher-level operator's license compared to the current WWTP and thus would incur a higher operational cost. The treatment system may be different from the systems the operator is familiar with and may require some additional training.

Potential Construction Issues

Construction issues associated with the proposed WWTP could include delays in acquiring materials, or a contractor unfamiliar with installation of a WWTP, as well as groundwater issues that may require dewatering. The current WWTP must remain in service during the construction of the new WWTP. There will be a duration of time in which bypass will occur at the flow is routed from the existing WWTP to the new WWTP.

Sustainability Considerations

The proposed improvements from a wastewater lagoon system to a WWTP would allow for the Town to provide adequate treatment for the current and proposed future potential nutrient limits. With proper maintenance, the WWTP should remain in working condition for many years. This option would increase the energy usage compared to their current WWTP; however, the addition of a new mechanical WWTP would provide the ability for the WWTP to achieve future nutrient limits.

Engineer's Opinion of Costs

The opinion of probable construction cost presented in Table 14 is based on a preliminary design and will be refined during design.

Table 14 - Alternative D Opinion of Probable Project Costs

Description	Opinion of Probable Cost
Mobilization, Bonds, Insurance	$ 200,000.00
Demolition of Existing Buildings	$ 36,000.00
Sludge Removal (by contractor)	$ 300,000.00
Lagoon Decommission	$ 100,000.00
New Mechanical WWTP	$ 1,730,000.00
Headworks Building and Equipment Improvements	$ 495,000.00
New UV/Pump/Electrical Building and Equipment	$ 304,000.00
Solids Handling Facility and Equipment	$ 660,000.00
Site Work	$ 300,000.00
Construction Cost	**$ 4,125,000.00**
Legal, Admin, Engineering and Construction (20%)	$ 825,000.00
Contingencies (20%)	$ 825,000.00
Opinion of Probable Construction Cost	**$ 5,775,000.00**

ALTERNATIVE ANALYSIS

Life Cycle Cost Analysis

A life cycle cost analysis was completed for each category using a 20-year life span incorporating the initial costs and the operations and maintenance costs of the life span. It is assumed there would be very little, or no salvage costs returned. The table below depicts the life cycle cost analysis for wastewater treatment plant.

Table 15 - Wastewater Collection Alternatives Life Cycle Cost Analysis

Alternatives	Initial	Yearly Operations & Maintenance	Life Cycle Operations & Maintenance	Life Cycle Total
A – Minimal Maintenance	$ 288,400	$150,000	$1,799,400	$ 2,189,300
B – Improvements to Existing WWTP	$1,874,400	$157,000	$4,210,400	$6,241,800
C - Improvements to the Existing WWTP including Advanced Nutrient Treatment	$2,864,900	$202,000	$5,870,900	$8,937,800
D – Replacement of Existing WWTP	$5,775,000	$229,000	$9,182,000	$15,186,000

Non-Monetary Factors

A scoring system was used to compare the non-monetary factors associated with each alternative. Each alternative was ranked numerically based on the non-monetary category, with a rank of 1 meaning it was the best alternative in the category and each number following is less desirable or beneficial. If more than one alternative is the same rank, those alternatives would carry the same number, but the numeric count would continue. For instance, if there were five total alternatives, and one was superior with a 1 rank, three were tied with a 2 rank, the remaining alternative would receive a 5 rank. Finally, once all the alternatives were ranked in each factor, the ranks were summed, and the sum was divided by the number of factors to determine an overall score for each alternative. The lower the overall score; the better the alternative.

The following is a summary of the non-monetary factors, which were analyzed based on the sewage collection alternatives, followed by the actual ranking.

Health & Sanitation

Alternatives were ranked based on the treatment items addressed, such as ability to continuously meet discharge limits, potential for failure, and ability to maintain safe working environment.

Reliability

Alternatives were ranked based on the ability to provide high quality effluent continuously without concerns of failure.

Complexity of Construction

Alternatives were ranked based on the complexity of construction. These factors include the need for specialized equipment, safety concerns, space requirements, traffic control and schedule; as well as the complexity of bringing the system on-line and the ability to maintain service of the existing system during construction.

Maintenance

Alternatives were ranked based on the treatment needs. The table below shows the ranking of the non-monetary factors described above.

Table 16 - Alternatives Non-Monetary Factors

Alternatives	Non-Monetary Factor Rankings				
	Health & Sanitation	Reliability	Complexity of Construction	Maintenance	Total Rank
A – Minimal Maintenance	4	4	1	4	**4**
B – Improvements to Existing WWTP	3	3	2	2	**3**
C – Improvements to Existing WWTP including Advanced Nutrient Treatment	2	2	3	3	**2**
D – Replacement of Existing WWTP	1	1	4	4	**1**

* 1=best; 4=worst. Long-term outlook (compliance with future CDPHE discharge limits)

FUNDING SOURCES

There are several funding sources available for both grants and loans. A comprehensive list of funding sources for the state of Colorado are provided in Appendix E. Some of the more commonly used grants and loans are listed below.

Grants

- USDA Rural Development Grant
  - If funds are available a grant may be combined with a loan to keep costs reasonable.
- State Revolving Fund (SRF) design and engineering grant
  - Available for disadvantaged communities; communities with population of 10,000 or less; government entity
  - Up to 80% of grant can be reimbursed before SRF loan application is received; final 20% will be reimbursed upon SRF loan execution.
- Small Communities Water and Wastewater Grant
  - For communities with a population less than 5,000.
  - Grants are available for planning, design, or construction

Loans

- Water Pollution Control Revolving Fund (WPCRF)
  - Steps for securing a low-interest loan
    - Apply for Eligibility
      - Eligibility survey (open June 1- June 30 annually)
      - Intended use plans
    - Apply for loan
      - Prequalification Meeting
      - Project needs assessment/environmental determination
      - Plans and Specifications
      - Loan application
- USDA Rural Development
  - Offer long-term, low-interest loans can have up to a 40-year payback period.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The PER discussed four (4) alternatives for the Town to consider. Alternative A is the minimal maintenance option and is only available until the state includes nutrient limits on the discharge permit.

Alternative B includes upgrades to the current WWTP with the addition of submerged aeration and new buildings to protect the existing and new process equipment. This alternative would allow for the Town to meet current discharge limits but would not address the potential future nutrient limits. The state has indicated that nutrient limits will go into effect in 2027 but does not provide a timeline to permit holder on how they will implement.

Alternative C included upgrades to the current treatment system and added treatments for nutrients. This option would allow the Town to continue to operate their treatment lagoons and add additional treatment to meet the nutrient limits.

Alternative D discussed the replacement of the current WWTP with a mechanical treatment plant. This would provide the Town the ability to meet any discharge limit set by the state including nutrients. Depending on the set

nutrient limits some improvements may be necessary in the future such as the addition of chemicals to help treat for phosphorus.

The Current WWTP permit is administratively continued and does not allow for modifications to the existing WWTP. The Town must wait for a discharge permit renewal to proceed with a request for modifications to the WWTP. The Water Quality Control Commission Basin Heading for the Lower Colorado Basin is scheduled of 2024 with permitting of the basin the following year. At that time the Town will be given their permit limits and renewal of their individual permit.

If the Town wishes to proceed with improvements to the WWTP immediately they can request a change from an individual permit to a general permit. By requesting a change to the general permit, the Town would be given their discharge limits and could then proceed with a request for modifications to the WWTP.

Recommendations

The WWTP is not exceeding current discharge limits. It has been stated by the Town's WW operator that currently there is an excessive volume of sludge in the primary cells. Excessive sludge in the cells can cause issues with treatment and reduce the available capacity in the cells. It is suggested that the sludge be removed to provide better treatment at the WWTP.

Unless the Town has secured the funding for a new WWTP or has a desire to proceed with replacing the existing WWTP prior to the state issuing the new discharge permit they will need to change from the individual permit to a general permit. A new draft permit is necessary to determine the new limits that will be utilized for the design of a new WWTP. Based on the alternatives presented the only viable options for nutrient treatment are Alternatives C and D.

INTERIM RECOMMENDATIONS

In the interim while waiting for the new permit to be issued the Town may either proceed with applying for a general permit and beginning the design of WWTP improvements or proceed with Alternative A. Alternative A is the most economical solution to address some of the necessary improvements to the WWTP until the CDPHE issues the new nutrient limits. Currently there are only proposed limits which are subject to change and CDPHE interpretation. The recommendation is to wait on proceeding with any major upgrades until discharge limits are clearly established by CDPHE. The following improvements are recommended:

- Have the sludge removed.
- The WWTP operates several surface aeration systems, and all are not in working order. The equipment should be fixed to help with mixing and aeration that will assist in better treatment.
- Repair or replace Headworks and chlorine building.
- Make repairs to rodent holes along cells berms.

Appendix A

Environmental Resources

National Flood Hazard Layer FIRMette

FEMA

107°59'28"W 39°14'38"N

Town of Collbran

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Work session 10.01.24

107°58'51"W 39°14'10"N

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

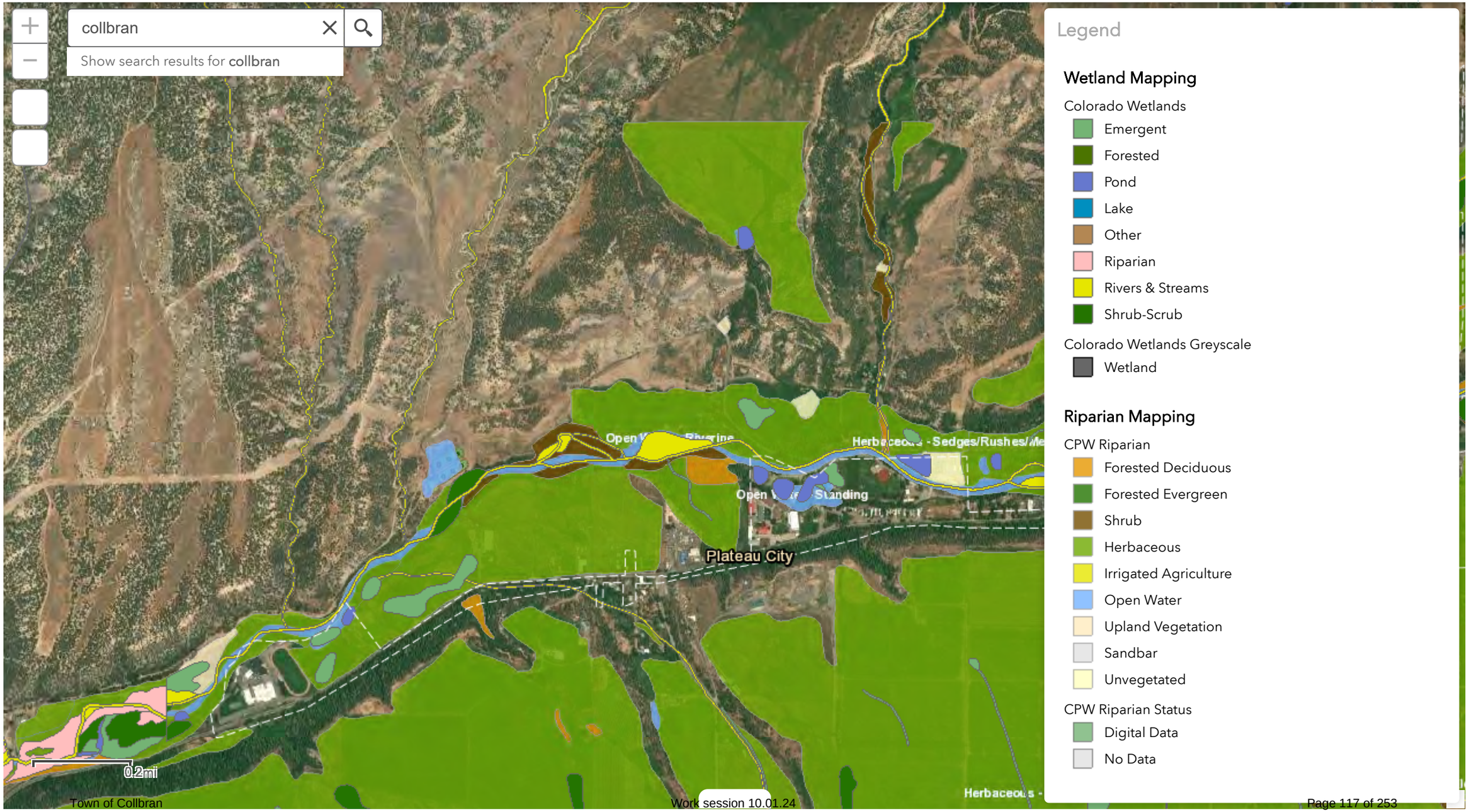
N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/23/2022 at 1:05 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.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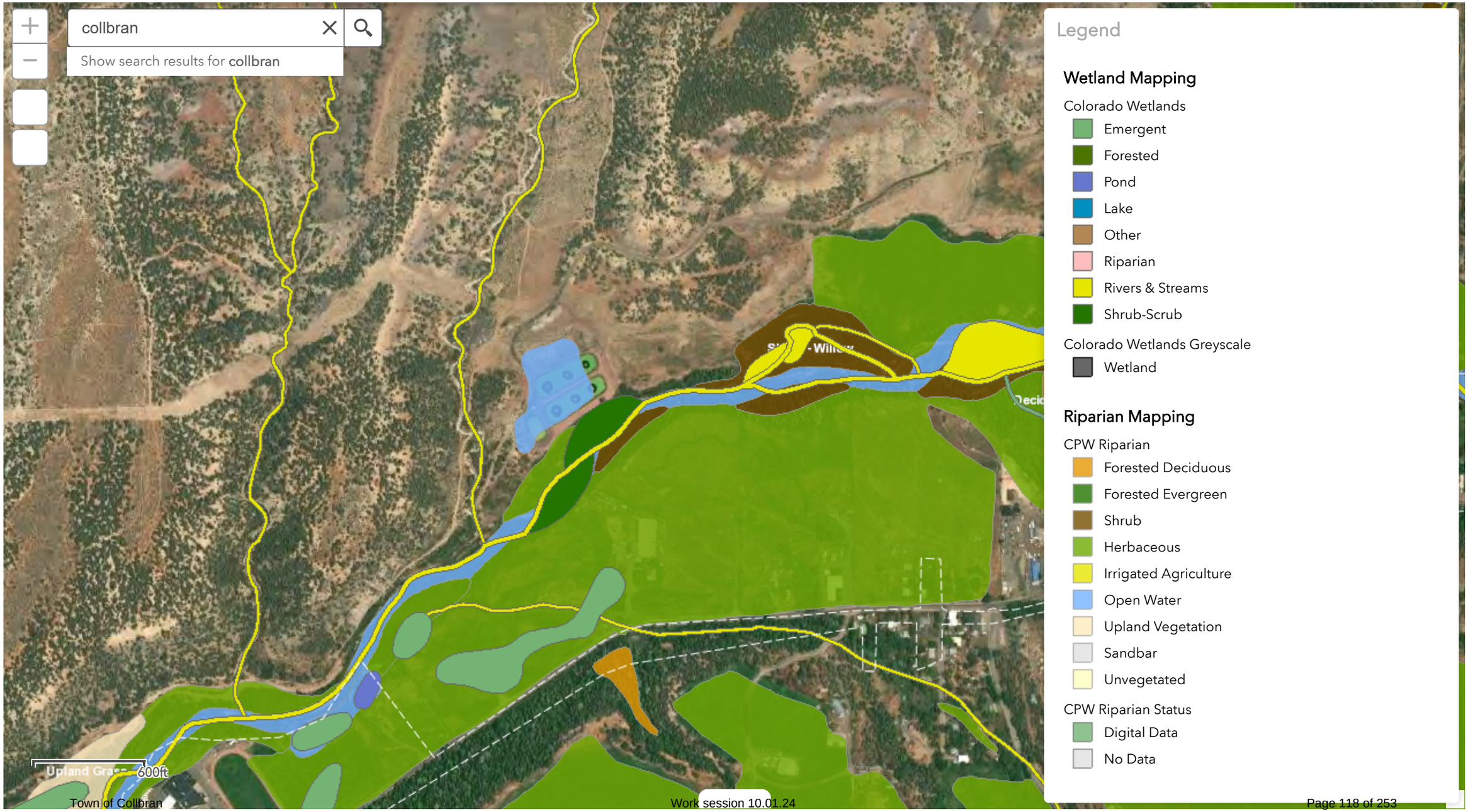
Show search results for collbran
Legend
Wetland Mapping
Colorado Wetlands
Emergent
Forested
Pond
Lake
Other
Riparian
Rivers & Streams
Shrub-Scrub
Colorado Wetlands Greyscale
Wetland
Riparian Mapping
CPW Riparian
Forested Deciduous
Forested Evergreen
Shrub
Herbaceous
Irrigated Agriculture
Open Water
Upland Vegetation
Sandbar
Unvegetated
CPW Riparian Status
Digital Data
No Data
Plateau City
0.2mi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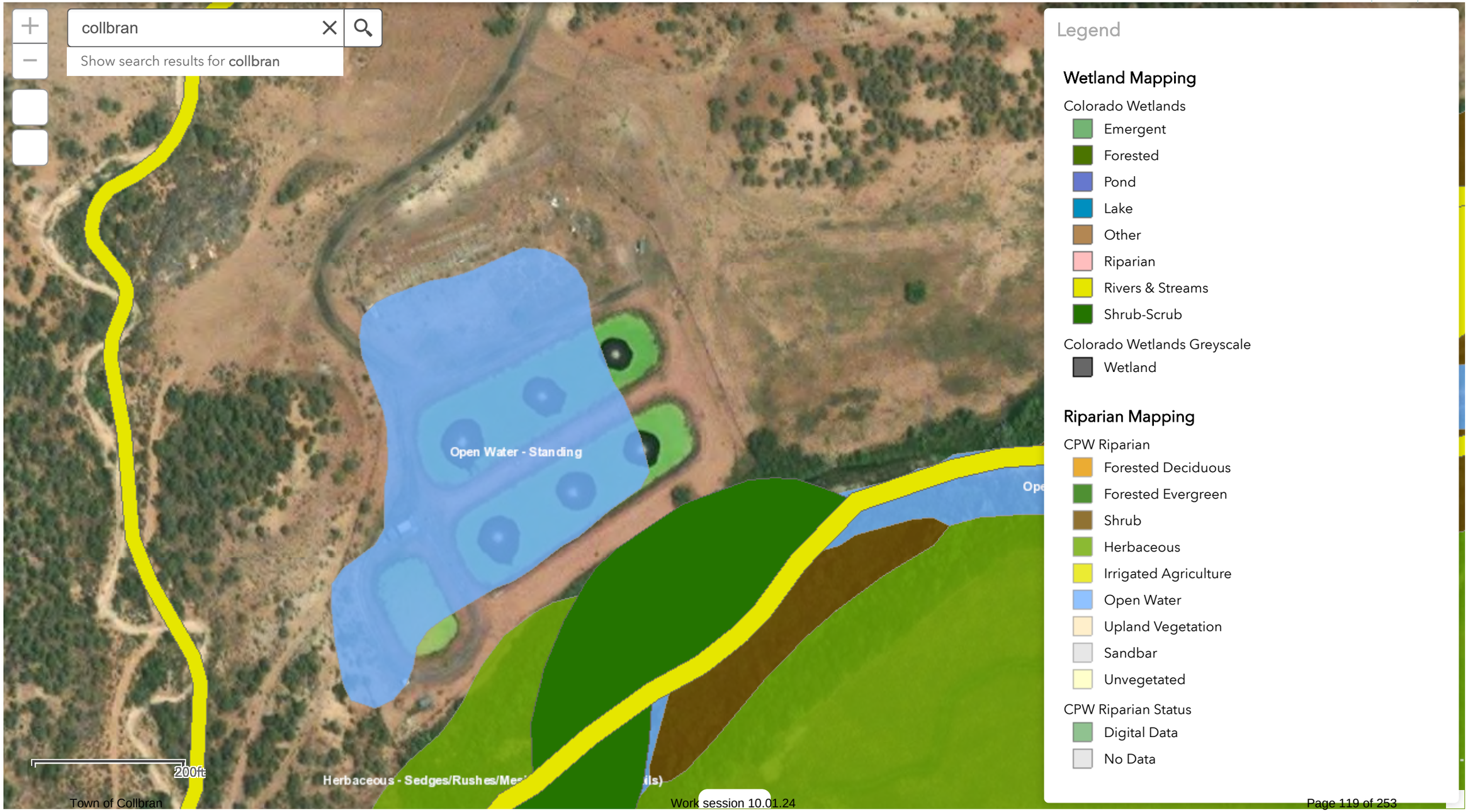
Forested Evergreen
Shrub
Herbaceous
Irrigated Agriculture
Open Water
Upland Vegetation
Sandbar
Unvegetated
CPW Riparian Status
Digital Data
No Data
600ft

Colorado Wetland Inventory



Appendix B

Current Discharge Permit

Colorado Department of Public Health and Environment

AUTHORIZATION TO DISCHARGE UNDER THE COLORADO DISCHARGE PERMIT SYSTEM
PERMIT NUMBER CO0040487

In compliance with the provisions of the Colorado Water Quality Control Act, (25-8-101 et seq., CRS, 1973 as amended), for both discharges to surface and ground waters, and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.; the "Act"), for discharges to surface waters only, the

Town of Collbran

is authorized to discharge from the Valleywide Sewage System wastewater treatment plant located in the NE ¼ S 33, SE ¼ S 28, SW ¼ S 27, T9S, R95W, 6th PM; 1.5 miles west of Collbran, CO at 57421 PE Road, Collbran, CO, 81624; Latitude: 39.239789 N, Longitude: 107.990147 W.

to **Plateau Creek**

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I and II hereof. All discharges authorized herein shall be consistent with the terms and conditions of this permit.

The applicant may demand an adjudicatory hearing within thirty (30) calendar days of the date of issuance of the final permit determination, per the Colorado State Discharge Permit System Regulation 61.7(1). Should the applicant choose to contest any of the effluent limitations, monitoring requirements or other conditions contained herein, the applicant must comply with Section 24-4-104 CRS 1973 and the Colorado State Discharge Permit System Regulations. Failure to contest any such effluent limitation, monitoring requirement, or other condition, constitutes consent to the condition by the applicant.

This permit and the authorization to discharge shall expire at midnight September 30, 2020

Modified, Reissued and Signed this DDth day of MMMM 2016

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Public Notice Version

Janet Kieler, Permits Section Manager
Water Quality Control Division

PERMIT ACTION SUMMARY:
MODIFICATION 1: Minor Amendment - Issued MMMM DD, 2016 Effective MMMM DD, 2016 (Part I.A.3)
ORIGINALLY ISSUED: August 31, 2015, Effective Date: October 1, 2015

TABLE OF CONTENTS

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. Permitted Feature(s)

Beginning no later than the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from, and self monitoring samples taken in accordance with the monitoring requirements shall be obtained from permitted feature(s):

Outfall 001A, following disinfection and prior to mixing with the receiving stream. Latitude: 39.239169 N, Longitude: 107.990069 W.

The location(s) provided above will serve as the point(s) of compliance for this permit and are appropriate as they are located after all treatment and prior to discharge to the receiving water. Any discharge to the waters of the State from a point source other than specifically authorized by this permit is prohibited.

In accordance with the Water Quality Control Commission Regulations for Effluent Limitations, Section 62.4, and the Colorado Discharge Permit System Regulations, Section 61.8(2), 5 C.C.R. 1002-61, the permitted discharge shall not contain effluent parameter concentrations which exceed the following limitations specified below or exceed the specified flow limitation.

2. Limitations, Monitoring Frequencies and Sample Types for Effluent Parameters

In order to obtain an indication of the probable compliance or noncompliance with the effluent limitations specified in Part I.A, the permittee shall monitor all effluent parameters at the frequencies and sample types specified below. Such monitoring will begin immediately and last for the life of the permit unless otherwise noted. The results of such monitoring shall be reported on the Discharge Monitoring Report form (See Part I.D.)

Self-monitoring sampling by the permittee for compliance with the effluent monitoring requirements specified in this permit, shall be performed at the location(s) noted in Part I.A.1 above. If the permittee, using an approved analytical method, monitors any parameter more frequently than required by this permit, then the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form (DMRs) or other forms as required by the Division. Such increased frequency shall also be indicated.

Percentage Removal Requirements (BOD_5 Limitations) - If noted in the limits table(s), the arithmetic mean of the BOD5 concentrations for effluent samples collected during the DMR reporting period shall demonstrate a minimum of eighty-five percent (85%) removal of both BOD5, as measured by dividing the respective difference between the mean influent and effluent concentrations for the DMR monitoring period by the respective mean influent concentration for the DMR monitoring period, and multiplying the quotient by 100.

Oil and Grease Monitoring: For every outfall with oil and grease monitoring, in the event an oil sheen or floating oil is observed, a grab sample shall be collected and analyzed for oil and grease, and reported on the appropriate DMR under parameter 03582. In addition, corrective action shall be taken immediately to mitigate the discharge of oil and grease. A description of the corrective action taken should be included with the DMR.

Total Residual Chlorine: Monitoring for TRC is required only when chlorine is in use.

Flow Recording Device: For this facility, two flow recording devices are provided and are located at the point of inflow to and discharge from the treatment plant.

Permitted Feature/Limit Set 001A

ICIS Code	Effluent Parameter	Effluent Limitations Maximum Concentrations			Monitoring Requirements	
		30-Day Average	7-Day Average	Daily Maximum	Frequency	Sample Type
50050	Effluent Flow (MGD)	0.192		Report	Continuous	Recorder
00400	pH (su)			6.5-9	Weekly	Grab
51040	*E. coli* (#/100 ml)	1,605	3,210		Monthly	Grab
50060	TRC (mg/l), **until June 30, 2018**	Report		0.41	Weekly	Grab
50060	TRC (mg/l), **beginning July 1, 2018**	0.09		0.40	Weekly	Grab
00610	Total Ammonia as N (mg/l), **until June 30, 2018**					
	January	24.8		100	Monthly	Grab
	February	24.8		96	Monthly	Grab
	March	24.8		98	Monthly	Grab
	April	24.8		275	Monthly	Grab
	May	36.8		198	Monthly	Grab
	June	27		61	Monthly	Grab
	July	23		51	Monthly	Grab
	August	20.3		59	Monthly	Grab
	September	20.3		49	Monthly	Grab
	October	20.3		88	Monthly	Grab
	November	24.8		92	Monthly	Grab
	December	24.8		95	Monthly	Grab
00610	Total Ammonia as N (mg/l), **beginning July 1, 2018**					
	January	25		65	Monthly	Grab
	February	25		65	Monthly	Grab
	March	25		65	Monthly	Grab
	April	25		65	Monthly	Grab
	May	37		65	Monthly	Grab
	June	21		64	Monthly	Grab
	July	16		52	Monthly	Grab
	August	17		56	Monthly	Grab
	September	20		51	Monthly	Grab
	October	20		65	Monthly	Grab
	November	25		65	Monthly	Grab
	December	25		65	Monthly	Grab
00310	BOD5, effluent (mg/l)	30	45		Monthly	Grab
81010	BOD5 (% removal)	85 (min)			Monthly	Calculated
00530	TSS, effluent (mg/l)	75	110		Monthly	Grab
84066	Oil and Grease (visual)			Report	Weekly	Visual
03582	Oil and Grease (mg/l)			10	Contingent	Grab
70295	TDS (mg/l), WWTF effluent	Report		Report	Quarterly	Grab

3. Monitoring Frequency and Sample Type Influent Parameters

Regardless of whether or not an effluent discharge occurs and in order to obtain an indication of the current influent loading as compared to the approved capacity specified in Part I.A.3 and Part I.B.2; the permittee shall monitor influent parameters at the following required frequencies, the results to be reported on the Discharge Monitoring Report (See Part I.D):

If the permittee monitors any parameter more frequently than required by the permit, using an approved test procedure or as specified in the permit, the result of this monitoring shall be included in the calculation and reporting of data to the Division.

Self-monitoring samples taken in compliance with the monitoring requirements specified below shall be taken at the following location(s): **300I, at a representative point prior to biological treatment.**

Permitted Feature 300I

ICIS Code	Parameter	Discharge Limitations Maximum Concentrations			Monitoring Frequency	Sample Type
		30-Day Average	7-Day Average	Daily Max.		
50050 G	Flow, mgd	Report		Report	Continuous [1]	Recorder [1]
00180 G	Plant Capacity (% of Capacity - Hydraulic) [1]	Report			Monthly	Calculated [1]
00310 G	BOD_5, mg/l	Report	Report		Monthly	Composite
00310 G	BOD_5, lbs/day	Report	Report		Monthly	Calculated
00180 G	Plant Capacity (% of Capacity - Organic) [1]	Report			Monthly	Calculated [1]
00530G	Total Suspended Solids, mg/l	Report	Report		Monthly	Composite
70295 G	Total Dissolved Solids *	Report		Report	Quarterly	Grab

* TDS measurements only required when the discharge is in the Colorado River Basin. Samples are to be of the raw water supply. If more than one source is being utilized, a composite sample proportioned to flow shall be prepared from individual grab samples.

[1] The % capacity is to be reported against the listed capacities of 0.192 MGD for the hydraulic capacity and 272 lbs. BOD_5 per day for the organic capacities as noted in Site Approval 3603. The percentage should be calculated using the 30-day average values divided by the corresponding capacity, times 100.

4. Salinity Parameters

In order to obtain an indication of the increase in salinity due to the treatment and use of water within this service area, the permittee shall monitor the raw water source and the wastewater effluent at the following required frequencies, the results to be reported on the Discharge Monitoring Report (See Part I, Section D.1.):

Self-monitoring samples taken in compliance with the monitoring requirements specified above shall be taken prior to treatment of the raw drinking water source (with a composite sample proportioned to flow prepared from individual grab samples if more than one source is being utilized), and at the established wastewater treatment facility effluent sampling point identified above in Part I, Section B.2.

TERMS AND CONDITIONS

5. Service Area

All wastewater flows contributed in the service area may be accepted by the Valleywide Sewage System WWTF for treatment at the permittee's wastewater treatment plant provided that such acceptance does not cause or contribute to an exceedance of the throughput or design capacity of the treatment works or the effluent limitations in Part I.A, or constitute a

substantial impact to the functioning of the treatment works, degrade the quality of the receiving waters, or harm human health, or the environment.

In addition, the permittee shall enter into and maintain service agreements with any municipalities that discharge into the wastewater treatment facility. The service agreements shall contain all provisions necessary to protect the financial, physical, and operational integrity of the wastewater treatment works.

6. Design Capacity

Based on Site Approval **3603**, the design capacity of this domestic wastewater treatment works is **0.192 million gallons per day** (MGD) for hydraulic flow (30-day average) and **272 lbs. BOD_5 per day** for organic loading (30-day average).

7. Expansion Requirements

Pursuant to Colorado Law, C.R.S. 25-8-501 (5 d & e), the permittee is required to initiate engineering and financial planning for expansion of the domestic wastewater treatment works whenever throughput reaches eighty (80) percent of the treatment capacity. Such planning may be deemed unnecessary upon a showing that the area served by the domestic wastewater treatment works has a stable or declining population; but this provision shall not be construed as preventing periodic review by the Division should it be felt that growth is occurring or will occur in the area.

The permittee shall commence construction of such domestic wastewater treatment works expansion whenever throughput reaches ninety-five (95) percent of the treatment capacity or, in the case of a municipality, either commence construction or cease issuance of building permits within such municipality until such construction is commenced; except that building permits may continue to be issued for any construction which would not have the effect of increasing the input of wastewater to the sewage treatment works of the municipality involved.

Where unusual circumstances result in throughput exceeding 80% of treatment capacity, the permittee may, in lieu of initiating planning for expansion, submit a report to the Division that demonstrates that it is unlikely that the event will reoccur, or even if it were to reoccur, that 95% of the treatment capacity would not be exceeded.

Where unusual circumstances result in throughput exceeding 95% of the treatment capacity, the permittee may, in lieu of initiating construction of the expansion, submit a report to the Division that demonstrates that the domestic wastewater treatment works was in compliance at all times during the events and that it is extremely unlikely that the event will reoccur.

Where the permittee submits a report pursuant to unusual circumstances, and the Division, upon review of such report, determines in writing to the permittee that the report does not support the required findings, the permittee shall initiate planning and/or construction of the domestic wastewater treatment works as appropriate.

8. Facilities Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control including all portions of the collection system and lift stations owned by the permittee (and related appurtenances) which are installed or used by the permittee as necessary to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes effective performance, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems when installed by the permittee only when necessary to achieve compliance with the conditions of the permit.

Any sludge produced at the wastewater treatment facility shall be disposed of in accordance with State and Federal regulations. The permittee shall take all reasonable steps to minimize or prevent any discharge of sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. As necessary, accelerated or additional monitoring to determine the nature and impact of the noncomplying discharge is required.

9. Compliance Schedule(s)

a. Activities to Meet Total Ammonia and TRC – In order to meet Total Ammonia and TRC final limits, the following schedule for construction (if deemed necessary by the permittee) are included in the permit.

Code	Event	Description	Due Date
CS010	Status/Progress Report	Submit a progress report summarizing the progress in activities to achieve final limits.	January 31, 2017
CS010	Status/Progress Report	Submit a progress report summarizing the progress in activities to achieve final limits.	July 31, 2017
CS016	Complete Required Work or On-Site Construction	Complete appropriate actions which will allow the permittee to meet the final limitations.	July 31, 2018

Regulation 61.8(3)(n)(i) states that a report should 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 above dates and therefore all reports are due on or before the date listed in the table.

10. Pretreatment Program - Industrial Waste Management

a. The Permittee has the responsibility to protect the Domestic Wastewater Treatment Works (DWTW), as defined at section 25.8.103(5) of the Colorado Water Quality Control Act, or the Publicly-Owned Treatment Works (POTW), as defined at 40 CFR section 403.3(q) of the federal pretreatment regulations, from pollutants which would cause pass through or interference, as defined at 40 CFR 403.3(p) and (k), or otherwise be incompatible with operation of the treatment works including interference with the use or disposal of municipal sludge.

b. Pretreatment Standards (40 CFR Section 403.5) developed pursuant to Section 307 of the Federal Clean Water Act (the Act) require that the Permittee shall not allow, under any circumstances, the introduction of the following pollutants to the DWTW from any source of non-domestic discharge:

i. Pollutants which create a fire or explosion hazard in the DWTW, including, but not limited to, wastestreams with a closed cup flashpoint of less than sixty (60) degrees Centigrade (140 degrees Fahrenheit) using the test methods specified in 40 CFR Section 261.21;

ii. Pollutants which will cause corrosive structural damage to the DWTW, but in no case discharges with a pH of lower than 5.0 s.u., unless the treatment facilities are specifically designed to accommodate such discharges;

iii. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the DWTW, or otherwise interfere with the operation of the DWTW;

iv. Any pollutant, including oxygen demanding pollutants (e.g., BOD), released in a discharge at a flow rate and/or pollutant concentration which will cause Interference with any treatment process at the DWTW;

v. Heat in amounts which will inhibit biological activity in the DWTW resulting in Interference, but in no case heat in such quantities that the temperature at the DWTW treatment plant exceeds forty (40) degrees Centigrade (104 degrees Fahrenheit) unless the Approval Authority, upon request of the DWTW, approves alternate temperature limits;

vi. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through;

vii. Pollutants which result in the presence of toxic gases, vapors, or fumes within the DWTW in a quantity that may cause acute worker health and safety problems;

viii. Any trucked or hauled pollutants, except at discharge points designated by the DWTW; and

ix. Any specific pollutant that exceeds a local limitation established by the Permittee in accordance with the requirements of 40 CFR Section 403.5(c) and (d).

x. Any other pollutant which may cause Pass Through or Interference.

c. EPA shall be the Approval Authority and the mailing address for all reporting and notifications to the Approval Authority shall be: USEPA 1595 Wynkoop St. 8ENF-W-NP, Denver, CO 80202-1129. Should the State be delegated authority to implement and enforce the Pretreatment Program in the future, the Permittee shall be notified of the delegation and the state permitting authority shall become the Approval Authority.

d. In addition to the general limitations expressed above, more specific Pretreatment Standards have been and will be promulgated for specific industrial categories under Section 307 of the Act (40 CFR Part 405 et. seq.).

e. The Permittee must notify the state permitting authority and the Approval Authority, of any new introductions by new or existing industrial users or any substantial change in pollutants from any industrial user within sixty (60) calendar days following the introduction or change. Such notice must identify:

i. Any new introduction of pollutants into the DWTW from an industrial user which would be subject to Sections 301, 306, or 307 of the Act if it were directly discharging those pollutants; or

ii. Any substantial change in the volume or character of pollutants being introduced into the DWTW by any industrial user;

iii. For the purposes of this section, adequate notice shall include information on:

(A) The identity of the industrial user;

(B) The nature and concentration of pollutants in the discharge and the average and maximum flow of the discharge to be introduced into the DWTW; and

(C) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from or biosolids or sludge produced at such DWTW.

iv. For the purposes of this section, an industrial user shall include:

(A) Any discharger subject to Categorical Pretreatment Standards under Section 307 of the Act and 40 CFR chapter I and subchapter N;

(B) Any discharger which has a process wastewater flow of 25,000 gallons or more per day;

(C) Any discharger contributing five percent or more of the average dry weather hydraulic or organic capacity of the DWTW treatment plant;

(D) Any discharger who is designated by the Approval Authority as having a reasonable potential for adversely affecting the DWTWs operation or for violating any Pretreatment Standard or requirements;

f. At such time as a specific Pretreatment Standard or requirement becomes applicable to an industrial user of the Permittee, the state permitting authority and/or Approval Authority may, as appropriate:

i. Amend the Permittee's CDPS discharge permit to specify the additional pollutant(s) and corresponding effluent limitation(s) consistent with the applicable national Pretreatment Standards;

ii. Require the Permittee to specify, by ordinance, order, or other enforceable means, the type of pollutant(s) and the maximum amount which may be discharged to the Permittee's DWTW for treatment. Such requirement shall be imposed in a manner consistent with the program development requirements of the General Pretreatment Regulations at 40 CFR Part 403; and/or,

iii. Require the Permittee to monitor its discharge for any pollutant which may likely be discharged from the Permittee's DWTW, should the industrial user fail to properly pretreat its waste.

The state permitting authority and the Approval Authority retains, at all times, the right to take legal action against any source of nondomestic discharge, whether directly or indirectly controlled by the Permittee, for violations of a permit, order or similar enforceable mechanism issued by the Permittee, violations of any Pretreatment Standard or requirement, or for failure to discharge at an acceptable level under national standards issued by EPA under 40 CFR, chapter I, subchapter N. In those cases where a CDPS permit violation has occurred because of the failure of the Permittee to properly develop and enforce Pretreatment Standards and requirements as necessary to protect the DWTW, the state permitting authority and/or Approval Authority shall hold the Permittee and/or industrial user responsible and may take legal action against the Permittee as well as the Industrial user(s) contributing to the permit violation.

B. **DEFINITION OF TERMS**

1. "Acute Toxicity" - The acute toxicity limitation is exceeded if the LC50 is at any effluent concentration less than or equal to the IWC indicated in this permit.

2. “Antidegradation limits” – See “Two (2) - Year Rolling Average”.

3. "Chronic toxicity", which includes lethality and growth or reproduction, occurs when the NOEC and IC25 are at an effluent concentration less than the IWC indicated in this permit.

4. "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 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).

5. "Continuous" measurement, is a measurement obtained from an automatic recording device which continually measures the effluent for the parameter in question, or that provides measurements at specified intervals.

6. "Daily Maximum limitation" for all parameters (except temperature, pH and dissolved oxygen) means the limitation for this parameter shall be applied as an average of all samples collected in one calendar day. For these parameters the DMR shall include the highest of the daily averages. For pH and dissolved oxygen, this means an instantaneous maximum (and/or instantaneous minimum) value. The instantaneous value is defined as the analytical result of any individual sample. For pH and dissolved oxygen, DMRs shall include the maximum (and/or minimum) of all instantaneous values within the calendar month. Any value beyond the noted daily maximum limitation for the indicated parameter shall be considered a violation of this permit. For temperature, see Daily Maximum Temperature.

7. “Daily Maximum Temperature (DM)” is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as the highest two-hour average water temperature recorded during a given 24-hour period. This will be determined using a rolling 2-hour maximum temperature. If data is collected every 15 minutes, a 2 hour maximum can be determined on every data point after the initial 2 hours of collection. Note that the time periods that overlap days (Wednesday night to Thursday morning) do not matter as the reported value on the DMR is the greatest of all the 2-hour averages.

   For example data points collected at:
   08:15, 08:30, 08:45, 09:00, 09:15, 09:30, 09:45, 10:00, would be averaged for a single 2 hour average data point
   08:30, 08:45, 09:00, 09:15, 09:30, 09:45, 10:00, 10:15, would be averaged for a single 2 hour average data point
   08:45, 09:00, 09:15, 09:30, 09:45, 10:00, 10:15, 10:30, would be averaged for a single 2 hour average data point

   This would continue throughout the course of a calendar day. The highest of these 2 hour averages over a month would be reported on the DMR as the daily maximum temperature. At the end/beginning of a month, the collected data should be used for the month that contains the greatest number of minutes in the 2-hour maximum. Data from 11 pm to 12:59 am, would fall in the previous month. Data collected from 11:01 pm to 1:00 am would fall in the new month.

8. "Dissolved (D) metals fraction" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as that portion of a water and suspended sediment sample which passed through a 0.40 or 0.45 UM (micron) membrane filter. Determinations of "dissolved" constituents are made using the filtrate. This may include some very small (colloidal) suspended particles which passed through the membrane filter as well as the amount of substance present in true chemical solution.

9. "Geometric mean" for *E. coli* bacteria concentrations, the thirty (30) day and seven (7) day averages shall be determined as the geometric mean of all samples collected in a thirty (30) day period and the geometric mean of all samples taken in a seven (7) consecutive day period respectively. The geometric mean may be calculated using two different methods. For the methods shown, a, b, c, d, etc. are individual sample results, and n is the total number of samples.

   Method 1:

   Geometric Mean $= (a*b*c*d*...)^{(1/n)}$ "*" - means multiply

   Method 2:

   Geometric Mean = antilog ([log(a)+log(b)+log(c)+log(d)+...]/n)

   Graphical methods, even though they may also employ the use of logarithms, may introduce significant error and may not be used.

   In calculating the geometric mean, for those individual sample results that are reported by the analytical laboratory to be "less than" a numeric value, a value of 1 should be used in the calculations. If all individual analytical results for the month are reported to be less than numeric values, then report "less than" the largest of those numeric values on the monthly DMR. Otherwise, report the calculated value.

   For any individual analytical result of "too numerous to count" (TNTC), that analysis shall be considered to be invalid and another sample shall be promptly collected for analysis. If another sample cannot be collected within the same sampling period for which the invalid sample was collected (during the same month if monthly sampling is required, during the same week if weekly sampling is required, etc.), then the following procedures apply:

   i. A minimum of two samples shall be collected for coliform analysis within the next sampling period.

   ii. If the sampling frequency is monthly or less frequent: For the period with the invalid sample results, leave the spaces on the corresponding DMR for reporting coliform results empty and attach to the DMR a letter noting that a result of TNTC was obtained for that period, and explain why another sample for that period had not been collected.

   If the sampling frequency is more frequent than monthly: Eliminate the result of TNTC from any further calculations, and use all the other results obtained within that month for reporting purposes. Attach a letter noting that a result of TNTC was obtained, and list all individual analytical results and corresponding sampling dates for that month.

10. "Grab" sample, is a single "dip and take" sample so as to be representative of the parameter being monitored.

11. "IC25" or "Inhibition Concentration" is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal biological measurement (e.g. growth or reproduction) calculated from a continuous model (i.e. interpolation method). IC25 is a point estimate of the toxic concentration that would cause a 25-percent reduction in a non-lethal biological measurement.

12. "In-situ" measurement is defined as a single reading, observation or measurement taken in the field at the point of discharge.

13. "Instantaneous" measurement is a single reading, observation, or measurement performed on site using existing monitoring facilities.

14. "LC50" or "Lethal Concentration" is the toxic or effluent concentration that would cause death in 50 percent of the test organisms over a specified period of time.

15. "Maximum Weekly Average Temperature (MWAT)" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as an implementation statistic that is calculated from field monitoring data. The MWAT is calculated as the largest mathematical mean of multiple, equally spaced, daily temperatures over a seven-day consecutive period, with a minimum of three data points spaced equally through the day. For lakes and reservoirs, the MWAT is assumed to be equivalent to the maximum WAT from at least three profiles distributed throughout the growing season (generally July-September).

The MWAT is calculated by averaging all temperature data points collected during a calendar day, and then averaging the daily average temperatures for 7 consecutive days. This 7 day averaging period is a rolling average, i.e. on the 8th day, the MWAT will be the averages of the daily averages of days 2-8. The value to be reported on the DMR is the highest of all the rolling 7-day averages throughout the month. For those days that are at the end/beginning of the month, the data shall be reported for the month that contains 4 of the 7 days.

Day 1: Average of all temperature data collected during the calendar day.
Day 2: Average of all temperature data collected during the calendar day.
Day 3: Average of all temperature data collected during the calendar day.
Day 4: Average of all temperature data collected during the calendar day.
Day 5: Average of all temperature data collected during the calendar day.
Day 6: Average of all temperature data collected during the calendar day.
Day 7: Average of all temperature data collected during the calendar day.
1st MWAT Calculation as average of previous 7 days
Day 8: Average of all temperature data collected during the calendar day.
2nd MWAT Calculation as average of previous 7 days
Day 9: Average of all temperature data collected during the calendar day.
3rd MWAT Calculation as average of previous 7 days

16. "NOEC" or "No-Observed-Effect-Concentration" is the highest concentration of toxicant to which organisms are exposed in a full life cycle or partial life cycle (short term) test, that causes no observable adverse effects on the test organisms (i.e. the highest concentration of toxicant in which the values for the observed responses are not statistically different from the controls). This value is used, along with other factors, to determine toxicity limits in permits.

17. "Potentially dissolved (PD) metals fraction" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as that portion of a constituent measured from the filtrate of a water and suspended sediment sample that was first treated with nitric acid to a pH of 2 or less and let stand for 8 to 96 hours prior to sample filtration using a 0.40 or 0.45-UM (micron) membrane filter. Note the "potentially dissolved" method cannot be used where nitric acid will interfere with the analytical procedure used for the constituent measured.

18. "Practical Quantitation Limit (PQL)" means the minimum concentration of an analyte (substance) that can be measured with a high degree of confidence that the analyte is present at or above that concentration. The use of PQL in this document may refer to those PQLs shown in Part I.D of this permit or the PQLs of an individual laboratory.

19. "Quarterly measurement frequency" means samples may be collected at any time during the calendar quarter if a continual discharge occurs. If the discharge is intermittent, then samples shall be collected during the period that discharge occurs.

20. "Recorder" requires the continuous operation of a chart and/or totalizer (or drinking water rotor meters or pump hour meters where previously approved.)

21. "Seven (7) day average" means, with the exception of fecal coliform or *E. coli* bacteria (see geometric mean), the arithmetic mean of all samples collected in a seven (7) consecutive day period. Such seven (7) day averages shall be calculated for all calendar weeks, which are defined as beginning on Sunday and ending on Saturday. If the calendar week overlaps two months (i.e. the Sunday is in one month and the Saturday in the following month), the seven (7) day average calculated for that calendar week shall be associated with the month that contains the Saturday. Samples may not be used for more than one (1) reporting period. **(See the "Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.D.5 for guidance on calculating averages and reporting analytical results that are less than the PQL).**

22. "Thirty (30) day average" means, except for fecal coliform or *E. coli* bacteria (see geometric mean), the arithmetic mean of all samples collected during a thirty (30) consecutive-day period, which represents a calendar month. The permittee shall report the appropriate mean of all self-monitoring sample data collected during the calendar month on the Discharge Monitoring Reports. Samples shall not be used for more than one (1) reporting period. **(See the "Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.D.5 for guidance on calculating averages and reporting analytical results that are less than the PQL).**

23. Toxicity Identification Evaluation (TIE) is a set of site-specific procedures used to identify the specific chemical(s) causing effluent toxicity.

24. "Total Inorganic Nitrogen (T.I.N.)" is an aggregate parameter determined based on ammonia, nitrate and nitrite concentrations. To determine T.I.N. concentrations, the facility must monitor for total ammonia and total nitrate plus nitrite (or nitrate and nitrite individually) on the same days. The calculated T.I.N. concentrations in mg/L shall then be determined as the sum of the analytical results of same-day sampling for total ammonia (as N) in mg/L, and total nitrate plus nitrite (as N) in mg/L (or nitrate as N and nitrite as N individually). From these calculated T.I.N. concentrations, the daily maximum and thirty (30) day average concentrations for T.I.N. shall be determined in the same manner as set out in the definitions for the daily maximum and thirty (30) day average. **(See the "Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.D.5 for guidance on calculating averages and reporting analytical results that are less than the PQL).**

25. "Total Metals" means the concentration of metals determined on an unfiltered sample following vigorous digestion (Section 4.1.3), or the sum of the concentrations of metals in both the dissolved and suspended fractions, as described in Manual of Methods for Chemical Analysis of Water and Wastes, U.S. Environmental Protection Agency, March 1979, or its equivalent.

26. "Total Recoverable Metals" means that portion of a water and suspended sediment sample measured by the total recoverable analytical procedure described in Methods for Chemical Analysis of Water and Wastes, U.S. Environmental Protection Agency, March 1979 or its equivalent.

27. Toxicity Reduction Evaluation (TRE) is a site-specific study conducted in a step-wise process to identify the causative agents of effluent toxicity, isolate the source of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity after the control measures are put in place.

28. "Twenty four (24) hour composite" sample is a combination of at least eight (8) sample aliquots of at least 100 milliliters, collected at equally spaced intervals during the operating hours of a facility over a twenty-four (24) hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the wastewater or effluent flow at the time of sampling or the total wastewater or effluent flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.

29. "Twice Monthly" monitoring frequency means that two samples shall be collected each calendar month on separate weeks with at least one full week between the two sample dates. Also, there shall be at least one full week between the second sample of a month and the first sample of the following month.

30. "Two (2) -Year Rolling Average" (Antidegradation limits)- the average of all monthly average data collected in a two year period. Collection of the data required to calculate a two-year rolling average shall start immediately upon the effective date of the permit, but the data is not reported on a DMR until two years after the effective date of the permit. To calculate a two-year rolling average, add the current monthly average to the previous 23 monthly averages and divide the total by 24. This methodology continues on a rolling basis for the permit term (ie., in the first reporting period use data from month 1 to month 24, in the second reporting period use data from month 2 to month 25, then month 3 to month 26, etc).

    Example: Two year rolling average = $(MA_C + MA_1 + MA_2 + ... + MA_{23}) \div$ **24**

    MA_C = Current monthly average
    MA_1 = First prior month's monthly average
    MA_2 = Second prior month's monthly average
    MA_{23} = Twenty third prior month's monthly average

    Note, if there is not a discharge from the facility in a month during a two year period **do not use zero (0) to represent the data for that month in the calculation**, but do consider that month as part of the two year time span. The denominator in the two-year rolling average calculation will change to represent the actual number of months there was a discharge.

    Example: Two year rolling average = (30 +45 +...+25) ÷ **22**

    Current monthly average= 30 mg/l
    First prior month's monthly average= no discharge
    Second prior month's monthly average= no discharge
    Third prior month's monthly average=45 mg/l
    Twenty third prior month's monthly average= 25 mg/l

    For ammonia, two-year rolling averages may be set up for individual months, or may be grouped together for several months. When individual months have a specific limit, calculate the two-year rolling average as follows:

Example: Permit is effective Jan 2010 and there is a two-year rolling average limit specific to the month of January.

January 2010 DMR – Nothing to Report

January 2011 DMR – Two-year rolling average = $(MA_C + MA_1) \div \mathbf{2}$

MA_C = January 2011 monthly average

MA_1 = January 2010 monthly average

January 2012 DMR – Two-year rolling average = $(MA_C + MA_1) \div \mathbf{2}$

MA_C = January 2012 monthly average

MA_1 = January 2011 monthly average

Where several months are grouped together and have the same limit, calculate the two-year rolling average as follows:

Example: Permit is effective January 2010 and there is a two-year rolling average limit specific to the months of January, February, and June.

January, February, June 2010 DMR- Nothing to Report

1st Reportable DMR – June 2011 DMR:

Two year rolling average = $(MA_C + MA_1 + MA_2 + MA_3 + MA_4 + MA_5) \div \mathbf{6}$

MA_C = June 2011 monthly average

MA_1 = February 2011 monthly average

MA_2 = January 2011 monthly average

MA_3= June 2010 monthly average

MA_4 = February 2010 monthly average

MA_5 = January 2010 monthly average

2nd Reportable DMR – January 2012 DMR:

Two year rolling average = $(MA_C + MA_1 + MA_2 + MA_3 + MA_4 + MA_5) \div \mathbf{6}$

MA_C = January 2012 monthly average

MA_1 = June 2011 monthly average

MA_2 = February 2011 monthly average

MA_3= January 2011 monthly average

MA_4 = June 2010 monthly average

MA_5 = February 2010 monthly average .

(See the "Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.D.5 for guidance on calculating averages and reporting analytical results that are less than the PQL).

31. "Visual" observation is observing the discharge to check for the presence of a visible sheen or floating oil.

32. "Water Quality Control Division" or "Division" means the state Water Quality Control Division as established in 25-8-101 et al.)

Additional relevant definitions are found in the Colorado Water Quality Control Act, CRS §§ 25-8-101 et seq., the Colorado Discharge Permit System Regulations, Regulation 61 (5 CCR 1002-61) and other applicable regulations.

D. GENERAL MONITORING, SAMPLING AND REPORTING REQUIREMENTS

1. Routine Reporting of Data

Reporting of the data gathered in compliance with Part I.A or Part I.B shall be on a **monthly** basis. Reporting of all data gathered shall comply with the requirements of Part I.D. (General Requirements). Monitoring results shall be summarized for each calendar month and reported on Division approved discharge monitoring report (DMR) forms (EPA form 3320-1).

The permittee must submit these forms either by mail, or by using the Division's Net-DMR service (when available). If mailed, one form shall be mailed to the Division, as indicated below, so that the DMR is received no later than the 28th day of the following month (for example, the DMR for the first calendar quarter must be received by the Division by April 28th). If no discharge occurs during the reporting period, "No Discharge" shall be reported.

The original signed copy of each discharge monitoring report (DMR) shall be submitted to the Division at the following address:

Colorado Department of Public Health and Environment
Water Quality Control Division
WQCD-P-B2
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

The Discharge Monitoring Report forms shall be filled out accurately and completely in accordance with requirements of this permit and the instructions on the forms. They shall be signed by an authorized person as identified in Part I.D.8.

2. Annual Biosolids Report

The permittee shall provide the results of all biosolids monitoring and information on management practices, land application sites, site restrictions and certifications. Such information shall be provided no later than **February 19th** of each year. Reports shall be submitted addressing all such activities that occurred in the previous calendar year. If no biosolids were applied to the land during the reporting period, "no biosolids applied" shall be reported. Until further notice, biosolids monitoring results shall be reported on forms, or copies of forms, provided by the Division. Annual Biosolids Reports required herein, shall be signed and certified in accordance with the Signatory Requirements, Part I.D.1, and submitted as follows:

The original copy of each form shall be submitted to the following address:

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT,
WATER QUALITY CONTROL DIVISION
WQCD-PERMITS-B2
4300 CHERRY CREEK DRIVE SOUTH
DENVER, COLORADO 80246-1530

A copy of each form shall be submitted to the following address:

EPA BIOSOLIDS CENTER
EPA REGION 7
WWPD/WENF
11201 RENNER BOULEVARD
LENEXA, KANSAS 66219

3. Representative Sampling

Samples and measurements taken for the respective identified monitoring points as required herein shall be representative of the volume and nature of: 1) all influent wastes received at the facility, including septage, biosolids, etc.; 2) the monitored effluent discharged from the facility; and 3) biosolids produced at the facility. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the influent, effluent, or biosolids wastestream joins or is diluted by any other wastestream, body of water, or substance. Monitoring points shall not be changed without notification to and prior approval by the Division.

4. Influent and Effluent Sampling Points

Influent and effluent sampling points shall be so designed or modified so that: 1) a sample of the influent can be obtained after preliminary treatment and prior to primary or biological treatment and 2) a sample of the effluent can be obtained at a point after the final treatment process and prior to discharge to state waters. The permittee shall provide access to the Division to sample at these points.

5. Analytical and Sampling Methods for Monitoring and Reporting

The permittee shall install, calibrate, use and maintain monitoring methods and equipment, including biological and indicated pollutant monitoring methods. All sampling shall be performed by the permittee according to specified methods in 40 C.F.R. Part 136; methods approved by EPA pursuant to 40 C.F.R. Part 136; or methods approved by the Division, in the absence of

a method specified in or approved pursuant to 40 C.F.R. Part 136.

Numeric Limits

If the permit contains a numeric effluent limit for a parameter, the analytical method and PQL selected for all monitoring conducted in accordance with this permit for that parameter shall be the one that can measure at or below the numeric effluent limit. If all specified analytical methods and corresponding PQLs are greater than the numeric effluent limit, then the analytical method with the lowest PQL shall be used.

When the analytical method which complies with the above requirements has a PQL greater than the permit limit, and the permittee's analytical result is less than the PQL (the PQL achieved by the lab), the permittee shall report "BDL" on the DMR. Such reports will not be considered as violations of the permit limit, as long as the PQL obtained is lower or equal to the PQL in the table below.

When the analytical method which complies with the above requirements has a PQL that is equal to or less than the permit limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR. For parameters that have a report only limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR.

Report Only Limits

If the permit contains a report only requirement for a parameter, the analytical method and PQL chosen shall be one that can measure at or below the potential numeric effluent limit(s) (maximum allowable pollutant concentration as shown in the WQA or fact sheet). If all analytical methods and corresponding PQLs are greater than the potential numeric effluent limit(s), then the analytical method with the lowest PQL shall be used.

When the analytical method which complies with the above requirements has a PQL that is equal to or less than the potential numeric effluent limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR. For parameters that have a report only limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR.

Interim Report Only Followed By a Numeric Limit

If the permit contains an interim effluent limitation (a limit is report until such time as a numeric effluent limit becomes effective) for a parameter, the analytical method and PQL chosen for all monitoring conducted in accordance with this permit for the parameter shall be one that can measure to the final numeric effluent limit. If all analytical methods and corresponding PQLs are greater than the final numeric effluent limit (s), then the analytical method with the lowest PQL shall be used.

While the report only limit is effective, the reporting requirements shall follow those under the Report Only Limits section. Once the numeric limit is effective, the reporting requirements shall follow the numeric limits reporting requirements.

T.I.N.

For parameters such as TIN, the analytical methods chosen shall be those that can measure to the potential or final numeric effluent limit, based on the sum of the PQLs for nitrate, nitrite and ammonia.

Calculating Averages

In the calculation of average concentrations (i.e. daily average, 7- day average, 30-day average, 2-year rolling average) any individual analytical result that is less than the PQL shall be considered to be zero for the calculation purposes. When reporting:

If all individual analytical results are less than the PQL, the permittee shall report either "BDL" or "<X" (where X = the actual PQL achieved by the laboratory), following the guidance above.

If one or more individual results is greater than the PQL, an average shall be calculated and reported. Note that it does not matter if the final calculated average is greater or less than the PQL, **it must be reported as a value**.

Note that when calculating T.I.N. for a single sampling event, any value less than the PQL (for total ammonia, total nitrite, or total nitrate) shall be treated as zero. The T.I.N. concentration for a single sampling event shall then be determined as the sum of the analytical results (zeros if applicable) of same day sampling for total ammonia and total nitrite and total nitrate. From these calculated T.I.N. concentrations, the daily maximum and thirty day average concentrations shall be calculated and must be reported as a value.

Note note that *E.coli* should be calculated and reported as defined under Geometric Mean in Part I.C.9, and that the appropriate value for less than the PQL should be 1.

PQLs

The PQLs for specific parameters, as determined by the State Laboratory (November 2008) are provided below for reference. If the analytical method cannot achieve a PQL that is less than or equal to the permit limit, then the method, or a more precise method, must achieve a PQL that is less than or equal to the PQL in the table below. A listing of the PQLs for further organic parameters that must meet the above requirement can be found in the Division's Practical Quantitation Limitation Guidance Document, July 2008. This document is available on the Division's website at www.coloradowaterpermits.com.

These limits apply to the total recoverable or the potentially dissolved fraction of metals.

For hexavalent chromium, samples must be unacidified so dissolved concentrations will be measured rather than potentially dissolved concentrations.

Effluent Parameter	Practical Quantitation Limits	Effluent Parameter	Practical Quantitation Limits
Aluminum	50 µg/l		
Arsenic	1 µg/l	N-Ammonia	1 mg/l
Barium	5 µg/l	N-Ammonia (low-level)	50 µg/l
Beryllium	1 µg/l	N-Nitrate/Nitrite	0.5 mg/l
BOD / CBOD	1 mg/l	N-Nitrate	0.5 mg/l
Boron	50 µg/l	N-Nitrite	10 µg/l
Cadmium	1 µg/l	Total Nitrogen	0.5 mg/l
Calcium	20 µg/l	Total Phosphorus	10 µg/l
Chloride	2 mg/l		
Chlorine	0.1 mg/l	Radium 226	1 pCi/l
Total Residual Chlorine		Radium 228	1 pCi/l
DPD colorimetric	0.10 mg/l	Selenium	1 µg/l
Amperometric titration	0.05 mg/l	Silver	0.5 µg/l
Chromium	20 µg/l	Sodium	0.2 mg/l
Chromium, Hexavalent	20 µg/l	Sulfate	5 mg/l
Copper	5 µg/l	Sulfide	0.2 mg/l
Cyanide (Direct / Distilled)	10 µg/l	Total Dissolved Solids	10 mg/l
Cyanide, WAD+A47	10 µg/l	Total Suspended Solids	10 mg/l
Fluoride	0.1 mg/l	Thallium	1 µg/l
Iron	10 µg/l	Uranium	1 µg/l
Lead	1 µg/l	Zinc	10 µg/l
Magnesium	20 µg/l		
Manganese	2 µg/l	Phenols	15 µg/l
Mercury	0.1 µg/l	Nonylphenol D7065	10 µg/l
Mercury (low-level)	0.003 µg/l		
Nickel	50 µg/l		

6. Records

a. The permittee shall establish and maintain records. Those records shall include, but not be limited to, the following:

i. The date, type, exact place, and time of sampling or measurements;
ii. The individual(s) who performed the sampling or measurements;
iii. The date(s) the analyses were performed;
iv. The individual(s) who performed the analyses;
v. The analytical techniques or methods used; and
vi. The results of such analyses.
vii. Any other observations which may result in an impact on the quality or quantity of the discharge as indicated in 40 CFR 122.44 (i)(1)(iii).

b. The permittee shall retain for a minimum of three (3) years records of all monitoring information, including all original strip chart recordings for continuous monitoring instrumentation, all calibration and maintenance records, copies of all reports required by this permit and records of all data used to complete the application for this permit. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or when requested by the Division or Regional Administrator.

7. Flow Measuring Devices

Unless exempted in Part I.A of this permit, flow metering at the headworks shall be provided to give representative values of throughput and treatment of the wastewater system. The metering device shall be equipped with a local flow indication

instrument and a flow indication-recording-totalization device suitable for providing permanent flow records, which should be in the plant control building.

For mechanical facilities, where influent flow metering is not practical and the same results may be obtained from metering at the effluent end of the treatment facility, this type of flow metering arrangement will be considered, and if approved, noted in Part I.A of this permit. For lagoons, an instantaneous or continuous effluent flow measuring device shall be required in addition to the above described influent flow measuring device.

At the request of the Division, the permittee must be able to show proof of the accuracy of any flow-measuring device used in obtaining data submitted in the monitoring report. The flow-measuring device must indicate values within ten (10) percent of the actual flow being measured.

8. Signatory Requirements

a. All reports and other information required by the Division, shall be signed and certified for accuracy by the permittee in accord with the following criteria:

   i) In the case of corporations, by a responsible corporate officer. For purposes of this section, the responsible corporate officer is responsible for the overall operation of the facility from which the discharge described in the form originates;

   ii) In the case of a partnership, by a general partner;

   iii) In the case of a sole proprietorship, by the proprietor;

   iv) In the case of a municipal, state, or other public facility, by either a principal executive officer, or ranking elected official. For purposes of this section, a principal executive officer has responsibility for the overall operation of the facility from which the discharge originates;

   v) By a duly authorized representative of a person described above, only if:

      1) The authorization is made in writing by a person described in i, ii, iii, or iv above;

      2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and,

      3) The written authorization is submitted to the Division.

b. If an authorization as described in this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of this section must be submitted to the Division prior to or together with any reports, information, or applications to be signed by an authorized representative.

   The permittee, or the duly authorized representative shall make and sign the following certification on all such documents:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

PART II

A. NOTIFICATION REQUIREMENTS

1. Notification to Parties

All notification requirements under this section shall be directed as follows:

a. Oral Notifications, during normal business hours shall be to:

Water Quality Protection Section - Domestic Compliance Program
Water Quality Control Division
Telephone: (303) 692-3500

b. Written notification shall be to:

Water Quality Protection Section - Domestic Compliance Program
Water Quality Control Division
Colorado Department of Public Health and Environment
WQCD-WQP-B2
4300 Cherry Creek Drive South
Denver, CO 80246-1530

2. Change in Discharge

The permittee shall give advance notice to the Division, in writing, of any planned physical alterations or additions to the permitted facility. Notice is required only when:

a. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged, or;

b. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported pursuant to an approved land application plan.

Whenever notification of any planned physical alterations or additions to the permitted facility is required pursuant to this section, the permittee shall furnish the Division such plans and specifications which the Division deems reasonably necessary to evaluate the effect on the discharge, the stream, or ground water. If the Division finds that such new or altered discharge might be inconsistent with the conditions of the permit, the Division shall require a new or revised permit application and shall follow the procedures specified in Sections 61.5 through 61.6, and 61.15 of the Colorado Discharge Permit System Regulations.

3. Noncompliance Notification

The permittee shall give advance notice to the Division, in writing, of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

a. If, for any reason, the permittee does not comply with or will be unable to comply with any discharge limitations or standards specified in this permit, the permittee shall, at a minimum, provide the Division with the following information:

i) A description of the noncompliance and its cause;

ii) The period of noncompliance, including exact dates and times and/or the anticipated time when the discharge will return to compliance; and

iii) Steps being taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge.

b. The permittee shall report the following circumstances **orally within twenty-four (24) hours** from the time the permittee becomes aware of the circumstances, and shall mail to the Division a written report containing the information requested in Part II.A.4 (a) **within five (5) working days** after becoming aware of the following circumstances:

i) Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident;

ii) Circumstances leading to any unanticipated bypass which exceeds any effluent limitations in the permit;

iii) Circumstances leading to any upset which causes an exceedance of any effluent limitation in the permit;

iv) Daily maximum violations for any of the pollutants limited by Part I.A of this permit as specified in Part III of this permit. This includes any toxic pollutant or hazardous substance or any pollutant specifically identified as the method to control any toxic pollutant or hazardous substance.

c. Unless otherwise indicated in this permit, the permittee shall report instances of non-compliance which are not required to be reported within 24-hours at the time Discharge Monitoring Reports are submitted. The reports shall contain the information listed in sub-paragraph (a) of this section.

4. Transfer of Ownership or Control

The permittee shall notify the Division, in writing, thirty (30) calendar days in advance of a proposed transfer of the permit.

a. Except as provided in paragraph b. of this section, a permit may be transferred by a permittee only if the permit has been modified or revoked and reissued as provided in Section 61.8(8) of the Colorado Discharge Permit System Regulations, to identify the new permittee and to incorporate such other requirements as may be necessary under the Federal Act.

b. A permit may be automatically transferred to a new permittee if:

i) The current permittee notifies the Division in writing 30 calendar days in advance of the proposed transfer date; and

ii) The notice includes a written agreement between the existing and new permittee(s) containing a specific date for transfer of permit responsibility, coverage and liability between them; and

iii) The Division does not notify the existing permittee and the proposed new permittee of its intent to modify, or revoke and reissue the permit.

iv) Fee requirements of the Colorado Discharge Permit System Regulations, Section 61.15, have been met.

5. Other Notification Requirements

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule in the permit, shall be submitted on the date listed in the compliance schedule section. The fourteen (14) calendar day provision in Regulation 61.8(4)(n)(i) has been incorporated into the due date.

The permittee's notification of all anticipated noncompliance does not stay any permit condition.

All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Division as soon as they know or have reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i) One hundred micrograms per liter (100 µg/l);

ii) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2.4-dinitrophenol and 2-methyl-4.6-dinitrophenol; and one milligram per liter (1.0 mg/l) for antimony;

iii) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with Section 61.4(2)(g).

iv) The level established by the Division in accordance with 40 C.F.R. § 122.44(f).

b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i) Five hundred micrograms per liter (500 µg/l);

ii) One milligram per liter (1 mg/l) for antimony; and

iii) Ten (10) times the maximum concentration value reported for that pollutant in the permit application.

iv) The level established by the Division in accordance with 40 C.F.R. § 122.44(f).

6. Bypass Notification

If the permittee knows in advance of the need for a bypass, a notice shall be submitted, at least ten (10) calendar days before the date of the bypass, to the Division. The bypass shall be subject to Division approval and limitations imposed by the Division. Violations of requirements imposed by the Division will constitute a violation of this permit.

7. Bypass

a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

b. Bypasses are prohibited and the Division may take enforcement action against the permittee for bypass, unless:

i) The bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;

ii) There were no feasible alternatives to bypass such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

iii) Proper notices were submitted in compliance with Part II.A.5.

c. "Severe property damage" as used in this Subsection means substantial physical damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

d. The permittee may allow a bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance or to assure optimal operation. These bypasses are not subject to the provisions of paragraph (a) above.

e. The Division may approve an anticipated bypass, after considering adverse effects, if the Division determines that the bypass will meet the conditions specified in paragraph (a) above.

8. Upsets

a. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

b. Effect of an Upset

An upset constitutes an affirmative defense to an action brought for noncompliance with permit effluent limitations if the requirements of paragraph (b) of this section are met. No determination made during administrative review of claims that

noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. Conditions Necessary for a Demonstration of Upset

A permittee who wishes to establish the affirmative defense of upset shall demonstrate through properly signed contemporaneous operating logs, or other relevant evidence that:

i) An upset occurred and that the permittee can identify the specific cause(s) of the upset; and

ii) The permitted facility was at the time being properly operated and maintained; and

iii) The permittee submitted proper notice of the upset as required in Part II.A.4. of this permit (24-hour notice); and
iv) The permittee complied with any remedial measure necessary to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reason able likelihood of adversely affecting human health or the environment.

In addition to the demonstration required above, a permittee who wishes to establish the affirmative defense of upset for a violation of effluent limitations based upon water quality standards shall also demonstrate through monitoring, modeling or other methods that the relevant standards were achieved in the receiving water.

d. Burden of Proof

In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

9. Submission of Incorrect or Incomplete Information

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Division, the permittee shall promptly submit such facts or information.

B. RESPONSIBILITIES

1. Reduction, Loss, or Failure of Treatment Facility

The permittee has the duty to halt or reduce any activity if necessary to maintain compliance with the effluent limitations of the permit. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control production, control sources of wastewater, or all discharges, until the facility is restored or an alternative method of treatment is provided. This provision also applies to power failures, unless an alternative power source sufficient to operate the wastewater control facilities is provided.

It shall not be a defense for a permittee in an enforcement action that it would be necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

2. Inspections and Right to Entry

The permittee shall allow the Division and/or the authorized representative, upon the presentation of credentials:

a. To enter upon the permittee's premises where a regulated facility or activity is located or in which any records are required to be kept under the terms and conditions of this permit;

b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit and to inspect any monitoring equipment or monitoring method required in the permit; and

c. To enter upon the permittee's premises in a reasonable manner and at a reasonable time to inspect and/or investigate, any actual, suspected, or potential source of water pollution, or to ascertain compliance or non compliance with the Colorado Water Quality Control Act or any other applicable state or federal statute or regulation or any order promulgated by the Division. The investigation may include, but is not limited to, the following: sampling of any discharge and/or process waters, the taking of photographs, interviewing of any person having knowledge related to the discharge permit or

alleged violation, access to any and all facilities or areas within the permittee's premises that may have any affect on the discharge, permit, or alleged violation. Such entry is also authorized for the purpose of inspecting and copying records required to be kept concerning any effluent source.

d. The permittee shall provide access to the Division to sample the discharge at a point after the final treatment process but prior to the discharge mixing with state waters upon presentation of proper credentials.

In the making of such inspections, investigations, and determinations, the Division, insofar as practicable, may designate as its authorized representatives any qualified personnel of the Department of Agriculture. The Division may also request assistance from any other state or local agency or institution.

3. Duty to Provide Information

The permittee shall furnish to the Division, within a reasonable time, any information which the Division may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Division, upon request, copies of records required to be kept by this permit.

4. Availability of Reports

Except for data determined to be confidential under Section 308 of the Federal Clean Water Act and the Colorado Discharge Permit System Regulations 5 CCR 1002-61, Section 61.5(4), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Division and the Environmental Protection Agency.

The name and address of the permit applicant(s) and permittee(s), permit applications, permits and effluent data shall not be considered confidential. Knowingly making false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Clean Water Act, and Section 25-8-610 C.R.S.

5. Modification, Suspension, Revocation, or Termination of Permits By the Division

The filing of a request by the permittee for a permit modification, revocation and reissuance, termination or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

a. A permit may be modified, suspended, or terminated in whole or in part during its term for reasons determined by the Division including, but not limited to, the following:

   i) Violation of any terms or conditions of the permit;

   ii) Obtaining a permit by misrepresentation or failing to disclose any fact which is material to the granting or denial of a permit or to the establishment of terms or conditions of the permit; or

   iii) Materially false or inaccurate statements or information in the permit application or the permit.

   iv) A determination that the permitted activity endangers human health or the classified or existing uses of state waters and can only be regulated to acceptable levels by permit modifications or termination.

b. A permit may be modified in whole or in part for the following causes, provided that such modification complies with the provisions of Section 61.10 of the Colorado Discharge Permit System Regulations:

   i) There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.

   ii) The Division has received new information which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of different permit conditions at the time of issuance. For permits issued to new sources or new dischargers, this cause includes information derived from effluent testing required under Section 61.4(7)(e) of the Colorado Discharge Permit System Regulations. This provision allows a modification of the permit to include conditions that are less stringent than the existing permit only to the extent allowed under Section 61.10 of the Colorado Discharge Permit System Regulations.

iii) The standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued. Permits may be modified during their terms for this cause only as follows:

(A) The permit condition requested to be modified was based on a promulgated effluent limitation guideline, EPA approved water quality standard, or an effluent limitation set forth in 5 CCR 1002-62, § 62 et seq.; and

(B) EPA has revised, withdrawn, or modified that portion of the regulation or effluent limitation guideline on which the permit condition was based, or has approved a Commission action with respect to the water quality standard or effluent limitation on which the permit condition was based; and

(C) The permittee requests modification after the notice of final action by which the EPA effluent limitation guideline, water quality standard, or effluent limitation is revised, withdrawn, or modified; or

(D) For judicial decisions, a court of competent jurisdiction has remanded and stayed EPA promulgated regulations or effluent limitation guidelines, if the remand and stay concern that portion of the regulations or guidelines on which the permit condition was based and a request is filed by the permittee in accordance with this Regulation, within ninety (90) calendar days of judicial remand.

iv) The Division determines that good cause exists to modify a permit condition because of events over which the permittee has no control and for which there is no reasonable available remedy.

v) Where the Division has completed, and EPA approved, a total maximum daily load (TMDL) which includes a wasteload allocation for the discharge(s) authorized under the permit.

vi) The permittee has received a variance.

vii) When required to incorporate applicable toxic effluent limitation or standards adopted pursuant to § 307(a) of the Federal act.

viii) When required by the reopener conditions in the permit.

ix) As necessary under 40 C.F.R. 403.8(e), to include a compliance schedule for the development of a pretreatment program.

x) When the level of discharge of any pollutant which is not limited in the permit exceeds the level which can be achieved by the technology-based treatment requirements appropriate to the permittee under Section 61.8(2) of the Colorado Discharge Permit System Regulations.

xi) To establish a pollutant notification level required in Section 61.8(5) of the Colorado Discharge Permit System Regulations.

xii) To correct technical mistakes, such as errors in calculation, or mistaken interpretations of law made in determining permit conditions, to the extent allowed in Section 61.10 of the Colorado State Discharge Permit System Regulations.

xiii) When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.

xiv) When another State whose waters may be affected by the discharge has not been notified.

xv) For any other cause provided in Section 61.10 of the Colorado Discharge Permit System Regulations.

c. At the request of a permittee, the Division may modify or terminate a permit and issue a new permit if the following conditions are met:

i) The Regional Administrator has been notified of the proposed modification or termination and does not object in writing within thirty (30) calendar days of receipt of notification,

ii) The Division finds that the permittee has shown reasonable grounds consistent with the Federal and State statutes and regulations for such modifications or termination;

iii) Requirements of Section 61.15 of the Colorado Discharge Permit System Regulations have been met, and

iv) Requirements of public notice have been met.

d. For permit modification, termination, or revocation and reissuance, the Division may request additional information from the permittee. In the case of a modified permit, the Division may require the submission of an updated application. In the case of revoked and reissued permit, the Division shall require the submission of a new application.

e. Permit modification (except for minor modifications), termination or revocation and reissuance actions shall be subject to the requirements of Sections 61.5(2), 61.5(3), 61.6, 61.7 and 61.15 of the Colorado Discharge Permit System Regulations. The Division shall act on a permit modification request, other than minor modification requests, within 180 calendar days of receipt thereof. Except for minor modifications, the terms of the existing permit govern and are enforceable until the newly issued permit is formally modified or revoked and reissued following public notice.

f. Upon consent by the permittee, the Division may make minor permit modifications without following the requirements of Sections 61.5(2), 61.5(3), 61.7, and 61.15 of the Colorado Discharge Permit System Regulations. Minor modifications to permits are limited to:

i) Correcting typographical errors; or

ii) Increasing the frequency of monitoring or reporting by the permittee; or

iii) Changing an interim date in a schedule of compliance, provided the new date of compliance is not more than 120 calendar days after the date specific in the existing permit and does not interfere with attainment of the final compliance date requirement; or

iv) Allowing for a transfer in ownership or operational control of a facility where the Division determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new permittees has been submitted to the Division; or

v) Changing the construction schedule for a discharger which is a new source, but no such change shall affect a discharger's obligation to have all pollution control equipment installed and in operation prior to discharge; or

vi) Deleting a point source outfall when the discharge from that outfall is terminated and does not result in discharge of pollutants from other outfalls except in accordance with permit limits.

vii) Incorporating conditions of a POTW pretreatment program that has been approved in accordance with the procedures in 40 CFR 403.11 (or a modification thereto that has been approved in accordance with the procedures in 40 CFR 403.18) as enforceable conditions of the POTW's permits.

g. When a permit is modified, only the conditions subject to modification are reopened. If a permit is revoked and reissued, the entire permit is reopened and subject to revision and the permit is reissued for a new term.

h. The filing of a request by the permittee for a permit modification, revocation and reissuance or termination does not stay any permit condition.

i. All permit modifications and reissuances are subject to the antibacksliding provisions set forth in 61.10(e) through (g).

j. If cause does not exist under this section, the Division shall not modify or revoke and reissue the permit.

6. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 (Oil and Hazardous Substance Liability) of the Clean Water Act.

7. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority granted by Section 510 of the Clean Water Act. Nothing in this permit shall be construed to prevent or limit application of any emergency power of the division.

8. Permit Violations

Failure to comply with any terms and/or conditions of this permit shall be a violation of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Except as provided elsewhere in this permit, nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance (40 CFR 122.41(a)(1)).

9. Severability

The provisions of this permit are severable. If any provisions or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances and the application of the remainder of this permit shall not be affected.

10. Confidentiality

Any information relating to any secret process, method of manufacture or production, or sales or marketing data which has been declared confidential by the permittee, and which may be acquired, ascertained, or discovered, whether in any sampling investigation, emergency investigation, or otherwise, shall not be publicly disclosed by any member, officer, or employee of the Commission or the Division, but shall be kept confidential. Any person seeking to invoke the protection of this Subsection (12) shall bear the burden of proving its applicability. This section shall never be interpreted as preventing full disclosure of effluent data.

11. Fees

The permittee is required to submit payment of an annual fee as set forth in the 2005 amendments to the Water Quality Control Act. Section 25-8-502 (l) (b), and the Colorado Discharge Permit System Regulations 5 CCR l002-61, Section 61.l5 as amended. Failure to submit the required fee when due and payable is a violation of the permit and will result in enforcement action pursuant to Section 25-8-60l et. seq., C.R.S. l973 as amended.

12. Duration of Permit

The duration of a permit shall be for a fixed term and shall not exceed five (5) years. If the permittee desires to continue to discharge, a permit renewal application shall be submitted at least one hundred eighty (180) calendar days before this permit expires. Filing of a timely and complete application shall cause the expired permit to continue in force to the effective date of the new permit. The permit's duration may be extended only through administrative extensions and not through interim modifications.If the permittee anticipates there will be no discharge after the expiration date of this permit, the Division should be promptly notified so that it can terminate the permit in accordance with Part II.B.4.

13. Section 307 Toxics

If a toxic effluent standard or prohibition, including any applicable schedule of compliance specified, is established by regulation pursuant to Section 307 of the Federal Act for a toxic pollutant which is present in the permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in the discharge permit, the Division shall institute proceedings to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition.

14. Effect of Permit Issuance

a. The issuance of a permit does not convey any property or water rights in either real or personal property, or stream flows or any exclusive privilege.

b. The issuance of a permit does not authorize any injury to person or property or any invasion of personal rights, nor does it authorize the infringement of federal, state, or local laws or regulations.

c. Except for any toxic effluent standard or prohibition imposed under Section 307 of the Federal act or any standard for sewage sludge use or disposal under Section 405(d) of the Federal act, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with Sections 301, 302, 306, 318, 403, and 405(a) and (b) of the Federal act. However, a permit may be modified, revoked and reissued, or terminated during its term for cause as set forth in Section 61.8(8) of the Colorado Discharge Permit System Regulations.

d. Compliance with a permit condition which implements a particular standard for biosolid use or disposal shall be an affirmative defense in any enforcement action brought for a violation of that standard for biosolid use or disposal.

PART III

Table I—Testing Requirements for Organic Toxic Pollutants by Industrial Category for Existing Dischargers

Industry Category	
Adhesives and sealants	Ore mining
Aluminum forming	Organic chemicals manufacturing
Auto and other laundries	Paint and ink formulation
Battery manufacturing	Pesticides
Coal mining	Petroleum refining
Coil coating	Pharmaceutical preparations
Copper forming	Photographic equipment and supplies
Electrical and electronic components	Plastics processing
Electroplating	Plastic and synthetic materials manufacturing
Explosives manufacturing	Porcelain enameling
Foundries	Printing and publishing
Gum and wood chemicals	Pulp and paper mills
Inorganic chemicals manufacturing	Rubber processing
Iron and steel manufacturing	Soap and detergent manufacturing
Leather tanning and finishing	Steam electric power plants
Mechanical products manufacturing	Textile mills
Nonferrous metals manufacturing	Timber products processing

Table II—Organic Toxic Pollutants in Each of Four Fractions in Analysis by Gas Chromatography/Mass

Volatiles	Acid Compounds	Base/Neutral	Pesticides
1V acrolein	1A 2-chlorophenol	1B acenaphthene	1P aldrin
2V acrylonitrile	2A 2,4-dichlorophenol	2B acenaphthylene	2P alpha-BHC
3V benzene	3A 2,4-dimethylphenol	3B anthracene	3P beta-BHC
5V bromoform	4A 4,6-dinitro-o-cresol	4B benzidine	4P gamma-BHC
6V carbon tetrachloride	5A 2,4-dinitrophenol	5B benzo(a)anthracene	5P delta-BHC
7V chlorobenzene	6A 2-nitrophenol	6B benzo(a)pyrene	6P chlordane
8V chlorodibromomethane	7A 4-nitrophenol	7B 3,4-benzofluoranthene	7P 4,4′-DDT
9V chloroethane	8A p-chloro-m-cresol	8B benzo(ghi)perylene	8P 4,4′-DDE
10V 2-chloroethylvinyl ether	9A pentachlorophenol	9B benzo(k)fluoranthene	9P 4,4′-DDD
11V chloroform	10A phenol	10B bis(2-chloroethoxy)methane	10P dieldrin
12V dichlorobromomethane	11A 2,4,6-trichlorophenol	11B bis(2-chloroethyl)ether	11P alpha-endosulfan
14V 1,1-dichloroethane		12B bis(2-chloroisopropyl)ether	12P beta-endosulfan
15V 1,2-dichloroethane		13B bis (2-ethylhexyl)phthalate	13P endosulfan sulfate
16V 1,1-dichloroethylene		14B 4-bromophenyl phenyl ether	14P endrin
17V 1,2-dichloropropane		15B butylbenzyl phthalate	15P endrin aldehyde
18V 1,3-dichloropropylene		16B 2-chloronaphthalene	16P heptachlor
19V ethylbenzene		17B 4-chlorophenyl phenyl ether	17P heptachlor epoxide
20V methyl bromide		18B chrysene	18P PCB-1242
21V methyl chloride		19B dibenzo(a,h)anthracene	19P PCB-1254
22V methylene chloride		20B 1,2-dichlorobenzene	20P PCB-1221
23V 1,1,2,2-tetrachloroethane		21B 1,3-dichlorobenzene	21P PCB-1232
24V tetrachloroethylene		22B 1,4-dichlorobenzene	22P PCB-1248
25V toluene		23B 3,3′-dichlorobenzidine	23P PCB-1260
26V 1,2-trans-dichloroethylene		24B diethyl phthalate	24P PCB-1016
27V 1,1,1-trichloroethane		25B dimethyl phthalate	25P toxaphene
28V 1,1,2-trichloroethane		26B di-n-butyl phthalate	
29V trichloroethylene		27B 2,4-dinitrotoluene	
31V vinyl chloride		28B 2,6-dinitrotoluene	
		29B di-n-octyl phthalate	
		30B 1,2-diphenylhydrazine (as azobenzene)	
		31B fluroranthene	
		32B fluorene	
		33B hexachlorobenzene	
		34B hexachlorobutadiene	
		35B hexachlorocyclopentadiene	
		36B hexachloroethane	
		37B indeno(1,2,3-cd)pyrene	
		38B isophorone	
		39B napthalene	
		40B nitrobenzene	
		41B N-nitrosodimethylamine	
		42B N-nitrosodi-n-propylamine	
		43B N-nitrosodiphenylamine	
		44B phenanthrene	
		45B pyrene	
		46B 1,2,4-trichlorobenzene	

Table III—Other Toxic Pollutants (Metals and Cyanide) and Total Phenols

Antimony, Total
Arsenic, Total
Beryllium, Total
Cadmium, Total
Chromium, Total
Copper, Total
Lead, Total
Mercury, Total
Nickel, Total
Selenium, Total
Silver, Total
Thallium, Total
Zinc, Total
Cyanide, Total
Phenols, Total

Table IV—Conventional and Nonconventional Pollutants Required To Be Tested by Existing Dischargers if Expected to be Present

Bromide
Chlorine, Total Residual
Color
Fecal Coliform
Fluoride
Nitrate-Nitrite
Nitrogen, Total Organic
Oil and Grease
Phosphorus, Total
Radioactivity
Sulfate
Sulfide
Sulfite
Surfactants
Aluminum, Total
Barium, Total
Boron, Total
Cobalt, Total
Iron, Total
Magnesium, Total
Molybdenum, Total
Manganese, Total
Tin, Total
Titanium, Total

Table V—Toxic Pollutants and Hazardous Substances Required To Be Identified by Existing Dischargers if Expected To Be Present

Toxic Pollutants

Asbestos

Hazardous Substances

Acetaldehyde
Allyl alcohol
Allyl chloride
Amyl acetate
Aniline
Benzonitrile
Benzyl chloride
Butyl acetate
Butylamine
Captan
Carbaryl
Carbofuran
Carbon disulfide
Chlorpyrifos
Coumaphos
Cresol
Crotonaldehyde
Cyclohexane
2,4-D (2,4-Dichlorophenoxy acetic acid)
Diazinon
Dicamba
Dichlobenil
Dichlone
2,2-Dichloropropionic acid
Dichlorvos
Diethyl amine
Dimethyl amine
Dintrobenzene
Diquat
Disulfoton
Diuron
Epichlorohydrin
Ethion
Ethylene diamine
Ethylene dibromide
Formaldehyde
Furfural
Guthion
Isoprene
Isopropanolamine Dodecylbenzenesulfonate
Kelthane
Kepone
Malathion
Mercaptodimethur
Methoxychlor
Methyl mercaptan
Methyl methacrylate
Methyl parathion
Mevinphos
Mexacarbate
Monoethyl amine
Monomethyl amine
Naled
Napthenic acid
Nitrotoluene
Parathion
Phenolsulfanate
Phosgene
Propargite
Propylene oxide
Pyrethrins
Quinoline
Resorcinol
Strontium
Strychnine
Styrene
2,4,5-T (2,4,5-Trichlorophenoxy acetic acid)
TDE (Tetrachlorodiphenylethane)
2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid]
Trichlorofan
Triethanolamine dodecylbenzenesulfonate
Triethylamine
Trimethylamine
Uranium
Vanadium
Vinyl acetate
Xylene
Xylenol
Zirconium

Appendix C

WWTP
As-Builts

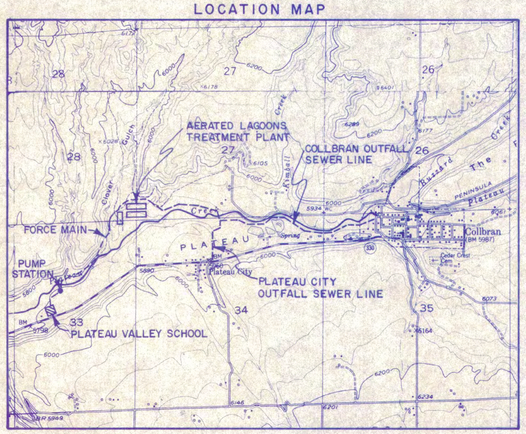
TOWN OF COLLBRAN
MESA COUNTY, COLORADO

VALLEYWIDE SEWERAGE SYSTEM

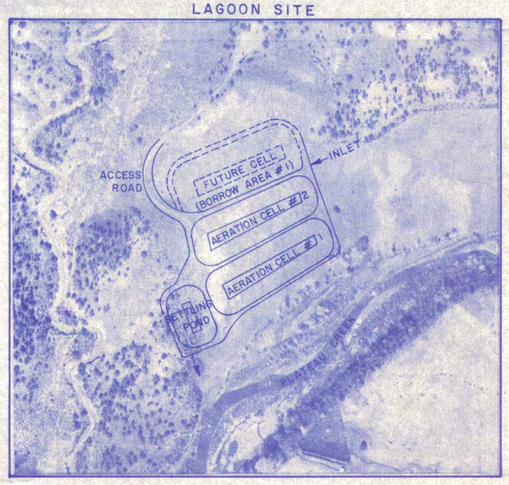
PART II
AERATED LAGOON TREATMENT PLANT

NOVEMBER 10, 1982

LOCATION MAP



LAGOON SITE



INDEX OF PLANS

AS-BUILT
JANUARY 31, 1984 - STL

PREPARED FOR
Town of Collbran

Collbran, Colorado

PREPARED BY
WESTWATER ENGINEERING
Consulting Engineers

Palisade, Colorado

CONSTRUCTION NOTES - SHEET 1
(See also Section 16)

1. Engineer will provide reference points as shown on the Layout Plan on Sheet 4.

(2) Slope bottom of aeration cells 1½ to center line.

(3) Construct drainage ditches at locations shown. Initial ditch depth to be 8" with 1:1 side slopes. Minimum slope to be 0.2%. Place cobbles in ditch for erosion protection where slope exceeds 5%.

(4) All 13- and 14-foot-wide berms to be gravel-surfaced. (See Section 4 of Specifications.) Also parking area and acess road (note 12)

5. Site work not shown on this sheet and which is to be provided on a unit quantity basis is as follows:

   a. Slope protection on outside embankment slope parallel to Plateau Creek up to elevation 5,838, and on the inside embankment slopes of the aeration cells from elevation 5,848.0 to elevation 5,844.5. (See Paragraph 16.10 of Specifications.)

   b. Seeding on outside berms without slope protection and top of berms not gravel-surfaced. (See Section 16.11 of Specifications.)

   c. Topsoil placement, which will generally be on the top and outside slopes of berms.

   Additional slope protection and seeding may be required; this will be determined after completion of the embankments.

(6) Construct fence at locations shown and locate vehicular and pedestrian gates where shown. (See Subsection 18.7 of Specifications and Standard Drawings for fence details.) Clearing and grubbing to extend 3' outside fence line.

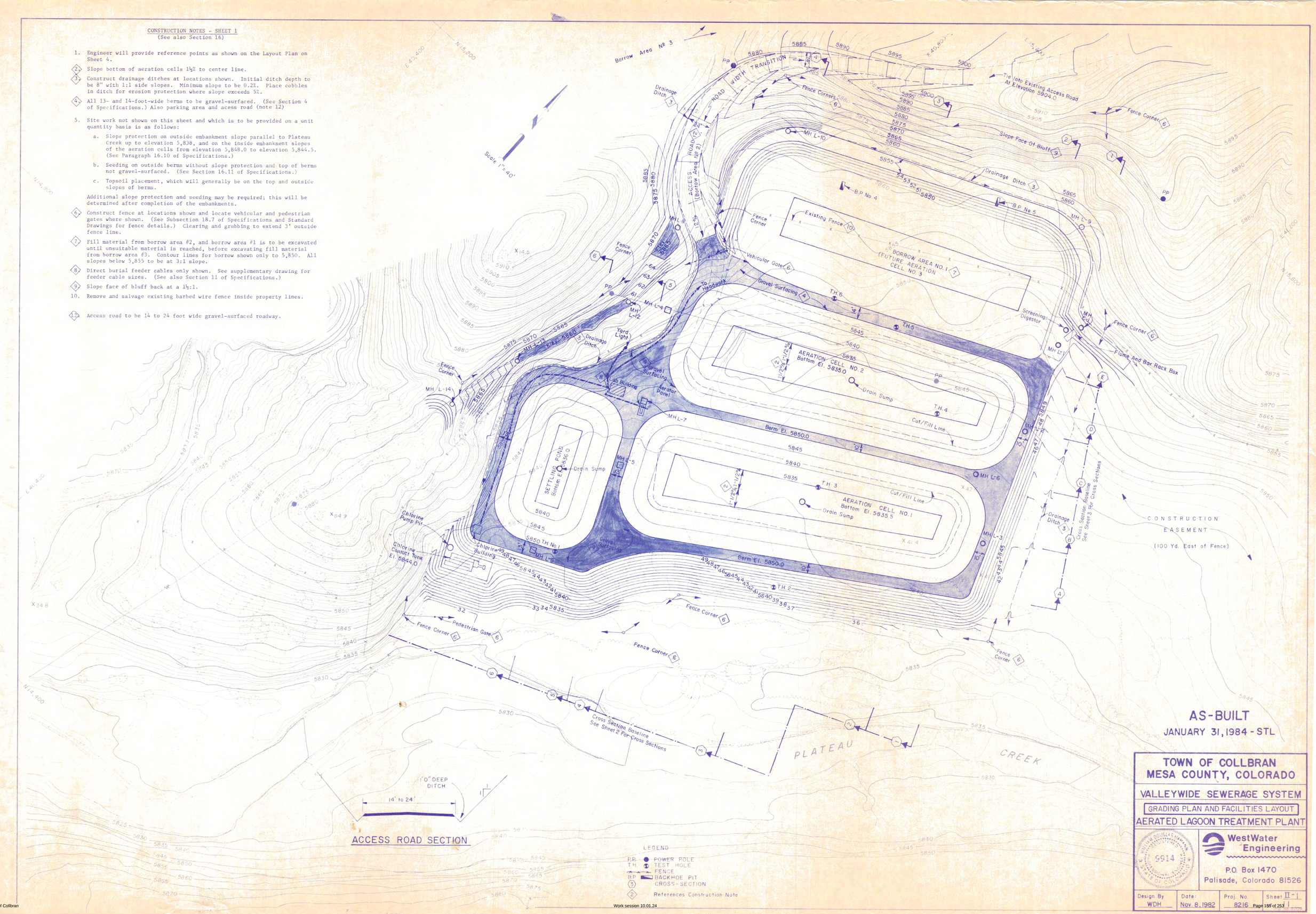
(7) Fill material from borrow area #2, and borrow area #1 is to be excavated until unsuitable material is reached, before excavating fill material from borrow area #3. Contour lines for borrow shown only to 5,850. All slopes below 5,855 to be at 3:1 slope.

(8) Direct burial feeder cables only shown. See supplementary drawing for feeder cable sizes. (See also Section 11 of Specifications.)

(9) Slope face of bluff back at a 1½:1.

10. Remove and salvage existing barbed wire fence inside property lines.

(12) Access road to be 14 to 24 foot wide gravel-surfaced roadway.



AS-BUILT
JANUARY 31, 1984 - STL

TOWN OF COLLBRAN
MESA COUNTY, COLORADO

VALLEYWIDE SEWERAGE SYSTEM

GRADING PLAN AND FACILITIES LAYOUT

AERATED LAGOON TREATMENT PLANT

WILLIAM DOUGLAS SWAN 9914 REGISTERED PROFESSIONAL ENGINEER STATE OF COLORADO

WestWater Engineering
P.O. Box 1470
Palisade, Colorado 81526

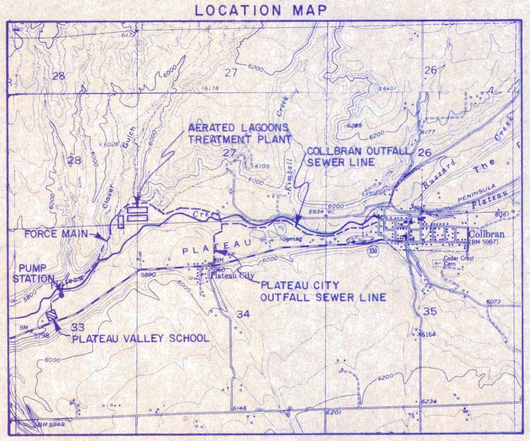
Design By	Date:	Proj. No.	Sheet
WDH	Nov. 8, 1982	8216	II-1

TOWN OF COLLBRAN
MESA COUNTY, COLORADO

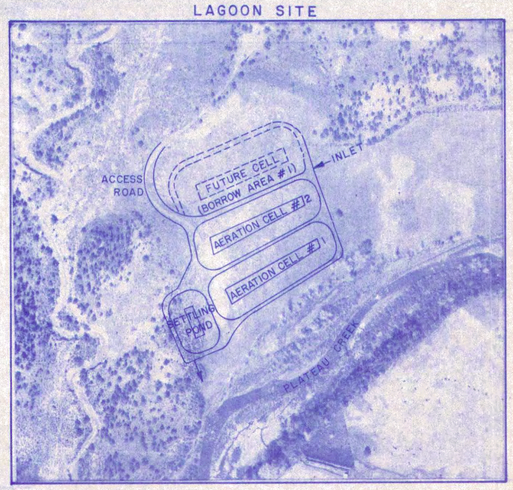
VALLEYWIDE SEWERAGE SYSTEM
PART II
AERATED LAGOON TREATMENT PLANT

NOVEMBER 10, 1982

LOCATION MAP



LAGOON SITE



INDEX OF PLANS

SHEET NO.	TITLE
1	GRADING PLAN AND FACILITIES LAYOUT
2	LAGOON CROSS-SECTIONS: N-S PROFILES
3	LAGOON CROSS-SECTIONS: E-W PROFILES
4	LAGOON PIPING AND LAYOUT PLAN
5	PIPE PROFILES AND FLOW DIAGRAM
6	MANHOLES AND FLOW CONTROL STRUCTURES
7	HEADWORKS: PRETREATMENT AND FLOW RECORDER
8	LABORATORY BUILDING AND ACCESSORIES
9	CHLORINATION EQUIPMENT
10	CHLORINE MIXING AND CONTACT TANKS
11	STRUCTURAL DESIGN FOR CONTACT TANKS

AS-BUILT
JANUARY 31, 1984 - STL

PREPARED FOR
Town of Collbran
Collbran, Colorado

PREPARED BY
WESTWATER ENGINEERING
Consulting Engineers
Palisade, Colorado

CONSTRUCTION NOTES - SHEET 1
(See also Section 16)

1. Engineer will provide reference points as shown on the Layout Plan on Sheet 4.

2. Slope bottom of aeration cells 1½% to center line.

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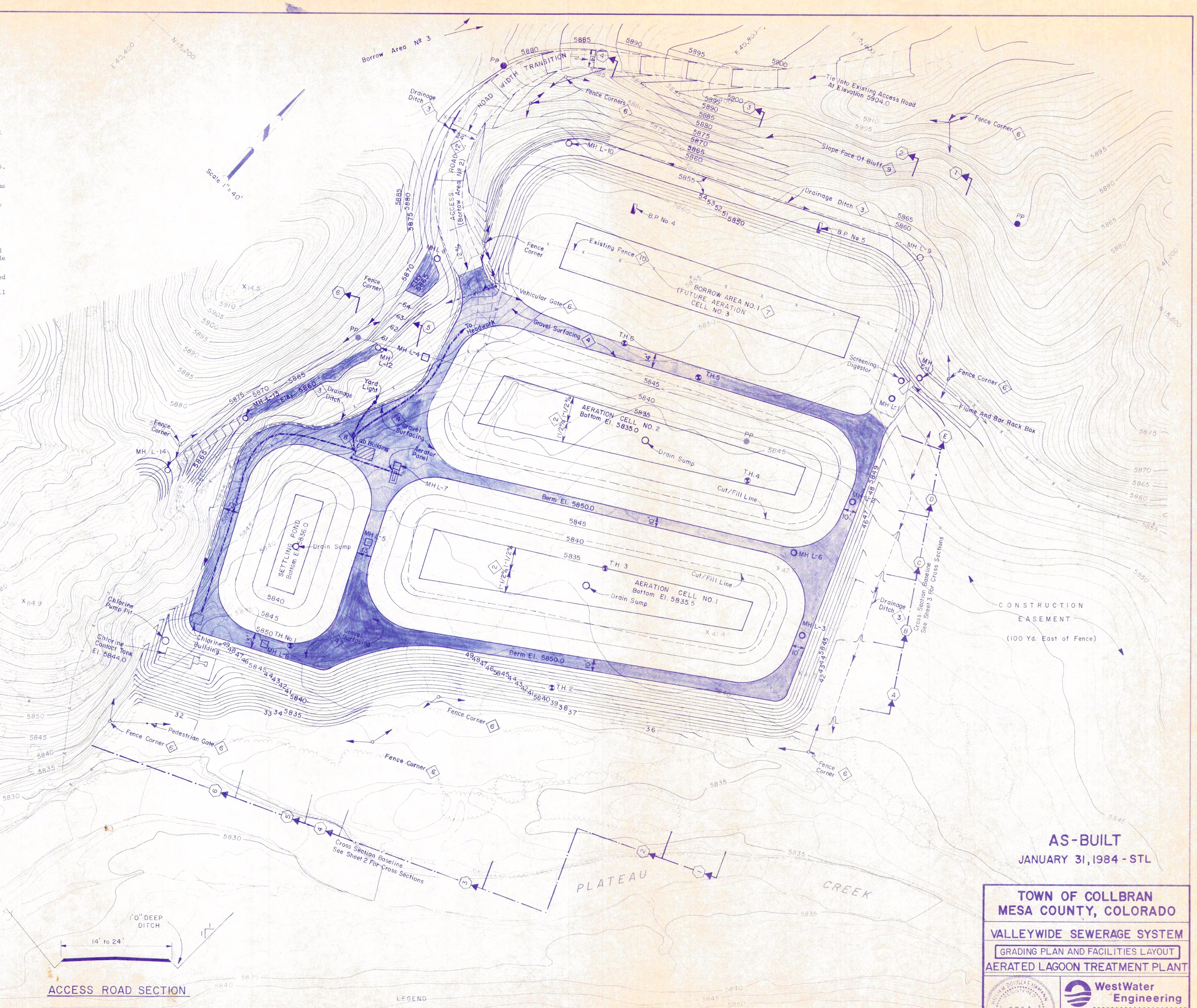


LEGEND

P.P. ● POWER POLE
T.H. TEST HOLE
FENCE
BP BACKHOE PIT
(3) CROSS-SECTION
◇2 References Construction Note

AS-BUILT
JANUARY 31, 1984 - STL

TOWN OF COLLBRAN
MESA COUNTY, COLORADO

VALLEYWIDE SEWERAGE SYSTEM

GRADING PLAN AND FACILITIES LAYOUT

AERATED LAGOON TREATMENT PLANT

WILLIAM DOUGLAS HAMANN REGISTERED PROFESSIONAL ENGINEER 5914 STATE OF COLORADO

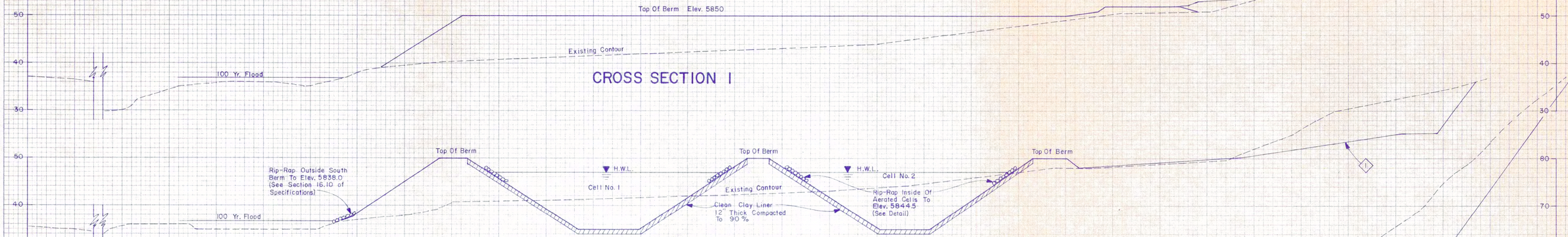
WestWater Engineering
P.O. Box 1470
Palisade, Colorado 81526

Design By	Date:	Proj. No.	Sheet
WDH	Nov. 8, 1982	8216	II-1 of 11

SOUTH ← → NORTH

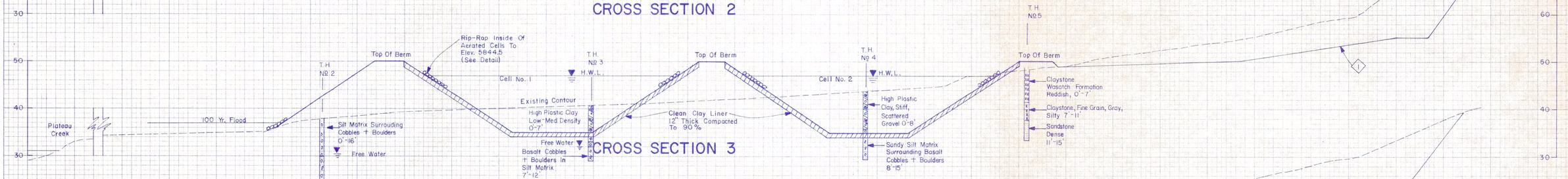
SCALE:
Vertical: 1" = 10'
Horizontal: 1" = 20'
Existing Grade
Finished Grade

CROSS SECTION 1

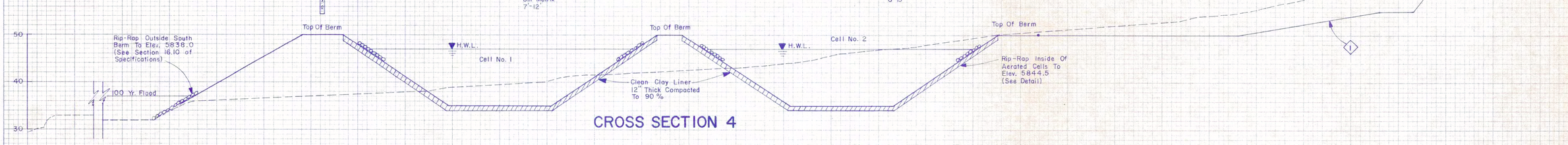


CROSS SECTION 2

CROSS SECTION 3



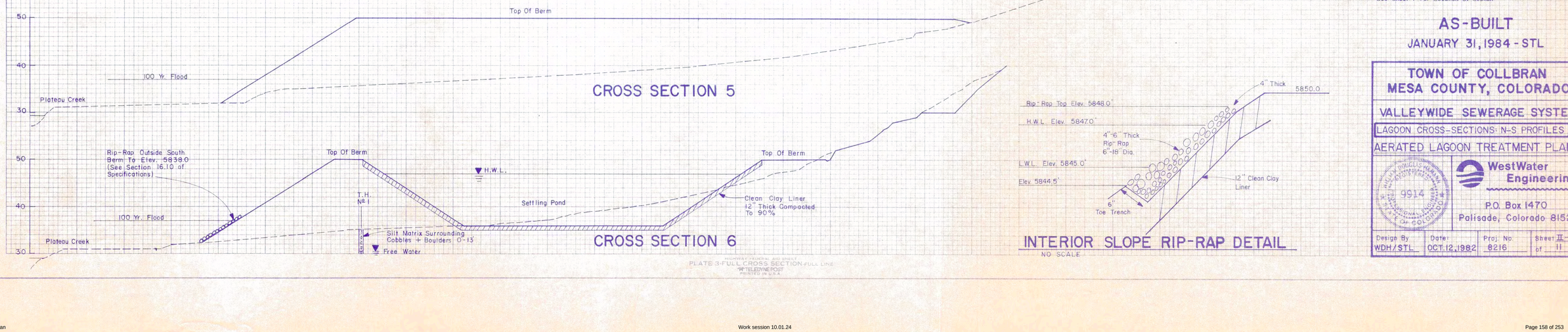
CROSS SECTION 4



HORIZONTAL STATIONING FOR CROSS SECTIONS 1, 2, 3 & 4

HORIZONTAL STATIONING FOR CROSS SECTIONS 5 & 6

CROSS SECTION 5



CROSS SECTION 6

INTERIOR SLOPE RIP-RAP DETAIL

NO SCALE

◇1 Excavation Must Extend, At Minimum, To Line Shown, Deeper If Suitable Materials Are Available. See Sheet 1 For Location Of Section.

AS-BUILT
JANUARY 31, 1984 - STL

TOWN OF COLLBRAN
MESA COUNTY, COLORADO

VALLEYWIDE SEWERAGE SYSTEM

LAGOON CROSS-SECTIONS: N-S PROFILES

AERATED LAGOON TREATMENT PLANT

WestWater Engineering
P.O. Box 1470
Palisade, Colorado 81526

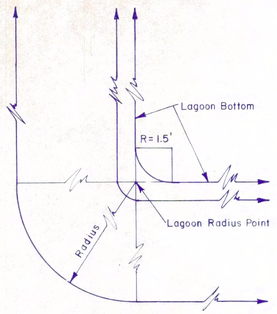
Design By	Date	Proj. No.	Sheet
WDH/STL	OCT. 12, 1982	8216	II-2 of 11

FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, NOTE BOOK, AREAS, AREAS CHECKED, NO., BY, DATE

ORIGINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, NOTE BOOK, AREAS, AREAS CHECKED, NO., BY, DATE

HIGHWAY FEDERAL AID SHEET
PLATE 3-FULL CROSS SECTION-FULL LINE
TELEDYNE POST
PRINTED IN U.S.A.


WEST
EAST
SCALE
Vertical 1" = 10'
Horizontal 1" = 20'
Existing Grade
Finished Grade
Top Of Berm
H.W.L.
Settling Pond
Clean Clay Liner 12" Thick Compacted To 90%
CROSS SECTION A
Rip-Rap Inside Of Aerated Cell To Elev. 5844.5 (See Detail Sheet 2)
Cell No. 1
Existing Contour
CROSS SECTION B
CROSS SECTION C
Road
Rip-Rap Inside Of Aerated Cells To Elev. 5844.5 (See Detail Sheet 2)
Cell No. 2
CROSS SECTION D
CROSS SECTION E
FINAL SURVEY
ORIGINAL SURVEY
AS-BUILT
JANUARY 31, 1984 - STL
TOWN OF COLLBRAN
MESA COUNTY, COLORADO
VALLEYWIDE SEWERAGE SYSTEM
LAGOON CROSS-SECTIONS: E-W PROFILES
AERATED LAGOON TREATMENT PLANT
WestWater Engineering
P.O. Box 1470
Palisade, Colorado 81526
Design By WDH
Date: Nov 8, 1982
Proj. No. 8216
Sheet II-3 of 11



TYPICAL LAGOON CORNER DETAIL
NO SCALE

A. SURVEY AND LAYOUT NOTES

1. The Engineer will provide reference points on the two base lines prior to the start of construction. Steel pins will be set each end, with numbered stations for points shown on the base line.
2. The Engineer will stake the following points on the aerated cells on a one-time basis prior to construction:
   a. The 4 points designating center of radii in each cell.
   b. The 4 points designating the outside tangent P.I.'s on each cell, plus P.C.'s and P.T.'s on each cell.
3. The Contractor shall provide any additional layout and grade staking needed for construction and will be responsible for resetting any reference points disturbed during construction.
4. Facilities such as manholes, pipelines and other structures not specifically dimensioned will be located by scaling off the Site Plan, and/or by the Engineer in the Field. The Contractor shall provide suitable assistance to the Engineer to locate these facilities.

B. PIPELINE INFORMATION

5. The 4" school force main connecting to MH L-14, and the 12" Collbran outfall line and MH C-1 are all part of the Schedule I contract (Sewer Collection Lines). Lagoon Contractor (Schedule II) builds MH L-14, and connects pipes to MH C-1.
6. Lagoon embankments & borrow area (Future Aeration Cell and Access Road) shall be brought to finish grade, and the 'trench road' (L-14 to L-11) shall be constructed before pipelines and manholes are installed.
7. Pipe stubs in MH's L-1 and L-4 to be 4 feet long with solvent weld, or braced cap. Place compression type (screw operated) sewer plug in unused stubs.
8. Sluice gates to be placed inside manholes at locations shown.
9. Pipe Outlet Structure at Creek: Exact location to be determined by Engineer. Design may be varied to fit conditions.

SCALE: 1" = 40'

C. REFERENCE SHEETS

Detail construction drawings for the various lagoon appurtenances are referenced as follows:

Chlorine Contact Tank	- Sheet 10-11
Chlorine Building	- Sheet 9
Lab Building	- Sheet 8
Flume and Bar Rack Box	- Sheet 7
Inlet Pad	- Sheet 6
Distributor Pipes	- Sheet 6
Drain Sump	- Std. Drawings
All Manholes on Lagoon	- Sheet 6
Electrical Cables	- Sheet 1

All pipe profiles for lagoon piping connecting to MH's L-1 through L-8 are shown on Sheet 5.

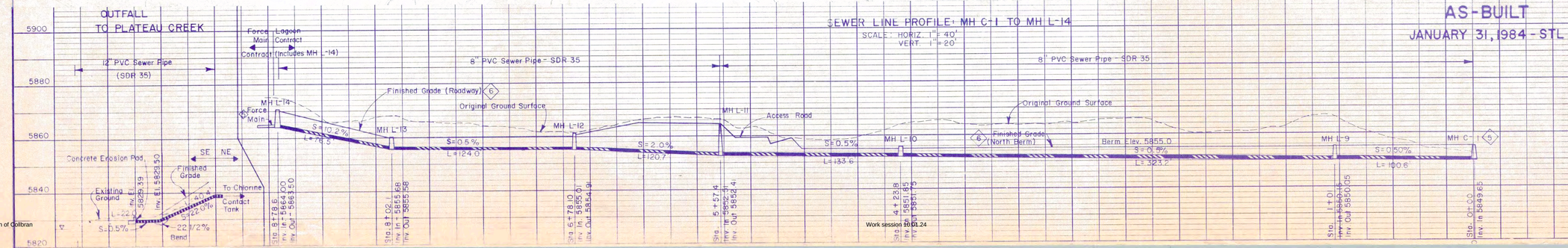
PLATEAU CREEK

MANHOLE DETAILS
(Some Orientation As Site Plan)

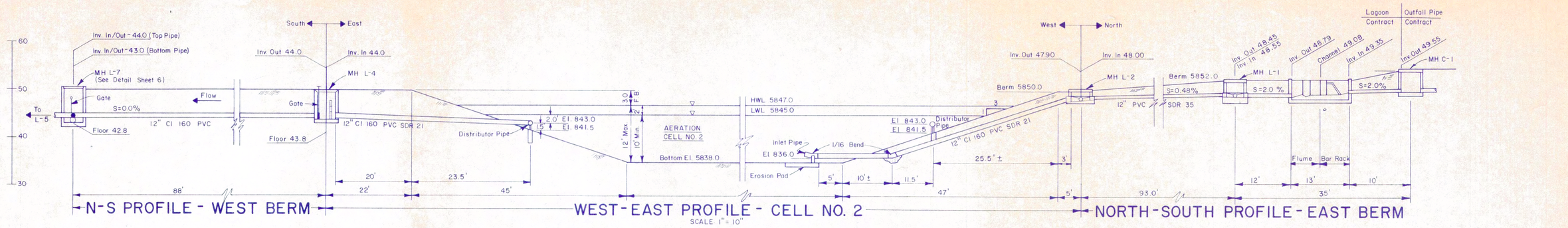
PIPE KEY
- Inlet Connector Pipes — 12" SDR 35 PVC
- Distribution Perforated Pipes — 12" SDR 26 PVC Class 160
- Connector & Inlet-Outlet Pipes — 12" SDR 26 PVC Class 160
- Westside Manhole Connector Pipes — 8" SDR 35 PVC
- Waterline — 2" Polyethylene

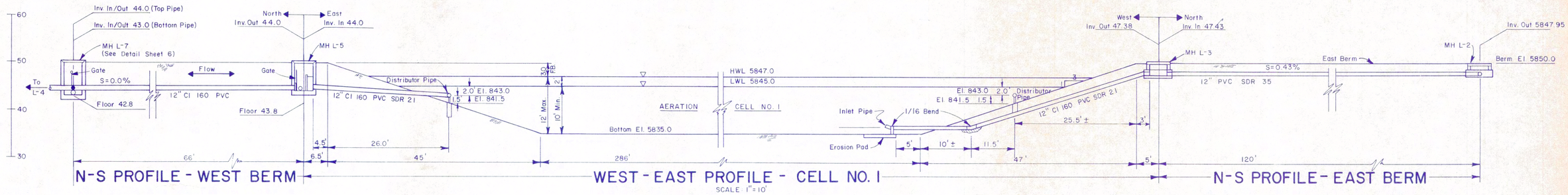
SEWER LINE PROFILE: MH C-1 TO MH L-14
SCALE: HORIZ. 1" = 40'
VERT. 1" = 20'

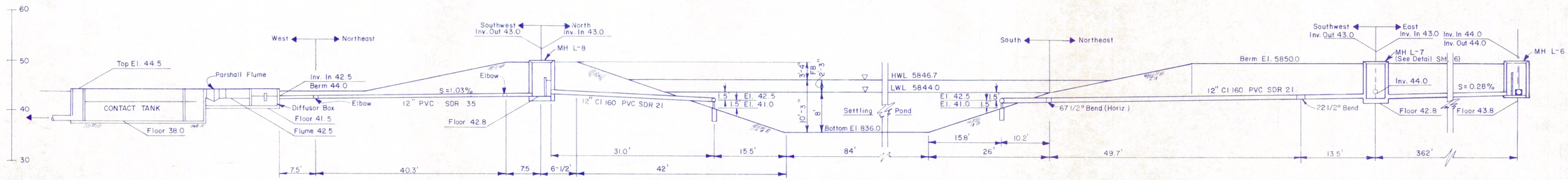
AS-BUILT
JANUARY 31, 1984 - STL

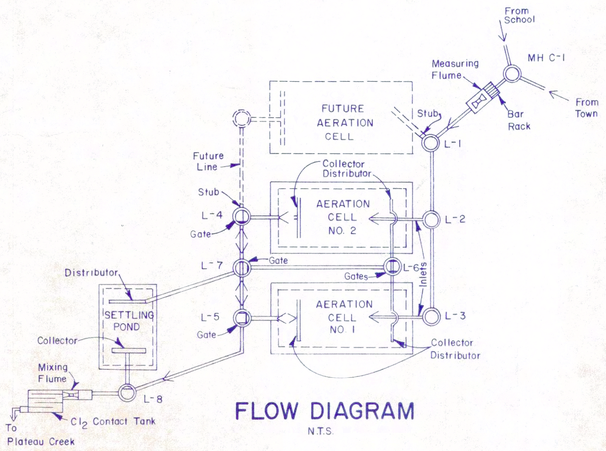


TOWN OF COLLBRAN MESA COUNTY, COLORADO	
VALLEYWIDE SEWERAGE SYSTEM	
LAGOON, PIPING AND LAYOUT PLAN	
AERATED LAGOON TREATMENT PLANT	
9914	WestWater Engineering P.O. Box 1470 Palisade, Colorado 81526
Design By: WDH	Date: Nov. 8, 1982
Proj. No.: 8216	Sheet II-4 of II



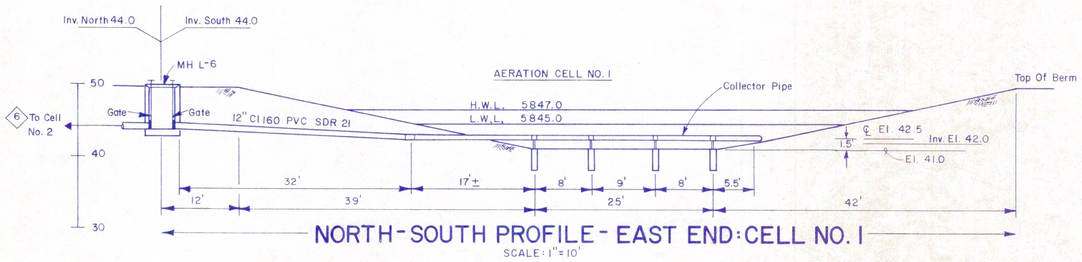






FLOW DIAGRAM

N.T.S.



LAGOON MANHOLE SCHEDULE

MH #	Purpose	Type of Wall and Base	Top	Side Wall Elevation Bottom	Side Wall Elevation Top	Side Wall Elevation Length	Height of Level Boards*	Sluice Gate Schedule Frame Height***	Sluice Gate Schedule # of Gates
L-1	Inlet-Flow Divider	Circular-Field Poured Base	Concrete w/Lid	48.7	51.7	3.0	N/A	N/A	N/A
L-2	Inlet-Flow Divider	Circular-Field Poured Base	Concrete w/Lid	48.8	49.8**	1.0	N/A	N/A	N/A
L-3	Inlet-Flow Divider	Circular-Field Poured Base	Concrete w/Lid	48.8	49.8	1.0	N/A	N/A	N/A
L-4	Level Control-Outlet	Square-Precast Flat Floor	Grating	43.8	51.3	7.5	3.2	6'0"	1
L-5	Level Control-Outlet	Square-Precast Flat Floor	Grating	43.8	50.3	6.5	3.2	5'0"	2
L-6	Level Control-Outlet	Square-Precast Flat Floor	Grating		50.3			5'0"	2
L-7	Inspection-Diversion	Square-Precast Flat Floor	Grating	42.8	50.3	7.5	4.2	5'0"	1
L-8	Level Control-Outlet	Square-Precast Flat Floor	Grating	42.8	50.3	7.5	4.2	N/A	N/A

*Based on High Water Level of 5847.0
**Inlet Pipe Crown may extend into side wall bottom (est. Ht. of Crown is 48.9').
***Frame Height measurement is from pipe center line to top of gate frame.

SHEET 5-CONSTRUCTION NOTES

1. See Sheet 4 for pipe layout and Section 17 for specifications.
2. The horizontal dimensions given for location of elbows and distributor pipes on the inlet-outlet piping are approximate only. Use as guides to field locate pipe and elbows; the vertical dimensions shown are controlling dimensions.
3. Other Pond Appurtenances (clay liner, riprap, relief valves, etc.) are not shown on the cross sections.
4. Pipeline lengths (between manholes) are approximate (from map scaling). Manholes to be staked in field.
5. Pipe Materials:
   a. Inlet Pipe MH C-1 to MH L-3 -- PVC Sewer Pipe, SDR 35
   b. From manhole into aeration cell or settling pond, and between MH's L-4', L-5, L-6, L-7 and L-8 -- Cl 160 PVC Pressure Pipe, SDR 26.
6. Collector piping in Cell No. 2 to have similar layout to that shown for Cell No. 1. Elevations are same; distances may vary.
7. The following lagoon profiles are not shown on this sheet.
   a. MH L-5 to MH L-8
   b. Outfall from Lagoon to Plateau Creek (see Sheet 4).

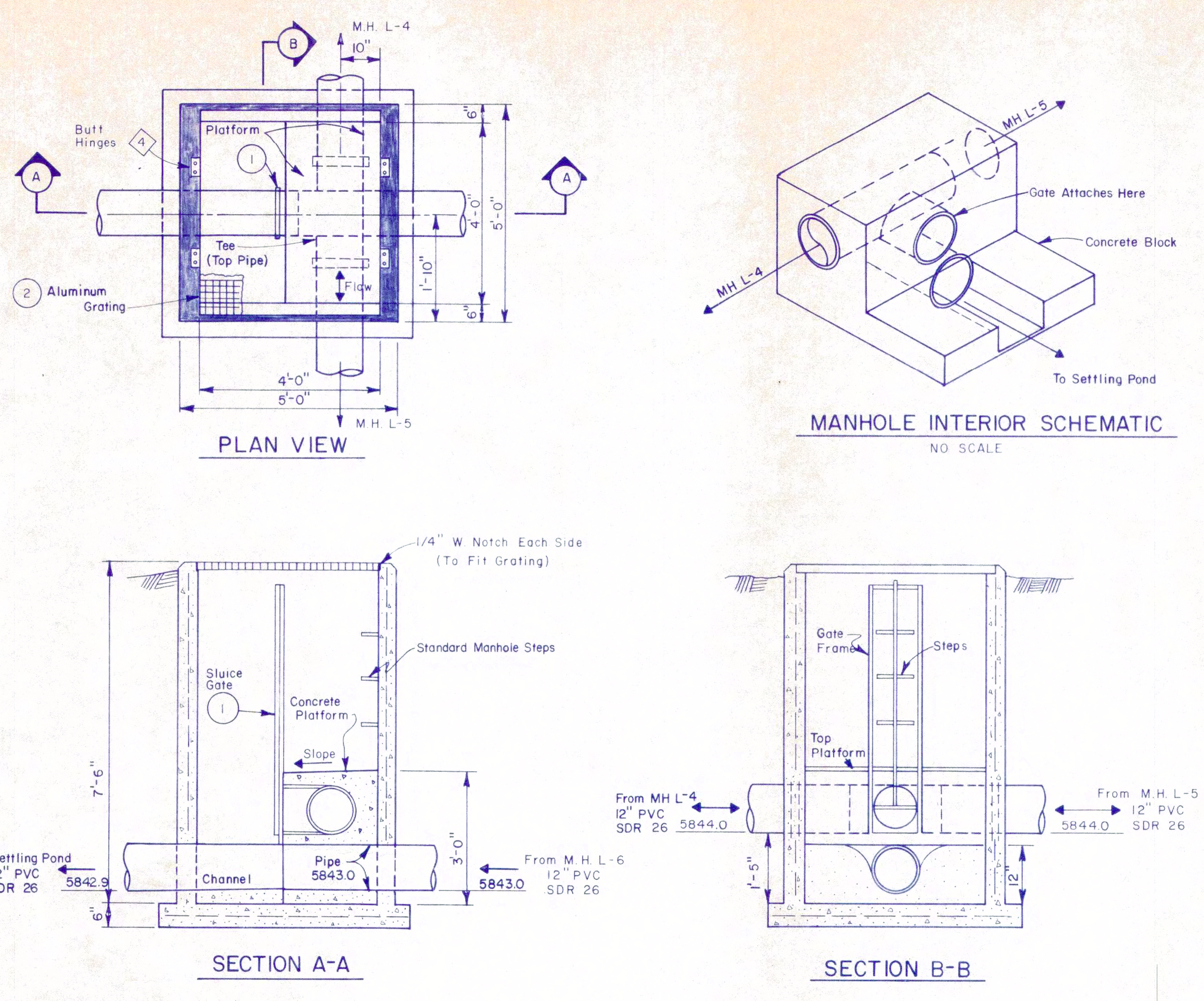
AS-BUILT
JANUARY 31, 1984 - STL

TOWN OF COLLBRAN
MESA COUNTY, COLORADO
VALLEYWIDE SEWERAGE SYSTEM
PIPE PROFILES AND FLOW DIAGRAM
AERATED LAGOON TREATMENT PLANT

WILLIAM DOUGLAS HANNA REGISTERED 9914 STATE OF COLORADO

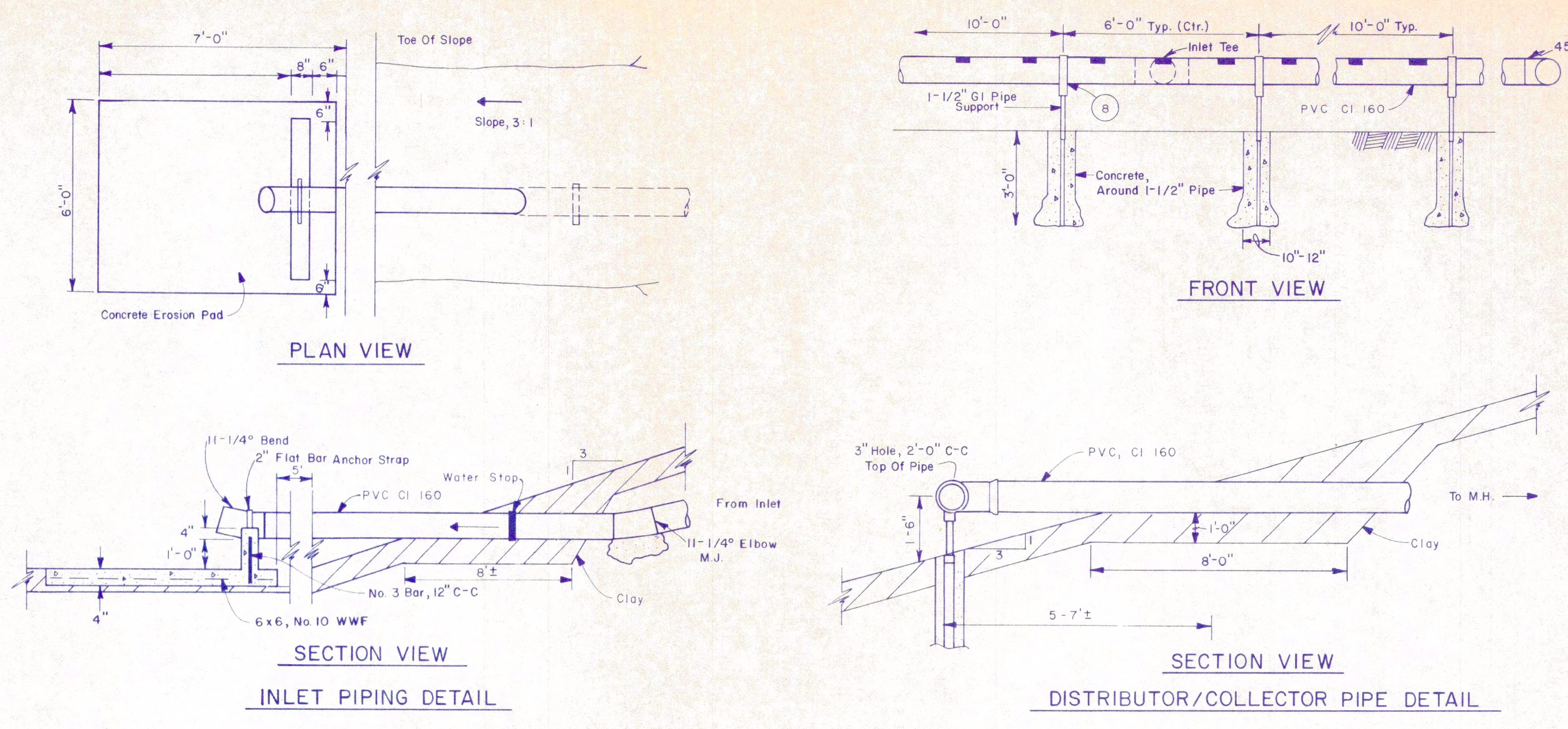
WestWater Engineering
P.O. Box 1470
Palisade, Colorado 81526

Design By	Date:	Proj. No.	Sheet
WDH	Nov. 8, 1982	8216	II-5 of 11



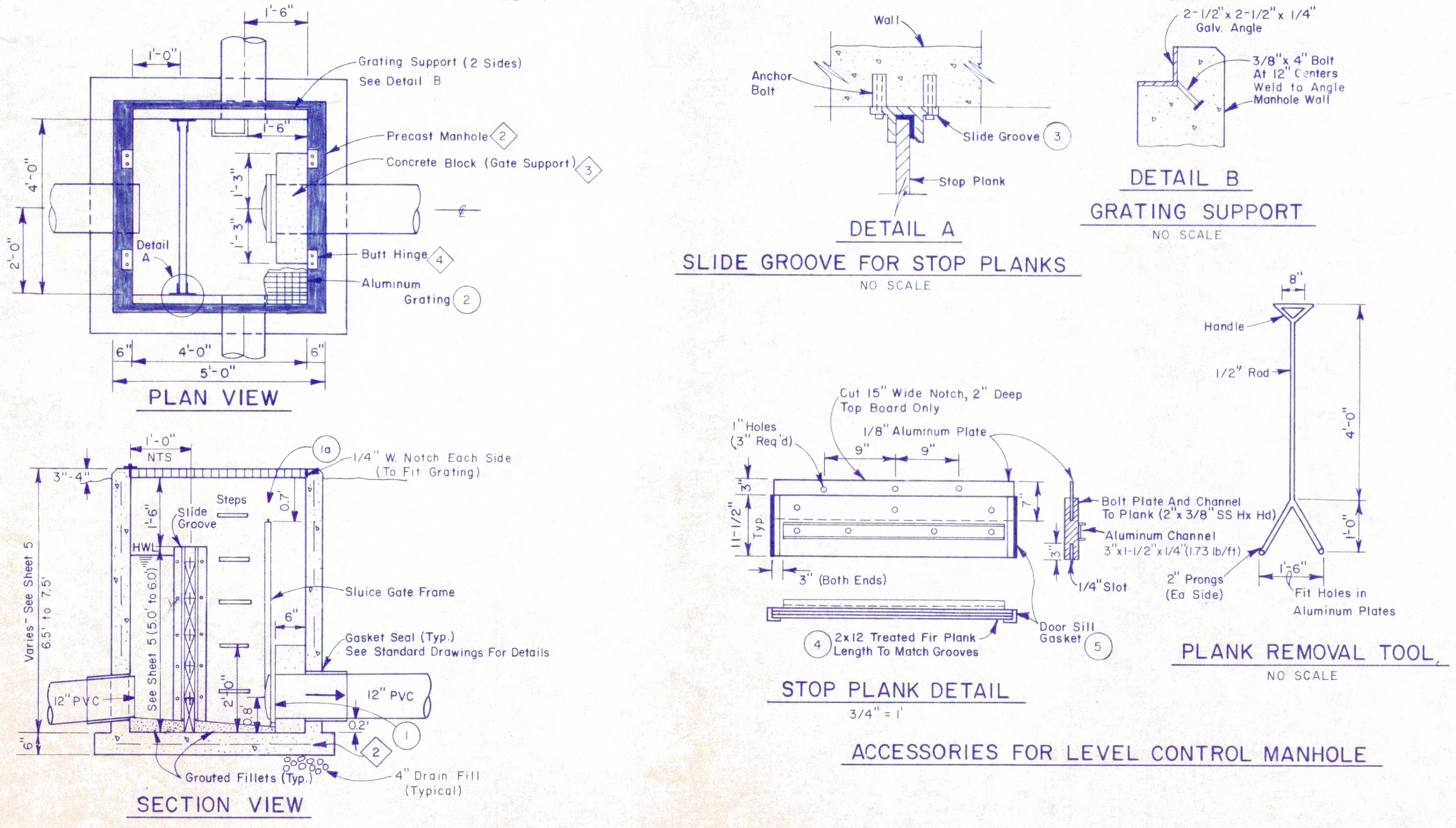
MANHOLE L-7

1/2" = 1'



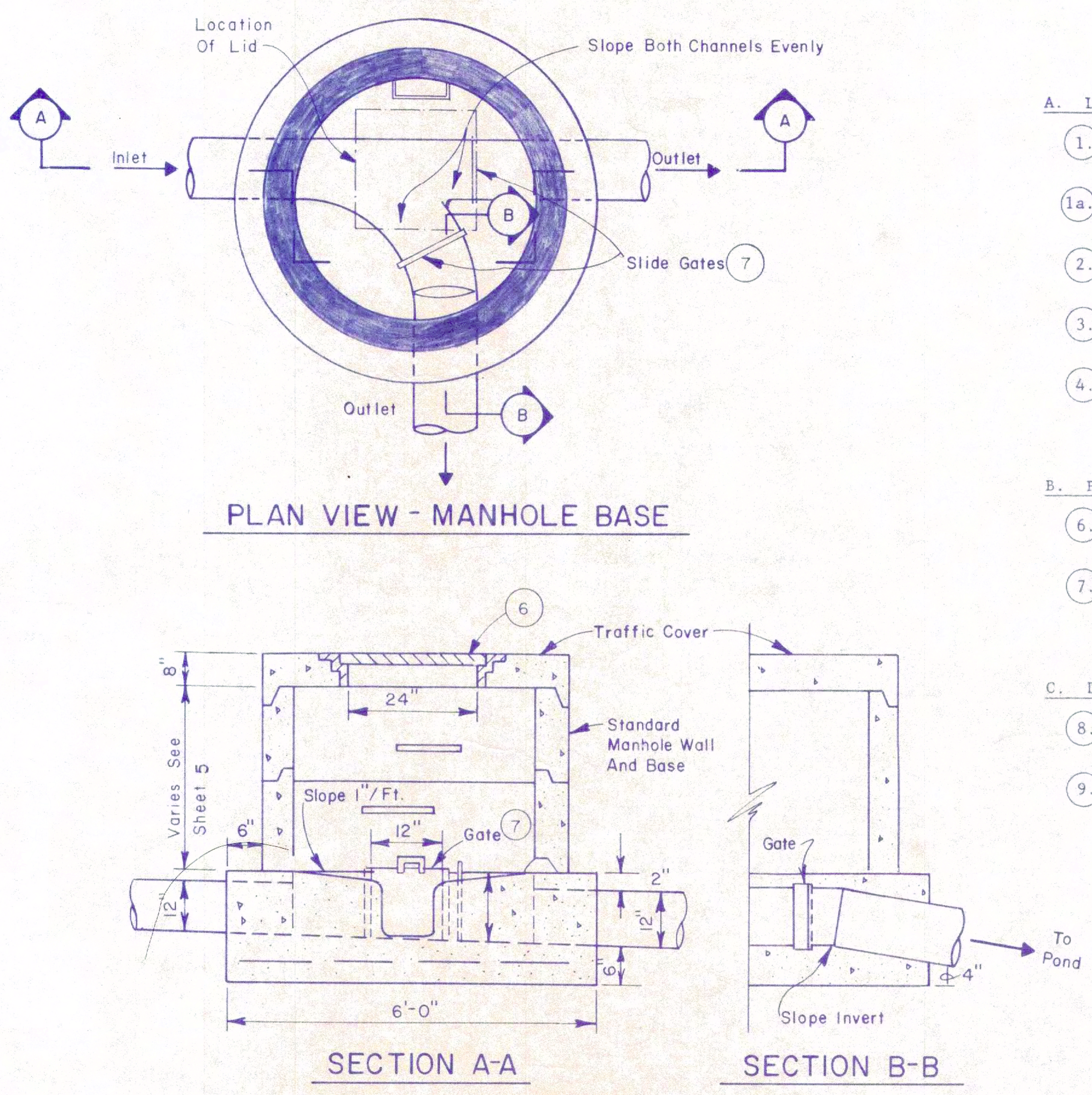
INLET AND OUTLET PIPE SYSTEMS

3/8" = 1'



LEVEL CONTROL MANHOLE AND ACCESSORIES (L4, L5, L6 & L8)

1/2" = 1'



FLOW DIVIDER MANHOLE

1/2" = 1'

SHEET 6

EQUIPMENT LIST

A. LEVEL CONTROL MANHOLE

(1.) Sluice Gate, Waterman C-20f (flatback) 12" Bronze Seats, with Stem and Frame. See Gate Schedule, Sheet 5

(1a.) (Not Shown) Waterman Non-Rising Extension to fit C-20 Sluice Gate. Total length - 4'; construct to be portable (two required).

(2.) Grating, Aluminum, anti-skid surface; IKG Industries Irving "I Bar", 1½" Depth, W: 2'0-1/16" Lg: 4'5"

(3.) Slide Groove, C.I., 1-3/4" wide x 2" deep (bolt to wall), Neenah Foundary R-7500, Type L (Alternate: Recess Type A in wall during concrete pour).

(4.) Pressure Treated Wood Planks, 2x12, No. 2, K.D.

B. FLOW DIVIDER MANHOLE

(6.) Hinged Lid, Cast Iron, 24"x24", Tee Hinge, Ring Handle, Cam lug locking device, Neenah Foundary R-6660-2, K.H. Light Duty.

(7.) Slide Gate w/Guide Frame, Fiber reinforced polyester. Two piece embedded guide frame (one each side), flat bottom gate seal, Aluminum Handle; as manufactured by Plasti-Fab, Inc.

C. DISTRIBUTION PIPE DETAIL

(8.) Pipe Saddle, Baker 'Sure-Seal', Double Strap around Pipe. (Attaches to 1½" threaded pipe.)

(9.) End Elbows - Epoxy coated steel, with gasket (cut 90° elbow in half for two 45° elbows - coat cut end with epoxy).

CONSTRUCTION NOTES

LEVEL CONTROL MANHOLES

1. The following items will vary in individual manholes: (1) Vertical Height; (2) Pipe Layout; (3) Sluice gate location. See Sheets 4 and 5 for manhole layouts and vertical dimensions.

◇2 See Specifications for manhole construction requirements (Subsection 17.4).

◇3 Install all gated pipes 8 inches through manhole wall. Pour concrete block for gate support around manhole. Install anchor bolts during pour.

◇4 Bolt butt hinge (4"x6") with loose pin to concrete wall. Attach other flap to grating with IKG Grating Type C Saddle Clips (4 required per manhole).

AS-BUILT

JANUARY 31, 1984 - STL

TOWN OF COLLBRAN
MESA COUNTY, COLORADO

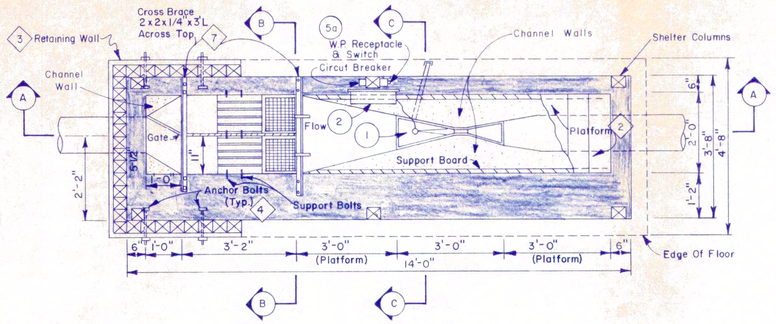
VALLEYWIDE SEWERAGE SYSTEM

MANHOLES AND FLOW CONTROL STRUCTURES
AERATED LAGOON TREATMENT PLANT

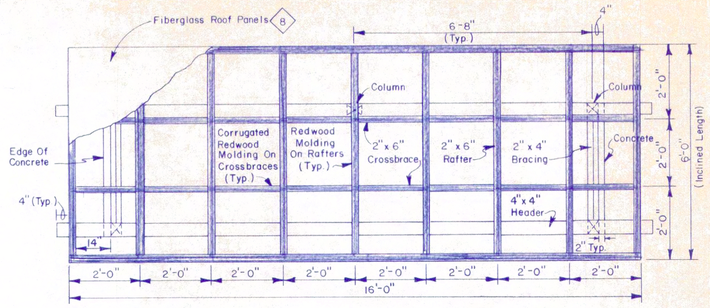
9914

WestWater Engineering
P.O. Box 1470
Palisade, Colorado 81526

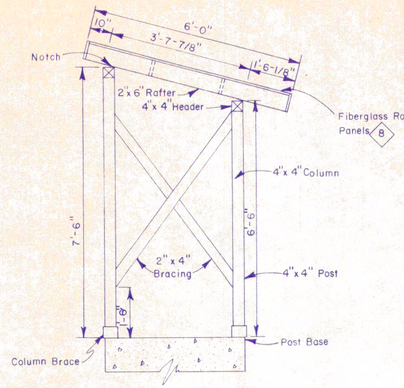
Design By	Date:	Proj. No.	Sheet
WDH	Nov. 8, 1982	8216	II-6 of 11



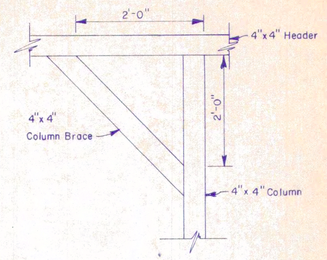
PLAN VIEW



TOP VIEW

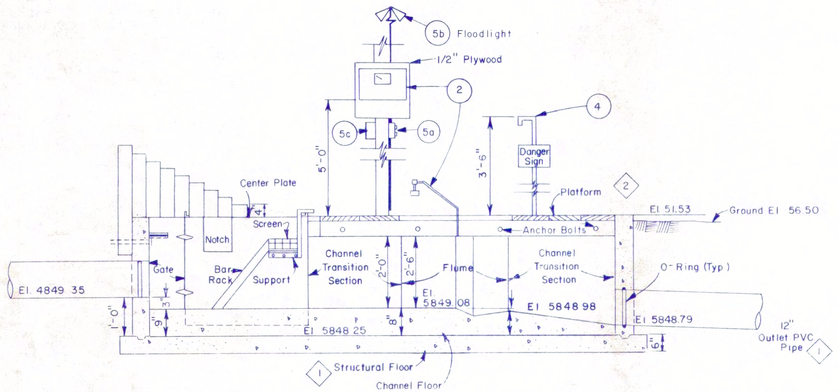


END VIEW

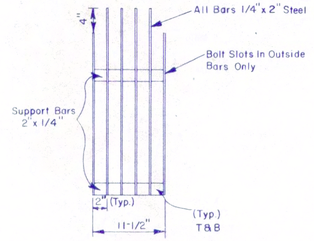


COLUMN-HEADER BRACE DETAIL
(SIDE VIEW)
NO SCALE

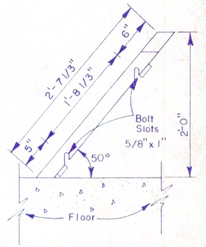
ROOF SHELTER
1/2" = 1'-0"



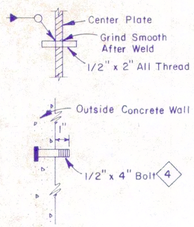
SECTION A-A



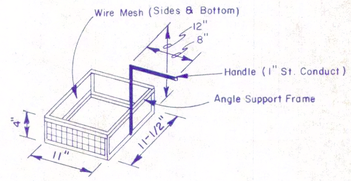
FRONT VIEW
1/2" = 1'



SIDE VIEW
1/2" = 1'

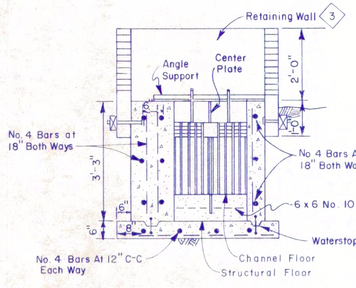


SUPPORT BOLT DETAIL
NO SCALE

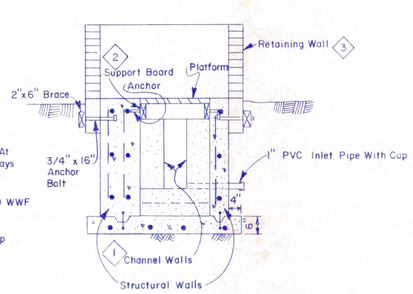


SCREENINGS BASKET DETAIL 5
1" = 1'

BAR RACK DETAIL 6

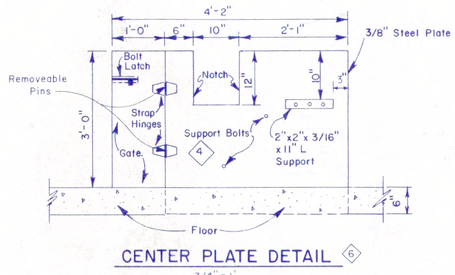


SECTION B-B

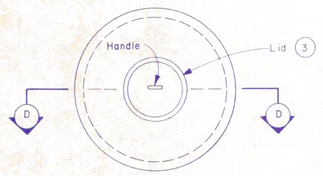


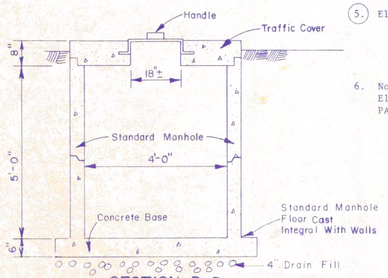
SECTION C-C

FLOW MEASUREMENT & TRASH REMOVAL
1/2" = 1'



CENTER PLATE DETAIL 6
3/4" = 1'





SECTION D-D

DIGESTER TANK FOR BAR RACK SCREENINGS
1/2" = 1'

HEADWORKS - EQUIPMENT LIST

1. Parshall flume, 3 inch, fiberglass reinforced polyester, with 1 inch threaded pipe stub (for future float well), as manufactured by Plastic-Fab. or equivalent.
2. Open channel ultrasonic flow recorder and totalizer, Manning Model UTC-2102A with 30-day strip chart recorder and 6-digit total flow counter.
3. Meter Pit Cover, Casting Inc. #M-67-20 (bolt handle to cover).
4. Frostproof hydrant, 1" Woodford Model 34, 48" burial with "Danger: Non-Potable Water" sign attached with U-bolts.
5. Electrical:
   a. Double Receptacle with switch (for light) (Weatherproof)
   b. Double Floodlight, 100W (for exterior use)
   c. Circuit Breaker LP-4, NEMA 3R
6. Not Shown: Grinder Rotocrop/Steinmark 1500 Chipper & Shredder, 2.3 HP Elec. Motor Dr., Steel Hopper (The Kinsman Co., River Rd., Pt. Pleasant, PA 18950 (1-215-297-5613).

HEADWORKS - GENERAL NOTES

(See also Section 18)

FLOW STRUCTURE

1. Pour structural floor and walls first. After forms are removed, pour and form channel floors, and channel walls. Precast pipes in walls, or block out and use PSX - Positive Seal Gasket.
2. All platform lumber is pressure treated, KD fir, 2" dimension lumber. Cut support board lengthwise so cross boards fit flush with top; then bolt to concrete. Cross boards are removable.
3. All retaining wall lumber is pressure treated KD fir. Pre-set anchor bolts in concrete.

BAR RACK AND TRAY (NOTES)

4. To locate support bolts for bar rack support, first notch bar rack and set in place. Place holes at proper places to match notches.
5. Construct screening basket with aluminum or galvanized iron wirecloth with 1" mesh on support frame of aluminum angle iron (1" x 1" x 3/16").
6. Paint all steel surfaces including bar racks as follows:
   a. Surface preparation - SSPC - SPID
   b. Coating: Coal Tar Epoxy - Tnemec System 46-30
      1 Coat of Hi-Bild Tneme Tar 14-20 mils
7. Weld center plate to angle crossbraces.

ROOF SHELTER (NOTES)

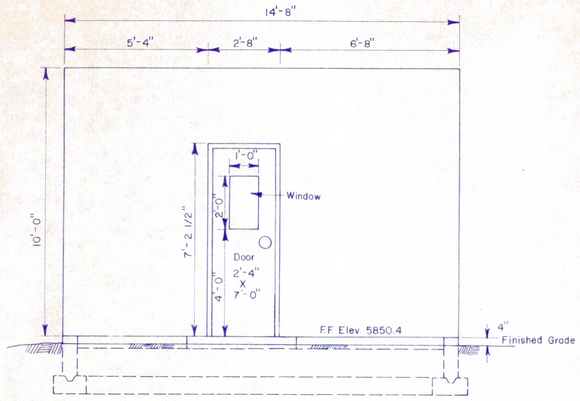
8. Fiberglass roof to be constructed of corrugated fiberglass panels, translucent, green color, 6'-0" long. Nail corrugated redwood molding on crossbraces and molding strips on rafters to support the panels.
9. All dimension lumber to be KD fir.
10. Use following connectors:
    a. Columns to floor - steel post braces
    b. Crossbraces to rafters - metal angle
    c. Rafters to headers - joist hanger
    d. Use splice plate to connect header sections.
11. Paint all exposed wood surfaces on roof shelter with white exterior paint.

AS-BUILT
JANUARY 31, 1984 - STL

TOWN OF COLLBRAN
MESA COUNTY, COLORADO
VALLEYWIDE SEWERAGE SYSTEM
HEADWORKS: PRETREATMENT AND FLOW RECORDER
AERATED LAGOON TREATMENT PLANT

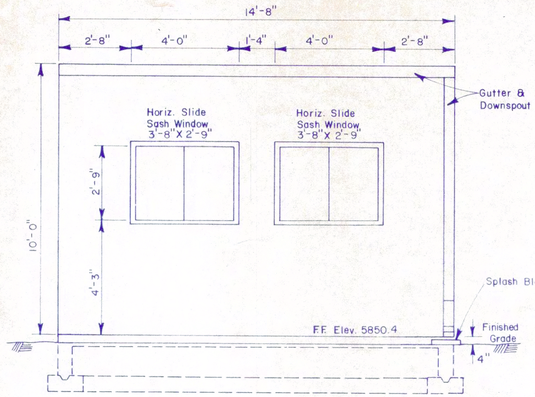
WestWater Engineering
P.O. Box 1470
Palisade, Colorado 81526

Design By	Date:	Proj. No.	Sheet
WDH/STL	Nov. 8, 1982	8216	II-7 of 11



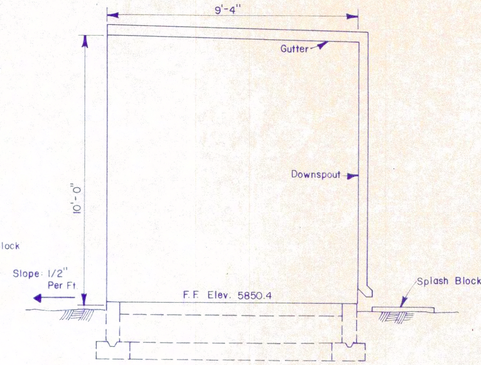
FRONT (NORTH) ELEVATION VIEW

SCALE: 3/8"=1'-0"



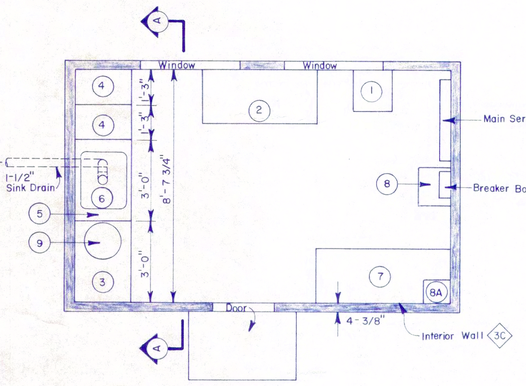
BACK (SOUTH) ELEVATION VIEW

SCALE: 3/8"=1'-0"



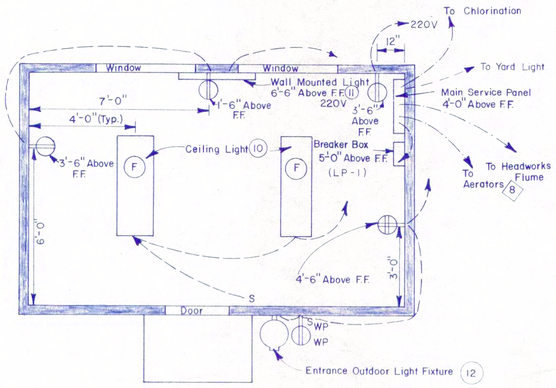
TYP. SIDE (EAST-WEST) ELEVATION VIEW

SCALE: 3/8"=1'-0"



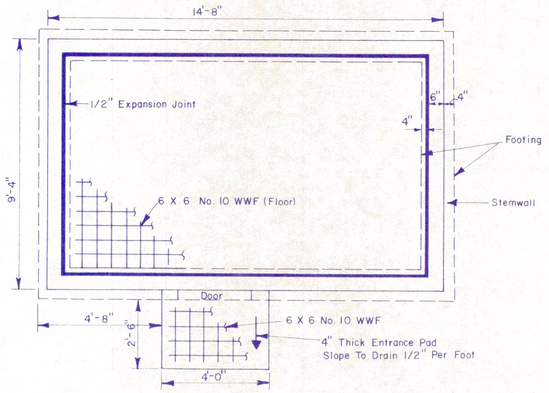
FURNITURE PLAN

SCALE: 3/8"=1'-0"



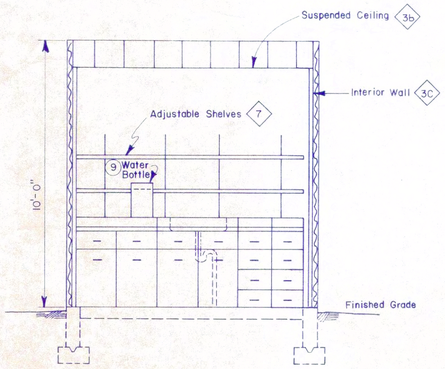
ELECTRICAL PLAN

SCALE: 3/8"=1'-0"



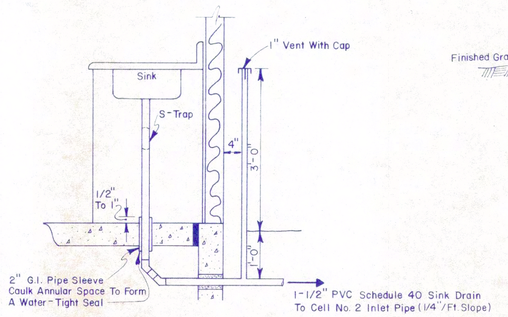
FOUNDATION PLAN

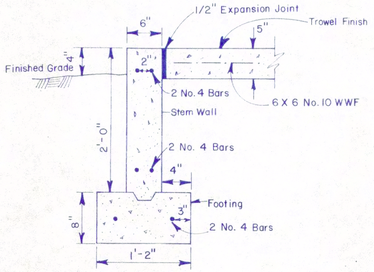
SCALE: 3/8"=1'-0"



SECTION A-A

SCALE: 3/8"=1'-0"





LAB BUILDING FURNITURE AND ACCESSORIES

1. Refrigerator, 1.74 cubic foot, with freezer section, Sears #46 K 91172 N
2. 54"x24" Steel Desk, Sears #3 K 77053 N with Desk Chair, Sears #3 K 7522 N
3. Two-Door Base Unit 36" width, Sears #65 K 54378 N with 36" Counter Top, Sears #65 K 7936 N
4. Four-Drawer Base Unit 15" width, Sears #65 K 54298 N with 30" Counter Top, Sears #65 K 7934 L (two Base Units required)
5. Sink Base Unit 36" width, Sears #65 K 54388 N with Sink Counter Top with Cutout measuring 24-3/8" x 21-3/8", Sears #65 K 7936 N
6. Sink Basin S.S. 21" x 15-3/4" x 6", Sears #65 K 8801 L (filler plugs in sink faucet holes)
7. Workbench, 24" deep x 60" wide with shelves top and bottom, Grainger Cat. #7W061.
8. Floor Mounted Heater, Dayton Stock No. 3E039, 3 kw, 240V w/Thermostat, 6-foot cord and plug
8a. Portable Heater, Titan Model T770, 1300/1500W/120V
9. Carboys (Water Container) 5¼ gal., Rectangular, with Spigot, Hach Chemical Stock No. 20980-80 (3 required)

LAB BUILDING LIGHT FIXTURES

10. Ceiling fluorescent light fixture, commercial wrap-around type (with diffuser), 4-tube, 40-watt ea., 4-foot fixture; Rapid Start (Grainger #3V369) (2 required) (Dayton Watt Trimmer)
11. Wall mounted fluorescent bracket fixture, with on-off switch on diffuser; 2-tube, 40-watt ea. (Grainger #2V310) (Dayton)
12. Entrance outdoor light fixture, 100-watt, weatherproof (Grainger #2V067) (AFCO)

LAB BUILDING GENERAL NOTES

1. See Section 12 of Specifications for general building specifications.
2. Building to be Prefab, Metal, Armco Tec Line-1; Dimension - 9'4" W., 14'-8" L., 10'-0" H., w/door and windows as shown.
3. Interior Finish:
   a. Building Insulation to be minimum R-10 for walls; R-13 for ceiling.
   b. Ceiling to be finished with ½" dry wall fastened to Rigidlock or Chicago 6640 Suspended Ceiling or equivalent.
   c. Cover all interior walls with ¼" dry wall fastened to 7/8" dry wall channel or Hat channel.
   d. Interior walls and ceiling to be painted with interior white paint.
4. Building exterior wall color to be Slate Blue.
5. See Section 11 of Specifications for building electrical specifications.
6. All interior electrical conduit to be run inside of dry wall.
7. Shelves to be 3/4" x 12" No. 2 Pine, with walnut stain and urethane varnish, supported on steel channel support screwed to wall.
8. See Summary Sheet in Standard Drawings Section for size of feeder cables to subsystem.

AS-BUILT

JANUARY 31, 1984 - STL

TOWN OF COLLBRAN
MESA COUNTY, COLORADO

VALLEYWIDE SEWERAGE SYSTEM

LABORATORY BUILDING AND ACCESSORIES

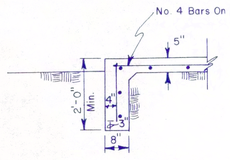
AERATED LAGOON TREATMENT PLANT

WILLIAM DOUGLAS HAMILTON 9914 REGISTERED PROFESSIONAL ENGINEER STATE OF COLORADO

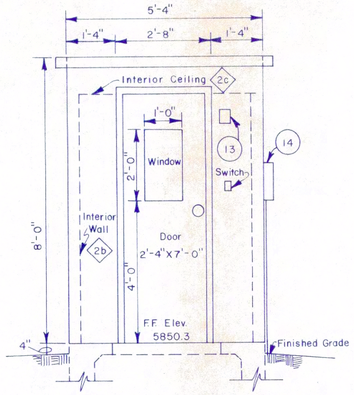
WestWater Engineering

P.O. Box 1470
Palisade, Colorado 81526

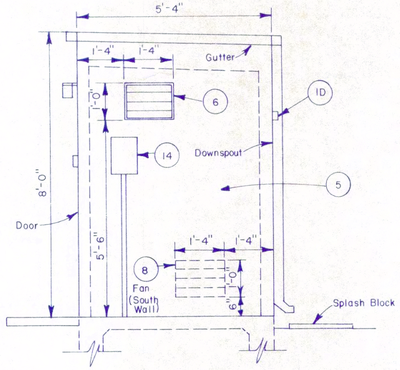
Design By	Date:	Proj. No.	Sheet
WDH/STL	Nov. 8, 1982	8216	II-8 of 11



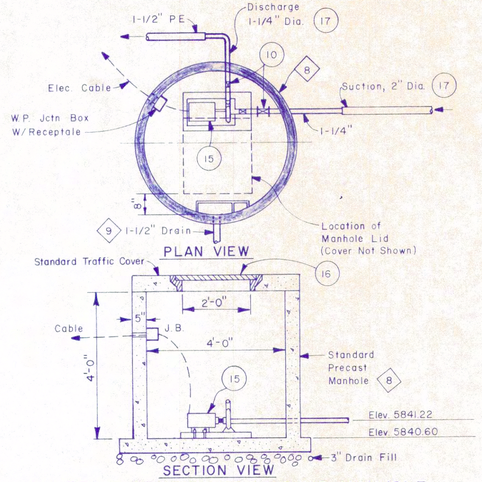
FOUNDATION DETAIL



FRONT ELEVATION VIEW



SIDE ELEVATION VIEW

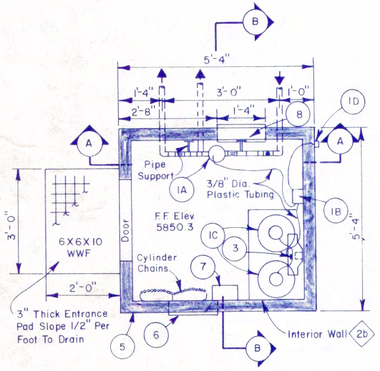


CHLORINE RECIRCULATION PUMP MANHOLE

SCALE: 1/2"= 1'-0"

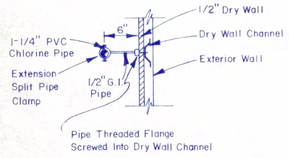
CHLORINE BUILDING DESIGN

SCALE: 1/2"= 1'-0"



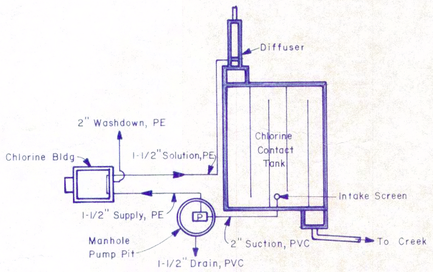
PLAN VIEW

SCALE: 1/2"= 1'-0"

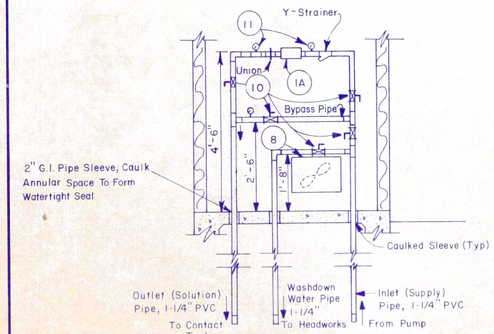


PIPE SUPPORT DETAIL

NO SCALE

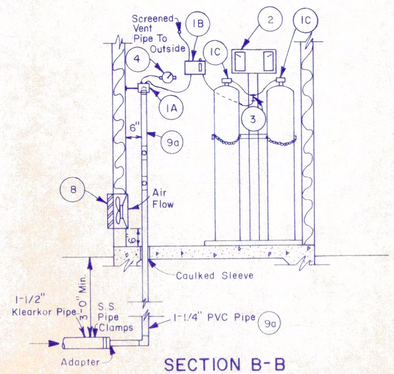


FLOW SCHEMATIC



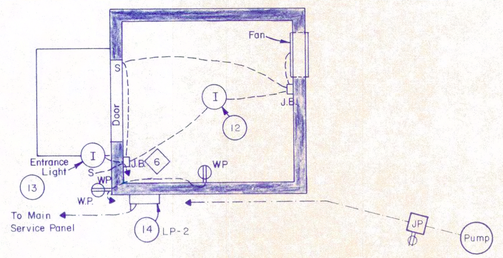
SECTION A-A

CHLORINATION PIPING



SECTION B-B

CHLORINATION SYSTEM



ELECTRICAL PLAN

SCALE: 1/2"= 1'-0"

CHLORINE METERING AND PIPING SYSTEM

SCALE: 1/2"= 1'-0"

CHLORINATION FEED EQUIPMENT

1. Gas chlorination control unit package for 150# gas cylinder; Regal Model 415 Control Unit Package (Control unit w/rotameter Injector, plastic tubing and pipe, fittings) (cylinder unit, tubing, gaskets):
   - A. Injector - Model 415
   - B. Control Unit with 5 lb/day rotameter
   - C. Cylinder Unit (2 required)
   - D. Vent Screen, 5'-6" Above Finished Floor
2. Two-Cylinder Platform Scale with integral safety chains, Wallace and Tiernan Series 50-345
3. Manifold Tee, with union connections for 3/8" O.D. Tubing (attach to scale post with brackets)

METAL BUILDING WITH APPURTENANCES

5. Metal Building, Armco Tec Line-1, all steel, Prefab, 5'4" W, 5'4" L, 8'0" H w/door
6. Screened Single Panel Fresh Air Intake Shutter w/fixed louvers, 5'-6" above Finished Floor (F.F.)
7. Portable Radiant Heater; 1300/1500W Automatic Thermostat; Titon Model T770, Heater, Grainger Cat. #5H500
8. 16" Diameter Panel Fan, 1/20 HP Grainger Cat. #2C995, 6" above Finished Floor with Screened Single Panel Shutter with Automatic Louvers, Grainger Cat. #4C112

RECIRCULATION PIPE AND FITTINGS

9. Pipe Schedule (size as noted)
   - a. All piping in building - PVC, Schedule 80, Solvent Weld Joint
   - b. Buried supply, solution and washdown line - Polyethylene, Klearkor 100 psi

   Note: Connect PVC to Klearkor outside building with adapter. Inside building provide one union for each valve, injector and wye strainer.
10. Ball Valve PVC, Cartridge Type (Union End Connections). Size as noted.
11. 30 psi Bronze Pressure Gauges (2 required) with Snubber and Petcock.

CHLORINATION BUILDING ELECTRICAL FIXTURES

12. 75-watt ceiling light with vaportight receptacle
13. Outdoor entrance light fixture, 100-watt weatherproof (Grainger Cat. #2V067) (AFCO)
14. Circuit Breaker, NEMA 4 Box, 60 amp main breakers, four 15 cmp circuit breakers

PUMP AND PUMP SUMP

15. Centrifugal Pump, 1/3 HP, 120 V, Peerless Model 33C, 1¼" Suction, 1¼" Discharge
16. Manhole Lid - Square, hinged, C.I., 24" Opening Neenah Foundary, #R6660-2 KH Light Duty
17. Pipe Schedule: All pipe inside manhole and through walls, plus suction line and drain line to be PVC, Schedule 80 with solvent weld joints.

SHEET 9-CONSTRUCTION NOTES

BUILDING CONSTRUCTION

1. See Section 12 for additional requirements on metal building construction.
2. Interior finish to be as follows:
   - a. Building Insulation to be minimum R-10 for walls; R-13 for ceiling.
   - b. Interior walls to be finished with ½" dry wall fastened to 7/8" Dry Wall or Hat channel.
   - c. Ceiling to be finished with ½" dry wall fastened to Rigidlock or Chicago 6640 Suspended Ceiling or equivalent.
   - d. Interior walls and ceiling to be painted with interior white paint.
3. Exterior wall color to be Slate Blue.

ELECTRICAL

4. See Section 18.9 of Specifications for building electrical specifications. Dashed lines with arrows designate wiring layout.
5. All interior electrical conduit to be run inside of dry wall.
6. Door switch and outside wall switch control fan, interior light, and outside light. Switches to be wired in parallel such that wall switch operates independently of door switch.

PUMP SYSTEM

7. Seal pipe holes with grout for watertight seal.
8. Manhole to have floor precast monolithically with floor.
9. Carry drain pipe to daylight. Clamp ½" Screen on end.

AS-BUILT

JANUARY 31, 1984 - STL

TOWN OF COLLBRAN
MESA COUNTY, COLORADO

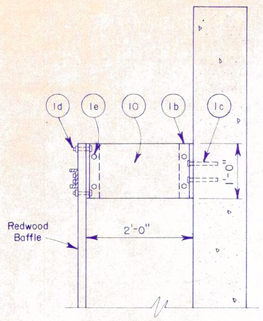
VALLEYWIDE SEWERAGE SYSTEM

CHLORINATION EQUIPMENT

AERATED LAGOON TREATMENT PLANT

WestWater Engineering
P.O. Box 1470
Palisade, Colorado 81526

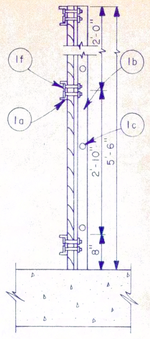
Design By	Date:	Proj. No.	Sheet
WDH	Nov. 8, 1982	8216	II-9 of 11



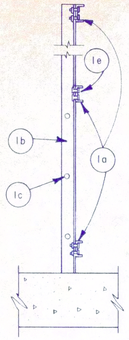
SECTION J-J

SCUM BAFFLE DETAIL

SCALE: 3/4"= 1'-0"



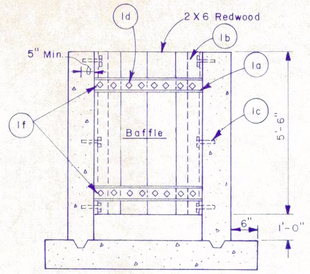
SECTION D-D



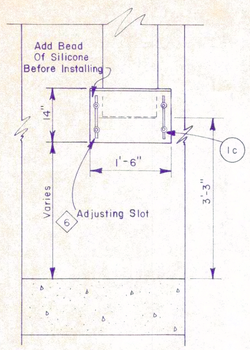
SECTION E-E

CHLORINE TANK BAFFLE DETAILS (TYP.)

SCALE: 3/4"= 1'-0"

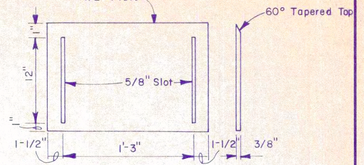


SECTION A-A



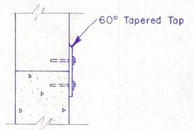
SECTION G-G

WEIR DETAIL



WEIR PLATE DETAIL

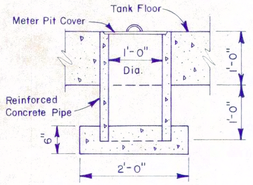
SCALE: 1/2"= 1'-0"



DETAIL C

OVERFLOW CHANNEL AND WEIR PLATE DETAILS

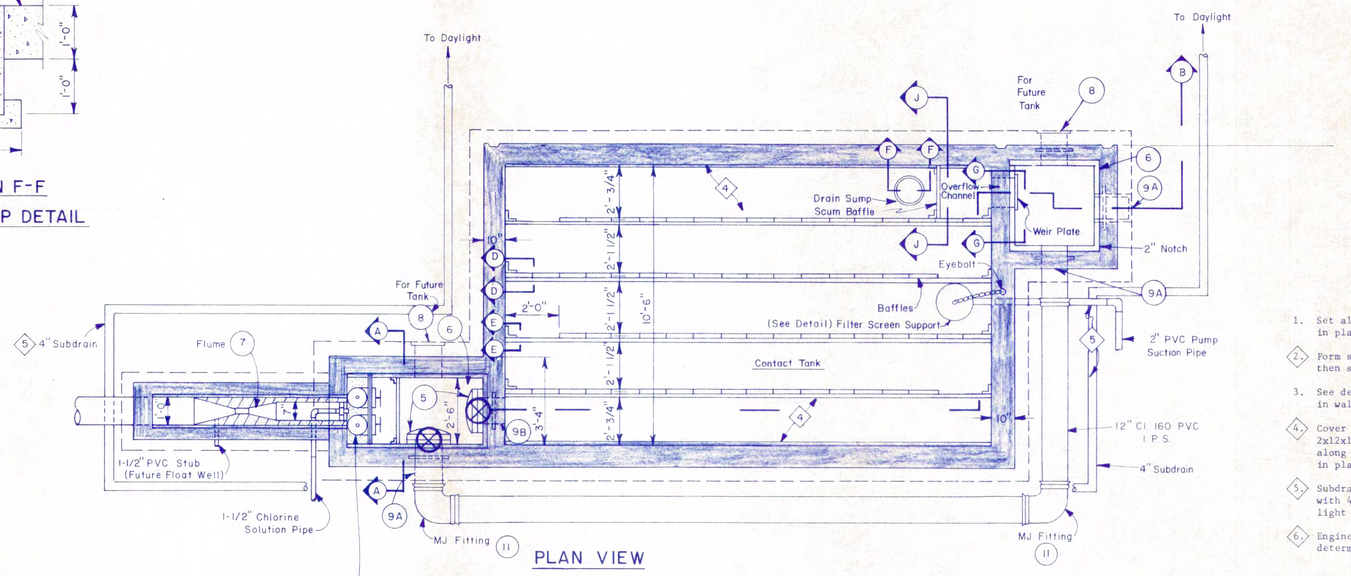
SCALE: 3/4"= 1'-0"



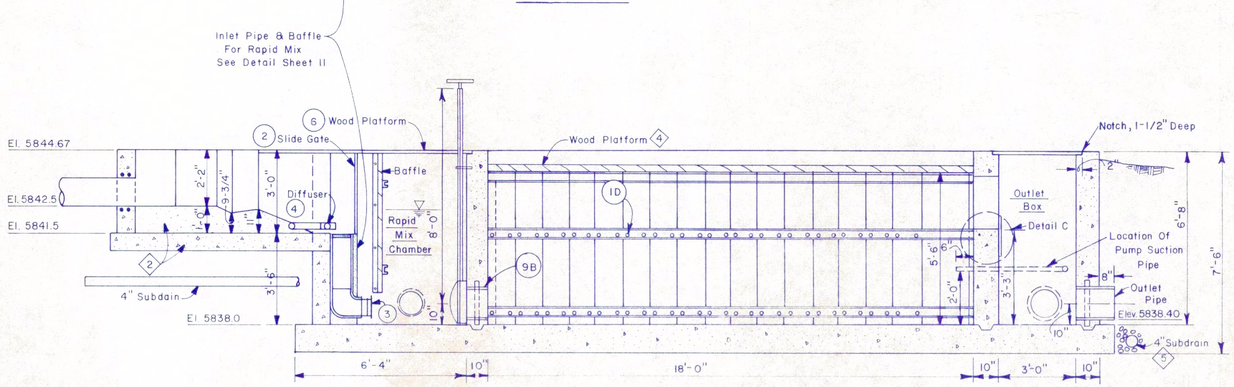
SECTION F-F

DRAIN SUMP DETAIL

SCALE: 3/4"= 1'-0"



PLAN VIEW



SECTION B-B

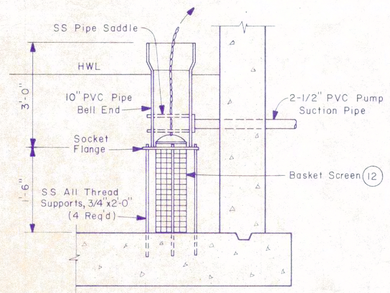
Note: See Sheet 11 For Complete Wall And Floor Dimensions. Only The Inside Dimensions And Some Wall Dimensions Shown On This Sheet.

CONSTRUCTION NOTES

1. Set all anchor bolts 5" minimum into wall. Either cast in place or use expansion bolts.
2. Form structural walls and floor for Parshall Flume first; then set flume and grout sides and bottom.
3. See detail Sheet 11 for placing small diameter PVC pipe in walls.
4. Cover contact tank with pressure treated planks, 2x12x10'6". Place aluminum channel (Materials List #1a) along each side to match top of baffles. Leave opening in planks for filter screen.
5. Subdrain to consist of 4" perforated plastic pipe (S&D) with 4" annular layer of 3/4" washed rock. Carry to day light - Clamp ½" screen on end.
6. Engineer to locate anchor bolts for weir plate, and determine weir height.

MATERIALS LIST

1. Support Hardware for Baffles in Contact Tank:
   a. Aluminum Channel, American Std., 4"xl.720"x.320
   b. Aluminum Angle, 3"x3"x3/8"x(two per baffle)
   c. Anchor Bolts - 3/4" Dia. S.S. (three per angle)
   d. S.S. Fastener Bolt with Nut and Washer - Baffle to Channel - 3/8"x2½"
   e. S.S. Fastener Bolt with Nuts and Washer - Channel to Angle - 3/8"xl½"
   f. S.S. Fastener Bolt with Nuts and Washer - Baffle - Channel - Angle - 3/8"x3"
2. Aluminum or Fiberglas Slide Gate similar to Neenah R-7501 Series, 3/8" Plate, 2'8" Wide x 3'0" High. Reinforce with 2"x2"x1/8"x2'4" (3 required) placed horizontally across back. Embed slide grooves in sides and base when concrete is poured. Handle on top.
3. Waterman Overflow Riser Valve, 8", "Red top" (2 required) (Plastic Pipe Model).
4. Diffuser, 1½" Perforated PVC Pipe (Engineer to provide design).
5. Sluice Gate, Waterman C-20, 12" Dia., Flat back, 8' High Frame, Bronze Seating Face, Rising Stem, SS Stem and Anchor bolts.
6. Platform Boards, Pressure Treated KD Fir, 2x12's (Notch for Sluice gat stems).
7. Parshall Flume, 3", Fiberglas, Plastifab or equal.
8. PE x Fl. C.I. Wall Pipe; 12" Dia. x 20" L. with Blind Fl.
9a. PE x PE C.I. Wall Pipe; 12" Dia. x 20" L.
9b. PE x PE, C.I. Wall Pipe, 12" Dia. x 12" L.
10. Aluminum Baffle - 1'x2'x3/8"
11. Use Mech. Jt. fittings, with PVC Transition gasket for PVC - I.P.S. end.
12. Basket Screen, 8" dia. x 20" H, St. St. # 60 mesh(Hayward Mfg. Co)



FILTER SCREEN SUPPORT DETAIL

CHLORINE CONTACT TANK WITH DIFFUSER AND RAPID MIX UNITS

SCALE: 3/8"= 1'-0"

AS-BUILT

JANUARY 31, 1984 - STL

TOWN OF COLLBRAN
MESA COUNTY, COLORADO

VALLEYWIDE SEWERAGE SYSTEM

CHLORINE MIXING AND CONTACT TANKS

AERATED LAGOON TREATMENT PLANT

WILLIAM DOUGLAS HUMPHREYS 9914 REGISTERED PROFESSIONAL ENGINEER STATE OF COLORADO

WestWater Engineering

P.O. Box 1470
Palisade, Colorado 81526

Design By	Date:	Proj. No.	Sheet
WDH	Nov. 8, 1982	8216	II - 10 of 11

Appendix D

CDPHE
General Permit

CDPS GENERAL PERMIT COG591000
DOMESTIC WASTEWATER TREATMENT PLANTS
THAT DISCHARGE TO RECEIVING WATERS THAT ARE UNCLASSIFIED; USE PROTECTED; REVIEWABLE; OR ARE DESIGNATED THREATENED AND ENDANGERED SPECIES HABITAT

AUTHORIZATION TO DISCHARGE UNDER THE
COLORADO DISCHARGE PERMIT SYSTEM (CDPS)

In compliance with the provisions of the Colorado Water Quality Control Act (25-8-101 et. seq. CRS, l973 as amended), and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.; the "Act"), domestic wastewater treatment plants, with a design hydraulic capacity of less than one million gallons per day, are authorized to discharge from approved locations throughout the State of Colorado to waters of the state that are considered unclassified, use protected, reviewable, or are discharging to waters designated as threatened and endangered species habitat. Such discharges shall be in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, and III hereof. All discharges authorized herein shall be consistent with the terms and conditions of this permit.

This permit specifically authorizes the entity identified in the certification of this permit to discharge from their domestic wastewater treatment plants, at the location described in the certification of this permit, to waters of the state as identified in the certification of this permit.

The authorization to discharge under this permit is in effect from the date of the certification of this permit until the expiration date identified below.

This permit and the authorization to discharge shall expire at midnight May 31st, 2027.

Issued and Signed this 2nd day of June, 2022.

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Meg Parish
Meg Parish, Permits Section Manager
Water Quality Control Division

PERMIT ACTION SUMMARY:
Modification #1 – Minor Modification – Issued June 2, 2022, Effective June 2, 2022 (Parts I.B.3.c and I.B.3.d)
Originally Issued April 30th, 2022; Effective June 1, 2022

TABLE OF CONTENTS

PART I

A. COVERAGE UNDER THIS PERMIT

1. **Eligibility**

In order to be eligible for authorization to discharge under the terms and conditions of this permit, the owner of any domestic wastewater treatment plant that can meet the conditions identified at Part I.A.3., below, must submit a complete permit application form obtained from the Water Quality Control Division (Division). Such application shall be submitted to the address listed on the application, at least 180 days prior to the anticipated date of first discharge.

Authorization to discharge shall be site specific and not transferable to alternative locations. Authorization to discharge will occur when the permittee receives a letter of certification for discharge under this permit, and is allowed to discharge on the effective date noted on the certification. Authorization to discharge will expire on the expiration date of this general permit, which will also be noted on the certification. A permittee desiring continued coverage under this general permit must reapply 180 days in advance of the expiration date.

Upon receipt of a new or a renewal application, the Division will determine if the applicant continues to be eligible to continue to operate under the terms of the general permit. If the Division determines that the operation does not fall under the authority of the general permit or is determined to be better suited for an individual permit, then the application received will be treated as an individual permit application, and the applicant will be notified about the decision to require an individual permit by a letter from the Division. For a renewal permit, any such applicant will continue to be covered under this general permit until such time as their application to discharge under another applicable general permit or individual permit is issued or denied by the Division.

2. **Application Requirements**

The application referenced in Part I.A.1., above, will require the following information:

a. The name, address, and location information of the municipality/company and its domestic wastewater treatment plant along with an accompanying USGS map, or a map of similar quality and sufficient detail to show the location of all unit processes on the property, and location of effluent discharge point and receiving water;

b. The name, address, and phone number of the owner and of the certified operator in responsible charge;

c. The name of water(s) receiving the discharge(s) and a listing of any downstream waters into which the receiving stream flows within five miles of the point of discharge;

d. The latitude and longitude of the proposed discharge outfall or outfalls;

e. A United States Geological Survey (USGS) map, or a map of similar quality, which shows the service area for the domestic wastewater treatment plant;

f. A list of non-residential users (commercial users, including hauled septage from Individual Sewage Disposal Systems (ISDSs), and industrial users) whose waste is treated by the facility;

g. A description of the method(s) and chemicals used for treatment and/or disposal of grit, screenings, and sludge (biosolids);

h. A summary of recent flow, loading, and influent and effluent quality data along with a description of the operation and management procedures to be used at the domestic wastewater treatment plant;

i. A description of the analytical methods and equipment to be used to measure flows and to analyze pollutants of concern in the discharge; and,

3. **Certification Requirements**

The applicant must certify, or the Division must find, that the following conditions exist at the domestic wastewater treatment plant or the domestic wastewater treatment plant will not be certified to discharge under the authority of the general permit:

a. The treatment plant is a domestic wastewater treatment plant as defined in Regulation No. 22 (5 CCR 1002-22): Site Location And Design Approval Regulations for Domestic Wastewater Treatment Works;

b. The domestic wastewater treatment plant is 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;

c. The domestic wastewater treatment plant does not accept any hazardous waste as defined at Part 261 of the Solid and Hazardous Waste Commission's Regulations (6 CCR 1007-3) for treatment and discharge by truck, rail, or dedicated pipeline;

d. Design Capacity: The rated design capacity of the wastewater treatment works must be less than 1.0 Millon Gallons per Day (MGD);

e. The facility is a domestic wastewater treatment facility discharging to at least one of the following: 1) an unclassified water; 2) a use protected water; 3) a reviewable water; or 3) a water that has been designated as threatened and endangered species habitat (including an area within the associated 100-year flood plain).

f. The discharge to an unclassified water must not return flow to a classified water that has an Outstanding Water designation.

B. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. **Limitations, Monitoring Frequencies, and Sample Types for Effluent Parameters**

In order to obtain an indication of the probable compliance or non-compliance with the effluent limitations specified in Part I.B, the permittee shall monitor all effluent parameters at the frequencies and sample types, as identified in the certification of this permit. Such monitoring will begin immediately and last for the life of the permit unless otherwise noted. The results of such monitoring shall be reported on the Discharge Monitoring Report form (See Part I.E).

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 or potentially mixing with or influenced by other waters, unless otherwise specified in the certification. Any discharge to the waters of the State from a point source other than specifically authorized by this permit is prohibited.

If the permittee, using an approved analytical method, monitors any parameter more frequently than required by this permit, then the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form (DMRs) or other forms as required by the Division. Such increased frequency shall also be indicated.

a. Flow Recording Device - Treatment facilities are typically required to have both influent and effluent flow measuring and recording devices. 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 treatment facility or flow metering by some other means. For these facilities, influent and/or effluent flow measuring and sampling type will be specified in the certification. If only one

device is applicable, then that device will be used to report both influent and effluent flow. Reported flows will be used to monitor compliance with the effluent flow limitation and hydraulic loading to the plant.

b. Percentage Removal Requirements (BOD_5 and TSS Limitations) - If noted in the limits table(s), the arithmetic mean of the BOD_5 and TSS concentrations for effluent samples collected during the DMR reporting period shall demonstrate a minimum of eighty-five percent (85%) removal of both BOD_5 (or $CBOD_5$), and TSS, as measured by dividing the respective difference between the mean influent and effluent concentrations for the DMR monitoring period by the respective mean influent concentration for the DMR monitoring period, and multiplying the quotient by 100. Percent removal for TSS for lagoon facilities is waived in accordance with Regulation 62.5(3). 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.

c. Oil and Grease Monitoring: For every outfall with oil and grease monitoring, in the event an oil sheen or floating oil is observed, a grab sample shall be collected and analyzed for oil and grease, and reported on the appropriate DMR under parameter 03582. In addition, corrective action shall be taken immediately to mitigate the discharge of oil and grease. A description of the corrective action taken should be included with the DMR.

d. Total Residual Chlorine: Monitoring for TRC is required only when chlorine is in use.

e. Metals: Metals concentrations measured in compliance with the effluent monitoring requirements listed in Part I.A of this permit may be used to satisfy any industrial waste management metals monitoring requirements listed in Part I.C.12, if the metals are in the same form (i.e. total). Sampling must be conducted in accordance with Part I.C.12.

f. Additional or Alternate Limitations: The certification may include limitations or monitoring requirements for any pollutant(s) based on site specific considerations including but not limited to: inclusion on the 303(d) or Monitoring and Evaluation List in Regulation No. 93; an approved TMDL with a waste load allocation; an approved Discharger Specific Variance (DSV); compliance with any Division compliance order on consent, cease and desist order, or an EPA administrative order, or similar decree promulgated by the Division, EPA or any other public entity. The limitations and monitoring requirements will vary depending on the parameter, and will be fully enforceable under this permit.

g. Salinity Parameters: Regulation 61.8(2)(l) contains requirements regarding salinity for any discharges to the Colorado River Watershed. For discharges tributary to the Colorado River Basin, the permittee shall monitor the raw water source and the wastewater effluent at the frequencies identified in the appropriate table below. The results are to be reported on the Discharge Monitoring Report.

Self-monitoring samples taken in compliance with the monitoring requirements specified above shall be taken prior to treatment of the raw drinking water source (with a composite sample proportioned to flow prepared from individual grab samples if more than one source is being utilized), and at the established domestic wastewater treatment plant effluent sampling point identified in the certification and in Part I.B of this permit.

In accordance with the Water Quality Control Commission Regulations for Effluent Limitations and the Colorado Discharge Permit System Regulations, Section 61.8(2), the permitted discharge shall not contain effluent parameter concentrations, which exceed the limitations for the facility types listed below in Parts I.B.2, I.B.3, I.B.4 or I.B.5.

2. **Discharges to Unclassified Waters**

The following effluent limitations, listed in Part I.B.2, Tables 1a-1d will apply to discharges to unclassified waters where there is no return flow to a classified water of the state. Footnotes for Tables 1a – 1d are defined following Table 1d.

In accordance with the Water Quality Control Commission Regulations for Effluent Limitations, Section 62.4, and the Colorado Discharge Permit System Regulations, Section 61.8(2), the permitted discharge shall not contain effluent parameter concentrations, which exceed the following limitations:

Table 1a

Mechanical Facilities with Design Flows Less Than 0.25 MGD Discharging to Unclassified Waters

ICIS Code	Parameter	Limitation			Sampling	
		30-day Avg.	7-day Avg.	Daily Max	Frequency [1]	Type [2]
50050	Flow, MGD [3]	TBD		Report	Continuous [4]	Recorder [4]
00310	BOD_5, mg/l [5]	30	45		Monthly	Composite
81010	BOD_5, percent removal [5, 6]	85% (min)			Monthly	Calculated
00530	Total Suspended Solids, mg/l	30	45		Monthly	Composite
81011	TSS, percent removal [6]	85% (min)			Monthly	Calculated
50060	Total Residual Chlorine, mg/l			0.5	Weekly	Grab
00400	pH, s.u.			6.0-9.0	Weekly	Grab
84066	Oil and Grease, mg/l			Report	Weekly	Visual
03582	Oil and Grease, mg/l			10	Contingent	Grab
51040	*E. coli*, #/100 ml [7]	2,000	4,000		Monthly	Grab
00610	Total Ammonia, mg/l as N	Report		Report	Monthly	Composite
00665	Total Phosphorous, mg/l [8]	TBD		TBD	Monthly	Composite
00665	Total Phosphorous, lbs/month [8]	Report		Report	Monthly	Calculated
00665	Total Phosphorous, cumulative lbs/previous 12 consecutive months [9]	TBD		NA	Monthly	Calculated
70295	Total Dissolved Solids, mg/l [9]	Report		Report	Quarterly	Composite
	Other Pollutants, units	TBD		TBD	TBD	TBD
	Regulation 85 or Regulation 31 Nutrients [10]	**Running Annual Median**	**95% percentile**		**Frequency**	**Type**
00665	Total Phosphorus, mg/l	See Table 7a or 7d/7e	See Table 7a		Monthly	Composite
00640	Total Inorganic Nitrogen, mg/l	See Table 7a	See Table 7a		Monthly	Composite

TBD means to be determined for each certification.

Table 1b						
Mechanical Facilities with Design Flows Greater Than 0.25 MGD and less than 1.0 MGD Discharging to Unclassified Waters						
ICIS Code	**Parameter**	**Limitation**			**Sampling**	
		30-day Avg.	**7-day Avg.**	**Daily Max**	**Frequency[1]**	**Type[2]**
50050	Flow, MGD[3]	TBD		Report	Continuous[4]	Recorder[4]
00310	BOD_5, mg/l[5]	30	45		Weekly	Composite
81010	BOD_5, percent removal[5, 6]	85% (min)			Weekly	Calculated
00530	Total Suspended Solids, mg/l	30	45		Weekly	Composite
81011	TSS, percent removal[6]	85% (min)			Weekly	Calculated
50060	Total Residual Chlorine, mg/l			0.5	Weekly	Grab
00400	pH, s.u.			6.0-9.0	Weekly	Grab
84066	Oil and Grease, mg/l			Report	Weekly	Visual
03582	Oil and Grease, mg/l			10	Contingent	Grab
51040	*E. coli*, #/100 ml [7]	2,000	4,000		Weekly	Grab
00610	Total Ammonia, mg/l as N[8]	Report		Report	Weekly	Composite
00665	Total Phosphorous, mg/l [8]	TBD		TBD	Monthly	Composite
00665	Total Phosphorous, lbs/month [8]	Report		Report	Monthly	Calculated
00665	Total Phosphorous, cumulative lbs/previous 12 consecutive months [8]	TBD		NA	Monthly	Calculated
70295	Total Dissolved Solids, mg/l [9]	Report		Report	Quarterly	Composite
	Other Pollutants, units	TBD		TBD	TBD	TBD
	Regulation 85 or Regulation 31 Nutrients [10]	**Running Annual Median**	**95% percentile**		**Frequency**	**Type**
00665	Total Phosphorus, mg/l	See Table 7a or 7d/7e	See Table 7a		Monthly	Composite
00640	Total Inorganic Nitrogen, mg/l	See Table 7a	See Table 7a		Monthly	Composite

TBD means to be determined for each certification.

Table 1c						
Lagoon or Other Non- Mechanical Facilities With Design Flows Less or Equal to 0.5 MGD Discharging to Unclassified Waters						
ICIS Code	**Parameter**	**Limitation**			**Sampling**	
		30-day Avg.	**7-day Avg.**	**Daily Max**	**Frequency[1]**	**Type[2]**
50050	Flow, MGD[3]	TBD		Report	Continuous[4]	Recorder[4]
00310	BOD_5, mg/l[5]	30	45		Monthly	Grab
81010	BOD_5, percent removal[5, 6]	85% (min)			Monthly	Calculated
00530	Total Suspended Solids, mg/l					
	Aerated Lagoons	75		110	Monthly	Grab
	Non-Aerated Lagoons	105		160	Monthly	Grab
81011	TSS, percent removal[6]	85% (min)			Monthly	Calculated
50060	Total Residual Chlorine, mg/l			0.5	Weekly	Grab
00400	pH, s.u.			6.0-9.0	Weekly	Grab
84066	Oil and Grease, mg/l			Report	Weekly	Visual
03582	Oil and Grease, mg/l			10	Contingent	Grab
51040	*E. coli*, #/100 ml[7]	2,000	4,000		Monthly	Grab
00610	Total Ammonia, mg/l as N	Report		Report	Monthly	Grab
00665	Total Phosphorous, mg/l[8]	TBD		TBD	Monthly	Grab
00665	Total Phosphorous, lbs/month[8]	Report		Report	Monthly	Calculated
00665	Total Phosphorous, cumulative lbs/previous 12 consecutive months[8]	TBD		NA	Monthly	Calculated
70295	Total Dissolved Solids, mg/l[9]	Report		Report	Quarterly	Grab
	Other Pollutants, units	TBD		TBD	TBD	TBD
	Regulation 85 or Regulation 31 Nutrients [10]	**Running Annual Median**	**95% percentile**		**Frequency**	**Type**
00665	Total Phosphorus, mg/l	See Table 7a or 7d/7e	See Table 7a		Monthly	Grab
00640	Total Inorganic Nitrogen, mg/l	See Table 7a	See Table 7a		Monthly	Grab

TBD means to be determined for each certification.

Table 1d						
Lagoon or Other Non- Mechanical Facilities With Design Flows Greater than 0.5 MGD Discharging to Unclassified Waters						
ICIS Code	**Parameter**	**Limitation**			**Sampling**	
		30-day Avg.	**7-day Avg.**	**Daily Max**	**Frequency[1]**	**Type[2]**
50050	Flow, MGD[3]	TBD		Report	Continuous[4]	Recorder[4]
00310	BOD_5, mg/l[5]	30	45		Weekly	Grab
81010	BOD_5, percent removal[5, 6]	85% (min)			Weekly	Calculated
00530	Total Suspended Solids, mg/l					
	Aerated Lagoons	75		110	Weekly	Grab
	Non-Aerated Lagoons	105		160	Weekly	Grab
81011	TSS, percent removal[6]	85% (min)			Weekly	Calculated
50060	Total Residual Chlorine, mg/l			0.5	Daily	Grab
00400	pH, s.u.			6.0-9.0	5 day/week	Grab
84066	Oil and Grease, mg/l			Report	5 days/week	Visual
03582	Oil and Grease, mg/l			10	Contingent	Grab
51040	*E. coli*, #/100 ml[7]	2,000	4,000		Weekly	Grab
00610	Total Ammonia, mg/l as N	Report		Report	Weekly	Grab
00665	Total Phosphorous, mg/l[8]	TBD		TBD	Monthly	Grab
00665	Total Phosphorous, lbs/month[8]	Report		Report	Monthly	Calculated
00665	Total Phosphorous, cumulative lbs/previous 12 consecutive months[8]	TBD		NA	Monthly	Calculated
70295	Total Dissolved Solids, mg/l[9]	Report		Report	Quarterly	Grab
	Other Pollutants, units	TBD		TBD	TBD	TBD
	Regulation 85 or Regulation 31 Nutrients [10]	**Running Annual Median**	**95% percentile**		**Frequency**	**Type**
00665	Total Phosphorus, mg/l	See Table 7a or 7d/7e	See Table 7a		Monthly	Grab
00640	Total Inorganic Nitrogen, mg/l	See Table 7a	See Table 7a		Monthly	Grab

FOOTNOTES FOR TABLES 1a-1d

1 Monitoring frequency reductions may be granted, in accordance with the Baseline Monitoring Frequency, Sample Type, and Reduced Monitoring Frequency Policy for Industrial and Domestic Wastewater Treatment Facilities (WQP-20).

2 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.

3 The 30-day average effluent limitation for flow is identified in the certification, is generally based on the design capacity of the facility as outlined in the most recent site approval, and is enforceable under this permit. Facilities with flow equalization basin and reclaimed water configurations may be addressed differently. See 61.8(2)(f).

4 The monitoring frequency and sample type for effluent flow is specified in the certification and is fully enforceable under this permit. Mechanical type treatment facilities are typically required to have both influent and effluent flow measuring and recording devices. This requirement may be waived in cases where the division determines that either influent or effluent flow measurements are impractical. For these facilities, flow measuring and sampling type will be specified in the certification. If only one device is applicable, then that device will be used to report both influent and effluent flow. However, where these devices are not in place at the time of certification, the permittee has one year from the end of the calendar month that certification was given to install the required equipment. Where such equipment is in place, the

frequency and type of flow monitoring will be "Continuous" and "Recorder", respectively. Where such equipment is not in place, the frequency and type of flow monitoring, during the interim period, will be specified in the certification. For certain facilities, the use of a metered pumping rate or potable water use or may be allowed. In these cases, the monitoring frequency and sample type are determined and specified in the certification.

5 Limitations for 5-day Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) of 25 mg/l (30-day average) and 40 mg/l (maximum 7-day average) may be substituted for the limits for BOD_5 as identified in the certification. 85% removal of $CBOD_5$ would also be required.

6 For domestic sources, 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 BOD_5, $CBOD_5$, and TSS can be met.

7 For *E. coli* the statistic used is the Geometric Mean, which is based on Method 1: Geometric Mean = $(a*b*c*d*...)^{(1/n)}$, or Method 2: Geometric Mean = antilog([log(a)+log(b)+log(c)+log(d)+...]/n).

8 Total Phosphorous limits will be established and included in the certification, where applicable, and may be based on Regulation 85 phosphorus limits, Regulation 31 phosphorus limits, basin regulations (Reg 32-38) phosphorus limits, or Regulations 71-74. The limits and reporting requirements, where applicable, will be fully enforceable under this permit.

9 TDS monitoring requirement applies to discharges in the Colorado River basin. Samples are to be of the raw water supply. If more than one source is being utilized, a composite sample proportioned to flow shall be prepared from individual grab samples.

10 New facilities will also be subject to total inorganic nitrogen and total phosphorus requirements in Part I.B.4 of the permit.

3. Discharges to Classified Waters

For discharges to unclassified water where return flow to a classified state water is possible or for discharges into classified water, the limitations under Part I.B. Tables 2a-2d will apply. **For discharges where the receiving stream is a T&E water, the zero dilution limitations shown under Tables 3a through 7e will apply. Footnotes for Tables 2a-2d are defined following Table 2d.**

In accordance with the Water Quality Control Commission Regulations for Effluent Limitations, Section 62.4, and the Colorado Discharge Permit System Regulations, Section 61.8(2), the permitted discharge shall not contain effluent parameter concentrations, which exceed the following limitations:

Table 2a							
Mechanical Facilities with Design Flows Less Than or Equal to 0.25 MGD Discharging to Classified Waters							
ICIS Code	**Parameter**	**Limitation**				**Sampling**	
		30-day Avg.	**7-day Avg.**	**Daily Max**	**2-year Avg.**	**Frequency [1]**	**Type[2]**
50050	Flow, MGD	TBD [1]		Report		Continuous [4]	Recorder [4]
00310	BOD_5, mg/l [5]	30	45 [2]			Monthly	Composite
81010	BOD_5, percent removal[5,6]	85% (min)				Monthly	Calculated
00530	Total Suspended Solids, mg/l	30	45			Monthly	Composite
81011	TSS, percent removal [6]	85% (min)				Monthly	Calculated
00400	pH, s.u.			6.5-9.0		Weekly	Grab
84066	Oil and Grease, mg/l			Report		Weekly	Visual
03582	Oil and Grease, mg/l			10		Contingent	Grab
51040	*E. coli*, no/100 ml[7]	See Tables 3a-3c	2 X 30-day Avg.		See Tables 3d – 3f	Monthly	Grab
50060	Total Residual Chlorine, mg/l	See Table 4a		See Table 4b	See Table 4c	Weekly	Grab
00640	Total Inorganic Nitrogen			See Table 5a	See Table 5b	Monthly	Composite
00610	Total Ammonia, mg/l as N	See Table 6a or 6c		See Table 6e or 6g	See Table 6i or 6k	Monthly	Composite
00665	Total Phosphorous, mg/l [8]	TBD		TBD		Monthly	Composite
00665	Total Phosphorous, lbs/month[8]	Report		Report		Monthly	Calculated
00665	Total Phosphorous, cumulative lbs/previous 12 consecutive months [8]	TBD		NA		Monthly	Calculated
70295	Total Dissolved Solids, mg/l [9]	Report		Report		Quarterly	Composite
00010	Temp Daily Max (°C)			TBD		Continuous	Recorder
00010	Temp Daily Max (°C)			TBD		Continuous	Recorder
00010	Temp MWAT (°C)		TBD			Continuous	Recorder
00010	Temp MWAT (°C)		TBD			Continuous	Recorder
	Other Pollutants, units	TBD		TBD		TBD	TBD
	WET, Acute [10]						
TAN6C	LC50 Statre 96Hr Acute *Pimephales promelas*			$LC_{50} \geq 100$		TBD	Grab
TAM3B	LC50 Statre 48Hr Acute *Ceriodaphnia dubia*			$LC_{50} \geq 100$		TBD	Grab
	WET, Chronic [10]						
TKP6C	Static Renewal 7 Day Chronic *Pimephales promelas*			NOEC or $IC_{25} \geq$ IWC		TBD	3 Composites /Test
TKP3B	Static Renewal 7 Day Chronic *Ceriodaphnia Dubia*			NOEC or $IC_{25} \geq$ IWC		TBD	3 Composites /Test
	Regulation 85 or Regulation 31 Nutrients [11]	**Running Annual Median**	**95% percentile**			**Frequency**	**Type**
00665	Total Phosphorus, mg/l	See Table 7a or 7d/7e	See Table 7a			Monthly	Composite
00640	Total Inorganic Nitrogen, mg/l	See Table 7a	See Table 7a			Monthly	Composite
00600	Total Nitrogen, mg/l [12]	See Table 7b/7c				Monthly	Composite

TBD means to be determined for each certification.

Table 2b Mechanical Facilities with Design Flows Greater Than 0.25 MGD and Less Than 1.0 MGD Discharging to Classified Waters							
ICIS Code	Parameter	Limitation				Sampling	
		30-day Avg.	7-day Avg.	Daily Max	2-year Avg.	Frequency[1]	Type[2]
50050	Flow, MGD[3]	TBD		Report		Continuous [4]	Recorder [4]
00310	BOD_5, mg/l[5]	30	45			Weekly	Composite
81010	BOD_5, percent removal[5,6]	85% (min)				Weekly	Calculated
00530	Total Suspended Solids, mg/l	30	45			Weekly	Composite
81011	TSS, percent removal [6]	85% (min)				Weekly	Calculated
00400	pH, s.u.			6.5-9.0		Daily	Grab
84066	Oil and Grease, mg/l			Report		Daily	Visual
03582	Oil and Grease, mg/l			10		Contingent	Grab
51040	*E. coli*, no/100 ml [7]	See Tables 3a – 3c	2 X 30-day Avg.		See Tables 3d – 3f	Weekly	Grab
50060	Total Residual Chlorine, mg/l	See Table 4a		See Table 4b	See Table 4c	Weekly	Grab
00640	Total Inorganic Nitrogen			See Table 5a	See Table 5b	Monthly	Composite
00610	Total Ammonia, mg/l as N	See Table 6a or 6c		See Table 6e or 6g	See Table 6i or 6k	Monthly	Composite
00665	Total Phosphorous, mg/l [8]	TBD		TBD		Monthly	Composite
00665	Total Phosphorous, lbs/month [8]	Report		Report		Monthly	Calculated
00665	Total Phosphorous, cumulative lbs/previous 12 consecutive months [8]	TBD		NA		Monthly	Calculated
70295	Total Dissolved Solids, mg/l [9]	Report		Report		Quarterly	Composite
00010	Temp Daily Max (°C)			TBD		Continuous	Recorder
00010	Temp Daily Max (°C)			TBD		Continuous	Recorder
00010	Temp MWAT (°C)		TBD			Continuous	Recorder
00010	Temp MWAT (°C)		TBD			Continuous	Recorder
	Other Pollutants, units	TBD		TBD		TBD	TBD
	WET, Acute [10]						
TAN6C	LC50 Statre 96Hr Acute *Pimephales promelas*			$LC_{50} \geq 100$		TBD	Grab
TAM3B	LC50 Statre 48Hr Acute *Ceriodaphnia dubia*			$LC_{50} \geq 100$		TBD	Grab
	WET, Chronic [10]						
TKP6C	Static Renewal 7 Day Chronic *Pimephales promelas*			NOEC or $IC_{25} \geq$ IWC		TBD	3 Composites /Test
TKP3B	Static Renewal 7 Day Chronic *Ceriodaphnia Dubia*			NOEC or $IC_{25} \geq$ IWC		TBD	3 Composites /Test
	Regulation 85 or Regulation 31 Nutrients[11]	**Running Annual Median**	**95% percentile**			**Frequency**	**Type**
00665	Total Phosphorus, mg/l	See Table 7a or 7d/7e	See Table 7a			Monthly	Composite
00640	Total Inorganic Nitrogen, mg/l	See Table 7a	See Table 7a			Monthly	Composite
00600	Total Nitrogen, mg/l [12]	See Table 7b/7c				Monthly	Composite

Table 2c Non-Mechanical Facilities with Design Flows Less Than or Equal to 0.5 MGD Discharging to Classified Waters							
ICIS Code	Parameter	Limitation				Sampling	
		30-day Avg.	7-day Avg.	Daily Max	2-year Avg.	Frequency[1]	Type[2]
50050	Flow, MGD[3]	TBD		Report		Continuous [4]	Recorder [4]
00310	BOD_5, mg/l [5]	30	45			Monthly	Grab
81010	BOD_5, percent removal [5,6]	85% (min)				Monthly	Calculated
00530	Total Suspended Solids, mg/l [6]						
	Aerated Lagoons	75	110			Monthly	Grab
	Non-aerated Lagoons	105	160			Monthly	Grab
81011	TSS, percent removal [6]	NA					
00400	pH, s.u.			6.5-9.0		Weekly	Grab
84066	Oil and Grease, mg/l			Report		Weekly	Visual
03582	Oil and Grease, mg/l			10		Contingent	Grab
51040	*E. coli*, no/100 ml [7]	See Tables 3a – 3c	2 X 30-day Avg.		See Tables 3d – 3f	Monthly	Grab
50060	Total Residual Chlorine, mg/l	See Table 4a		See Table 4b	See Table 4c	Weekly	Grab
00640	Total Inorganic Nitrogen			See Table 5a	See Table 5b	Monthly	Grab
00610	Total Ammonia, mg/l as N	See Table 6b or 6d		See Table 6f or 6h	See Table 6j or 6l	Monthly	Grab
00665	Total Phosphorous, mg/l[8]	TBD		TBD		Monthly	Grab
00665	Total Phosphorous, lbs/month[8]	Report		Report		Monthly	Calculated
00665	Total Phosphorous, cumulative lbs/previous 12 consecutive months[8]	TBD		NA		Monthly	Calculated
70295	Total Dissolved Solids, mg/l [9]	Report		Report		Quarterly	Grab
00010	Temp Daily Max (°C)			TBD		Continuous	Recorder
00010	Temp Daily Max (°C)			TBD		Continuous	Recorder
00010	Temp MWAT (°C)		TBD			Continuous	Recorder
00010	Temp MWAT (°C)		TBD			Continuous	Recorder
	Other Pollutants, units	TBD		TBD		TBD	TBD
	WET, Acute [10]						
TAN6C	LC50 Statre 96Hr Acute *Pimephales promelas*			$LC_{50} \geq 100$		TBD	Grab
TAM3B	LC50 Statre 48Hr Acute *Ceriodaphnia dubia*			$LC_{50} \geq 100$		TBD	Grab
	WET, Chronic [10]						
TKP6C	Static Renewal 7 Day Chronic *Pimephales promelas*			NOEC or $IC_{25} \geq$ IWC		TBD	3 Composites /Test
TKP3B	Static Renewal 7 Day Chronic *Ceriodaphnia Dubia*			NOEC or $IC_{25} \geq$ IWC		TBD	3 Composites /Test
	Regulation 85 or Regulation 31 Nutrients[11]	**Running Annual Median**	**95% percentile**			**Frequency**	**Type**
00665	Total Phosphorus, mg/l	See Table 7a or 7d/7e	See Table 7a			Monthly	Grab
00640	Total Inorganic Nitrogen, mg/l	See Table 7a	See Table 7a			Monthly	Grab
00600	Total Nitrogen, mg/l [12]	See Table 7b/7c				Monthly	Grab

Table 2d Non-Mechanical Facilities with Design Flows Greater Than 0.5 MGD and Less Than 1.0 MGD Discharging to Classified Waters							
ICIS Code	Parameter	Limitation				Sampling	
		30-day Avg.	7-day Avg.	Daily Max	2-year Avg.	Frequency[1]	Type[2]
50050	Flow, MGD	TBD [3]		Report		Continuous [4]	Recorder [4]
00310	BOD_5, mg/l [5]	30	45			Weekly	Grab
81010	BOD_5, percent removal[5,6]	85% (min)				Weekly	Calculated
00530	Total Suspended Solids, mg/l						
	Aerated Lagoons	75	110			Weekly	Grab
	Non-aerated Lagoons	105	160			Weekly	Grab
81011	TSS, percent removal [6]	NA					
00400	pH, s.u.			6.5-9.0		5 days/week	Grab
84066	Oil and Grease, mg/l			Report		5 days/week	Visual
03582	Oil and Grease, mg/l			10		Contingent	Grab
51040	*E. coli*, no/100 ml[7]	See Tables 3a – 3c	2 X 30-day Avg.		See Tables 3d – 3f	Monthly	Grab
50060	Total Residual Chlorine, mg/l	See Table 4b		See Table 4a	See Table 4c	5 days/week	Grab
00640	Total Inorganic Nitrogen			See Table 5a	See Table 5b	Monthly	Grab
00610	Total Ammonia, mg/l as N	See Table 6b or 6d		See Table 6f or 6h	See Table 6j or 6l	Monthly	Grab
00665	Total Phosphorous, mg/l [8]	TBD		TBD		Monthly	Grab
00665	Total Phosphorous, lbs/month [8]	Report		Report [6]		Monthly	Calculated
00665	Total Phosphorous, cumulative lbs/previous 12 consecutive months [8]	TBD		NA		Monthly	Calculated
70295	Total Dissolved Solids, mg/l [9]	Report		Report		Quarterly	Grab
00010	Temp Daily Max (°C)			TBD		Continuous	Recorder
00010	Temp Daily Max (°C)			TBD		Continuous	Recorder
00010	Temp MWAT (°C)		TBD			Continuous	Recorder
00010	Temp MWAT (°C)		TBD			Continuous	Recorder
	Other Pollutants, units	TBD		TBD		TBD	TBD
	WET, Acute[10]						
TAN6C	LC50 Statre 96Hr Acute *Pimephales promelas*			$LC_{50} \geq 100$		TBD	Grab
TAM3B	LC50 Statre 48Hr Acute *Ceriodaphnia dubia*			$LC_{50} \geq 100$		TBD	Grab
	WET, Chronic[10]						
TKP6C	Static Renewal 7 Day Chronic *Pimephales promelas*			NOEC or $IC_{25} \geq$ IWC		TBD	3 Composites /Test
TKP3B	Static Renewal 7 Day Chronic *Ceriodaphnia Dubia*			NOEC or $IC_{25} \geq$ IWC		TBD	3 Composites /Test
	Regulation 85 or Regulation 31 Nutrients[11]	**Running Annual Median**	**95% percentile**			**Frequency**	**Type**
00665	Total Phosphorus, mg/l	See Table 7a or 7d/7e	See Table 7a			Monthly	Grab

00640	Total Inorganic Nitrogen, mg/l	See Table 7a	See Table 7a			Monthly	Grab
00600	Total Nitrogen, mg/l [12]	See Table 7b/7c				Monthly	Grab

Footnotes for Table 2a-2d

1 Monitoring frequency reductions may be granted, in accordance with the Baseline Monitoring Frequency, Sample Type, and Reduced Monitoring Frequency Policy for Industrial and Domestic Wastewater Treatment Facilities (WQP-20).

2 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.

3 The 30-day average effluent limitation for flow is identified in the certification, is generally based on the design capacity of the facility as outlined in the most recent site approval, and is enforceable under this permit. Facilities with flow equalization basin and reclaimed water configurations may be addressed differently. See 61.8(2)(f).

4 The monitoring frequency and sample type for effluent flow is specified in the certification and is fully enforceable under this permit. Mechanical type treatment facilities are typically required to have both influent and effluent flow measuring and recording devices. This requirement may be waived in cases where the division determines that either influent or effluent flow measurements are impractical. For these facilities, flow measuring and sampling type will be specified in the certification. If only one device is applicable, then that device will be used to report both influent and effluent flow. However, where these devices are not in place at the time of certification, the permittee has one year from the end of the calendar month that certification was given to install the required equipment. Where such equipment is in place, the frequency and type of flow monitoring will be "Continuous" and "Recorder", respectively. Where such equipment is not in place, the frequency and type of flow monitoring, during the interim period, will be specified in the certification. For certain facilities, the use of a metered pumping rate or potable water use or may be allowed. In these cases, the monitoring frequency and sample type are determined and specified in the certification.

5 Limitations for 5-day Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) of 25 mg/l (30-day average) and 40 mg/l (maximum 7-day average) may be substituted for the limits for BOD_5 as identified in the certification. 85% removal of $CBOD_5$ would also be required.

6 For domestic sources, 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 BOD_5, $CBOD_5$, and TSS can be met.

7 For *E. coli* the statistic used is the Geometric Mean, which is based on Method 1: Geometric Mean = $(a*b*c*d*...)^{(1/n)}$, or Method 2: Geometric Mean = antilog([log(a)+log(b)+log(c)+log(d)+...]/n).

8 Total Phosphorus limits are established and included in the certification, where applicable, and are based on the applicable regulation (Regulation Nos. 71-74).

9 TDS monitoring requirement applies to discharges in the Colorado River basin. Samples are to be of the raw water supply. If more than one source is being utilized, a composite sample proportioned to flow shall be prepared from individual grab samples.

10 Monitoring frequency for WET testing are implemented in accordance with the Division's Whole Effluent Toxicity (WET) Testing Policy. For chronic WET, "Composite" = 24 hour Composite. The in-stream waste concentration (IWC) for each facility is specified in the certification and determined using the following equation: IWC = [Facility Flow (FF)/(Stream Chronic Low Flow (annual) + FF)] X 100%

11 New facilities will also be subject to total inorganic nitrogen and total phosphorus requirements in Part I.B.4 of the permit.

12 This facility is eligible for Regulation 31 Total Nitrogen due to available dilution instead of Regulation 85 Total Inorganic Nitrogen.

POTWs may require periodic pollutant scans of the parameters in Table 2e. Therefore, the division may include these sampling requirements which shall commence within thirty (30) days of the effective date of this permit and continue at an annual frequency.

Table 2e

EPA Recommended Periodic Pollutant Monitoring

ICIS Code	Effluent Parameter	Effluent Limitations Maximum Concentrations, Daily Max	Frequency	Sample Type
01002	Total Arsenic, µg/l	Report	Annual	Composite
01027	Total Cadmium, µg/l	Report	Annual	Composite
01034	Total Chromium, µg/l	Report	Annual	Composite
01042	Total Copper, µg/l	Report	Annual	Composite
01051	Total Lead, µg/l	Report	Annual	Composite
71900	Total Mercury, µg/l	Report	Annual	Composite
01062	Total Molybdenum, µg/l	Report	Annual	Composite
01067	Total Nickel, µg/l	Report	Annual	Composite
01147	Total Selenium, µg/l	Report	Annual	Composite
01077	Total Silver, µg/l	Report	Annual	Composite
01092	Total Zinc, µg/l	Report	Annual	Composite
00720	Total Cyanide, µg/l	Report	Annual	Grab
03604	Total Phenols, µg/l	Report	Annual	Composite

A one-time monitoring requirement for PFAS will be included in the certification to gather information on the presence of this substance in the effluent discharge. The specific monitoring requirements are shown in Table 2f below. Please note that due to reporting system limitations, the frequency listed in the certification will be "annual", however for each year the facility does not sample for PFAS parameters, the permittee should enter "Code 9 - Conditional Monitoring – Not Required this Period" into NetDMR for these parameters. Leaving these parameters blank in NetDMR will trigger a non-compliance violation.

Table 2f			
PFAS Monitoring Requirements			
ICIS Code	**Effluent Parameter**	**Monitoring Requirements**	
		Frequency	**Sample Type**
51521	Perfluorooctanoic Acid [PFOA], ng/l	1/Permit Term	Grab
51522	Perfluorobutanoic Acid [PFBA], ng/l	1/Permit Term	Grab
51525	Perfluorooctanesulfonamide [PFOSA (or FOSA)], ng/l	1/Permit Term	Grab
51623	Perfluoropentanoic acid [PFPeA], ng/l	1/Permit Term	Grab
51624	Perfluorohexanoic acid [PFHxA], ng/l	1/Permit Term	Grab
51625	Perfluoroheptanoic acid [PFHpA], ng/l	1/Permit Term	Grab
51626	Perfluorononanoic acid [PFNA], ng/l	1/Permit Term	Grab
51627	Perfluorodecanoic acid [PFDA], ng/l	1/Permit Term	Grab
51628	Perfluoroundecanoic acid [PFUnA (or PFUdA)], ng/l	1/Permit Term	Grab
51629	Perfluorododecanoic acid [PFDoA], ng/l	1/Permit Term	Grab
51630	Perfluorotridecanoic acid [PFTrDA (or RFTriA)], ng/l	1/Permit Term	Grab
51631	Perfluorotetradecanoic acid [PFTeDA (or PFTA or PFTeA)], ng/l	1/Permit Term	Grab
51643	2-[N-ethylperfluorooctanesulfonamido] acetic acid [NEtFOSAA], ng/l	1/Permit Term	Grab
51644	2-[N-methylperfluorooctanesulfonamido] acetic acid [NMeFOSAA], ng/l	1/Permit Term	Grab
52602	Perfluorobutanesulfonic acid [PFBS], ng/l	1/Permit Term	Grab
52603	Perfluorodecanesulfonic acid [PFDS], ng/l	1/Permit Term	Grab
52604	Perfluoroheptanesulfonic acid [PFHpS], ng/l	1/Permit Term	Grab
52605	Perfluorohexanesulfonic acid [PFHxS], ng/l	1/Permit Term	Grab
52606	Perfluorooctanesulfonic acid [PFOS], ng/l	1/Permit Term	Grab
52607	4:2 Fluorotelomer sulfonic acid [4:2 FTS], ng/l	1/Permit Term	Grab
52608	6:2 Fluorotelomer sulfonic acid [6:2 FTS], ng/l	1/Permit Term	Grab
52609	8:2 Fluorotelomer sulfonic acid [8:2 FTS], ng/l	1/Permit Term	Grab
52610	Perfluoropentane sulfonic acid [PFPeS], ng/l	1/Permit Term	Grab
52611	Perfluorononane sulfonic acid [PFNS], ng/l	1/Permit Term	Grab
52612	Hexafluoropropylene oxide dimer acid [Gen-X (or HFPO-DA or HPFA-DA], ng/l	1/Permit Term	Grab
87006	PFAS Sum, ng/l*	1/Permit Term	Calculated

a. Effluent limitations for *E. Coli*

The following chronic 30-day Geometric Mean E. coli water quality based effluent limitations (WQBEL) will apply based on the appropriate dilution and upstream water quality. The shaded cells in the E. coli WQBEL tables 3a-3c indicate that the result is greater than the allowed maximum, and therefore the limit will be set to 2,000 CFU/100mL.

If the exact dilution ratio of a facility to stream flow is not shown on Tables 3a-3c below, the next lower dilution ratio will be used in the selection of the limit, in order to be protective of the receiving stream at the point of discharge. Note that for dilution ratios over 20:1 (for E, U, and P classified waters) or 5:1 (for N classified waters), the selected WQBEL limit will be above the maximum allowable E. coli limit of 2,000 CFU/100ml, therefore additional dilution is inconsequential.

If the exact ambient concentration is not shown on Tables 3a-3c below, the next higher ambient concentration will be used in the selection of the limit in order to be protective of the receiving stream at the point of discharge.

The acute 7-day Geometric mean WQBEL will be based on a limit that is two times the chronic 30-day limit.

Table 3a

E. coli Chronic WQBEL for Recreation E and U Classified Waters

		30E3 : Design Flow Dilution Ratio										
		0	**1**	**2**	**3**	**4**	**5**	**7**	**10**	**13**	**15**	**20**
Ambient Conc (CFU/100ml)	**1**	126	251	376	501	626	751	1001	1376	1751	2001	2626
	2	126	250	374	498	622	746	994	1366	1738	1986	2606
	3	126	249	372	495	618	741	987	1356	1725	1971	2586
	4	126	248	370	492	614	736	980	1346	1712	1956	2566
	5	126	247	368	489	610	731	973	1336	1699	1941	2546
	10	126	242	358	474	590	706	938	1286	1634	1866	2446
	25	126	227	328	429	530	631	833	1136	1439	1641	2146
	50	126	202	278	354	430	506	658	886	1114	1266	1646
	75	126	177	228	279	330	381	483	636	789	891	1146
	100	126	152	178	204	230	256	308	386	464	516	646
	126	126	126	126	126	126	126	126	126	126	126	126

Table 3b

E. coli Chronic WQBEL for Recreation P Classified Waters

		30E3 : Design Flow Dilution Ratio												
		0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**15**	**20**
Ambient Conc (CFU/100ml)	**1**	205	409	613	817	1021	1225	1429	1633	1837	2041	2245	3265	4285
	2	205	408	611	814	1017	1220	1423	1626	1829	2032	2235	3250	4265
	3	205	407	609	811	1013	1215	1417	1619	1821	2023	2225	3235	4245
	4	205	406	607	808	1009	1210	1411	1612	1813	2014	2215	3220	4225
	5	205	405	605	805	1005	1205	1405	1605	1805	2005	2205	3205	4205
	10	205	400	595	790	985	1180	1375	1570	1765	1960	2155	3130	4105
	50	205	360	515	670	825	980	1135	1290	1445	1600	1755	2530	3305
	100	205	350	495	640	785	930	1075	1220	1365	1510	1655	2380	3105
	150	205	310	415	520	625	730	835	940	1045	1150	1255	1780	2305
	205	205	205	205	205	205	205	205	205	205	205	205	205	205

Table 3c									
E. coli Chronic WQBEL for Recreation N Classified Waters									
		30E3 : Design Flow Dilution Ratio							
		0	**1**	**2**	**3**	**4**	**5**	**10**	15
Ambient Conc (mg/l)	**1**	630	1259	1888	2517	3146	3775	6920	10065
	5	630	1255	1880	2505	3130	3755	6880	10005
	10	630	1250	1870	2490	3110	3730	6830	9930
	50	630	1210	1790	2370	2950	3530	6430	9330
	100	630	1160	1690	2220	2750	3280	5930	8580
	200	630	1060	1490	1920	2350	2780	4930	7080
	300	630	960	1290	1620	1950	2280	3930	5580
	400	630	860	1090	1320	1550	1780	2930	4080
	500	630	760	890	1020	1150	1280	1930	2580
	600	630	660	690	720	750	780	930	1080
	630	630	630	630	630	630	630	630	630

Where the waters are non-designated, antidegradation considerations must be taken into account. Therefore, either the following E. coli chronic 2-year average antidegradation based effluent average concentrations (ADBAC) from Tables 3d-3f will apply, or the chronic discharge requirement (effluent loading to stream) that was occurring because of this discharge as of September 30, 2000 (or other reviewable date), otherwise known as the Non-Impact Limit (NIL) will apply. Note that 0 CFU/100ml cannot be used in a geometric mean calculation, therefore 1 is used in the calculation even when the ambient is <1. BWQ is assumed to be 1.

The shaded cells in the E. Coli ADBAC tables indicate that the result is greater than the allowed maximum, and therefore the limit will be set to 2,000 CFU/100mL.

If the exact dilution ratio of a facility to stream flow is not shown on Tables 3d-3f below, the next lower dilution ratio will be used in the selection of the limit in order to be protective of the receiving stream at the point of discharge.

If the exact ambient concentration is not shown on Tables 3d-3f below, the next higher ambient concentration will be used in the selection of the limit in order to be protective of the receiving stream at the point of discharge.

Table 3d														
E. coli ADBAC for Recreation E and U Classified Waters														
		30E3 : Design Flow Dilution Ratio												
		0	**1**	**2**	**3**	**4**	**5**	**7**	**10**	**20**	**30**	**40**	**50**	**75**
Ambient Conc (CFU/100ml)	**1**	20	39	57	76	95	114	151	207	395	582	770	957	1426
	3	20	37	53	70	87	104	137	187	355	522	690	857	1276
	5	20	35	49	64	79	94	123	167	315	462	610	757	1126
	7	20	33	45	58	71	84	109	147	275	402	530	657	976
	10	20	30	39	49	59	69	88	117	215	312	410	507	751
	15	20	25	29	34	39	44	53	67	115	162	210	257	376
	20	20(A)	20(A)	20(A)	20(A)	20(A)	20(A)	20(A)	20(A)	20(A)	20(A)	20(A)	20(A)	20(A)

(A)The ADBAC is set equal to the SCT because there is no assimilative capacity for the E. coli in the receiving stream.

Table 3e (Part 1)									
E. coli ADBAC for Recreation P Classified Waters									
		30E3 : Design Flow Dilution Ratio							
		0	**1**	**2**	**3**	**4**	**5**	**7**	**10**
Ambient Conc (CFU/100ml)	**1**	32	62	93	123	154	185	246	338
	2	32	61	91	120	150	180	239	328
	3	32	60	89	117	146	175	232	318
	4	32	59	87	114	142	170	225	308
	5	32	58	85	111	138	165	218	298
	10	32	53	75	96	118	140	183	248
	15	32	48	65	81	98	115	148	198
	20	32	43	55	66	78	90	113	148
	25	32	38	45	51	58	65	78	98
	32	32(A)	32(A)	32(A)	32(A)	32(A)	32(A)	32(A)	32(A)

(A)The ADBAC is set equal to the SCT because there is no assimilative capacity for the E. coli in the receiving stream

Table 3e (Part 2)										
E. coli ADBAC for Recreation P Classified Waters										
		30E3: Design Flow Dilution Ratio								
		15	**20**	**30**	**40**	**50**	**60**	**70**	**80**	**90**
Ambient Conc (CFU/100ml)	**1**	491	644	950	1256	1562	1868	2327	2480	2786
	2	476	624	920	1216	1512	1808	2252	2400	2696
	3	461	604	890	1176	1462	1748	2177	2320	2606
	4	446	584	860	1136	1412	1688	2102	2240	2516
	5	431	564	830	1096	1362	1628	2027	2160	2426
	10	356	464	680	896	1112	1328	1652	1760	1976
	15	281	364	530	696	862	1028	1277	1360	1526
	20	206	264	380	496	612	728	902	960	1076
	25	131	164	230	296	362	428	527	560	626
	32	32[A]	32[A]	32[A]	32[A]	32[A]	32[A]	32[A]	32[A]	32[A]

[A]The ADBAC is set equal to the SCT because there is no assimilative capacity for the E. coli in the receiving stream

Table 3f											
E. coli ADBAC for Recreation N Classified Waters											
		30E3 : Design Flow Dilution Ratio									
		0	**1**	**2**	**3**	**4**	**5**	**7**	**10**	**15**	**20**	**25**
Ambient Conc (CFU/100ml)	**1**	95	190	284	378	473	567	756	1039	1511	1982	2454
	2	95	189	282	375	469	562	749	1029	1496	1962	2429
	3	95	188	280	372	465	557	742	1019	1481	1942	2404
	4	95	187	278	369	461	552	735	1009	1466	1922	2379
	5	95	186	276	366	457	547	728	999	1451	1902	2354
	10	95	181	266	351	437	522	693	949	1376	1802	2229
	20	95	171	246	321	397	472	623	849	1226	1602	1979
	95	95[A]	95[A]	95[A]	95[A]	95[A]	95[A]	95[A]	95[A]	95[A]	95[A]	95[A]

[A]The ADBAC is set equal to the SCT because there is no assimilative capacity for the E. coli in the receiving stream.

b. Effluent limitations for Total Residual Chlorine

The following chronic 30-day average and acute 1-day average total residual chlorine WQBELs, shown in Tables 4a and 4b below, will apply based on the appropriate dilution and upstream water quality. The shaded cells in the chronic and acute TRC tables indicate that the calculated TRC limit is greater than the Regulation 62 TRC limit of 0.5 mg/l, and therefore the WQBEL will be set to 0.5 mg/l.

If the exact dilution ratio of a facility to stream flow is not shown on Tables 4a-4b below, the next lower dilution ratio will be used in the selection of the limit in order to be protective of the receiving stream at the point of discharge.

If the exact ambient concentration is not shown on Tables 4a-4b below, the next higher ambient concentration will be used in the selection of the limit in order to be protective of the receiving stream at the point of discharge.

Table 4a

Chronic Total Residual Chlorine WQBEL for Aquatic Life Classified Waters

Ambient Conc (mg/l)	30E3: Design Flow Dilution Ratio													
	0	**1**	**2**	**3**	**4**	**5**	**7**	**10**	**15**	**20**	**25**	**30**	**40**	**50**
0	0.011	0.022	0.033	0.044	0.055	0.066	0.088	0.121	0.176	0.231	0.286	0.341	0.451	0.561
0.001	0.011	0.021	0.031	0.041	0.051	0.061	0.081	0.111	0.161	0.211	0.261	0.311	0.411	0.511
0.002	0.011	0.020	0.029	0.038	0.047	0.056	0.074	0.101	0.146	0.191	0.236	0.281	0.371	0.461
0.003	0.011	0.019	0.027	0.035	0.043	0.051	0.067	0.091	0.131	0.171	0.211	0.251	0.331	0.411
0.004	0.011	0.018	0.025	0.032	0.039	0.046	0.060	0.081	0.116	0.151	0.186	0.221	0.291	0.361
0.005	0.011	0.017	0.023	0.029	0.035	0.041	0.053	0.071	0.101	0.131	0.161	0.191	0.251	0.311
0.01	0.011	0.012	0.013	0.014	0.015	0.016	0.018	0.021	0.026	0.031	0.036	0.041	0.051	0.061
0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011

Table 4b

Acute Total Residual Chlorine WQBEL for Aquatic Life Classified Waters (mg/l)

Ambient Conc (mg/l)	1E3: Design Flow Dilution Ratio												
	0	**1**	**2**	**3**	**4**	**5**	**7**	**10**	**15**	**20**	**25**	**30**	**50**
0	0.019	0.038	0.057	0.076	0.095	0.11	0.15	0.21	0.30	0.40	0.49	0.59	0.97
0.001	0.019	0.037	0.055	0.073	0.091	0.11	0.15	0.20	0.29	0.38	0.47	0.56	0.92
0.002	0.019	0.036	0.053	0.070	0.087	0.10	0.14	0.19	0.27	0.36	0.44	0.53	0.87
0.003	0.019	0.035	0.051	0.067	0.083	0.099	0.13	0.18	0.26	0.34	0.42	0.50	0.82
0.004	0.019	0.034	0.049	0.064	0.079	0.094	0.12	0.17	0.24	0.32	0.39	0.47	0.77
0.005	0.019	0.033	0.047	0.061	0.075	0.089	0.12	0.16	0.23	0.30	0.37	0.44	0.72
0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019

Where the waters are non-designated, antidegradation considerations must be taken into account. Therefore, either the following TRC chronic 2-year average antidegradation based effluent average concentrations (ADBAC) from Table 4c will apply, or the chronic discharge requirement (effluent loading to stream) that was occurring because of this discharge as of September 30, 2000 (or other reviewable date), otherwise known as the Non-Impact Limit (NIL) will apply. Note that the TRC BWQ is set to zero.

If the exact dilution ratio of a facility to stream flow is not shown on Table 4c below, the next lower dilution ratio will be used in the selection of the limit in order to be protective of the receiving stream at the point of discharge. Note that Table 4c is split into two tables.

If the exact ambient concentration is not shown on Table 4c below, the next higher ambient concentration will be used in the selection of the limit in order to be protective of the receiving stream at the point of discharge.

Table 4c - PART 1							
Total Residual Chlorine ADBAC for Aquatic Life Classified Waters (mg/l)							
		30E3: Design Flow Dilution Ratio					
		0	**1**	**2**	**5**	**10**	**15**
Ambient Conc (mg/l)	**0**	0.0017	0.0033	0.0050	0.0099	0.018	0.026
	0.001	0.0017	0.0023	0.0030	0.0049	0.0082	0.011
	0.0015	0.0017	0.0018	0.0020	0.0024	0.0032	0.0039
	0.0017	0.0017[(A)]	0.0017[(A)]	0.0017[(A)]	0.0017[(A)]	0.0017[(A)]	0.0017[(A)]

[(A)]The ADBAC is set equal to the SCT because there is no assimilative capacity for the TRC in the receiving stream.

Table 4c - PART 2							
Total Residual Chlorine ADBAC for Aquatic Life Classified Waters (mg/l)							
		30E3: Design Flow Dilution Ratio					
		20	**30**	**40**	**50**	**70**	**90**
Ambient Conc (mg/l)	**0**	0.035	0.051	0.068	0.084	0.12	0.15
	0.001	0.015	0.021	0.028	0.034	0.047	0.060
	0.0015	0.0046	0.0062	0.0076	0.0091	0.012	0.015
	0.0017	0.0017[(A)]	0.0017[(A)]	0.0017[(A)]	0.0017[(A)]	0.0017[(A)]	0.0017[(A)]

[(A)]The ADBAC is set equal to the SCT because there is no assimilative capacity for the TRC in the receiving stream.

c. Effluent limitations for Total Inorganic Nitrogen (TIN)

The following acute 1-day average total inorganic Nitrogen (TIN) WQBELs, shown in Table 5a below, will apply for receiving streams that are classified for water supply and are based on the appropriate dilution and upstream water quality.

The shaded cells in the WQBEL TIN table indicates that the calculated TIN limit is greater than the maximum TIN limit allowed by the division, and the TIN WQBEL will be set to 100 mg/l.

For facilities that discharge to streams only classified for Agriculture and not classified as Water Supply, the WQBEL will be set to 100 mg/l, regardless of ambient TIN concentration and dilution ratio.

If the exact dilution ratio of a facility to stream flow is not shown on Tables 5a below, the next lower dilution ratio will be used in the selection of the limit in order to be protective of the receiving stream at the point of discharge.

If the exact ambient concentration is not shown on Table 5a below, the next higher ambient concentration will be used in the selection of the limit in order to be protective of the receiving stream at the point of discharge.

Table 5a																	
Acute Total Inorganic Nitrogen for Water Supply Classified Waters (mg/l)																	
		1E3: Design Flow Dilution Ratio															
		0	**0.25**	**0.5**	**0.75**	**1**	**2**	**3**	**4**	**5**	**7**	**9**	**10**	**15**	**20**	**25**	**30**
Ambient Conc (mg/l)	**0**	10	13	15	18	20	30	40	50	60	80	100	110	160	210	260	310
	0.5	10	12	15	17	20	29	39	48	58	77	96	105	153	200	248	295
	1	10	12	15	17	19	28	37	46	55	73	91	100	145	190	235	280
	2	10	12	14	16	18	26	34	42	50	66	82	90	130	170	210	250
	3	10	12	14	15	17	24	31	38	45	59	73	80	115	150	185	220
	4	10	12	13	15	16	22	28	34	40	52	64	70	100	130	160	190
	5	10	11	13	14	15	20	25	30	35	45	55	60	85	110	135	160
	7	10	11	12	12	13	16	19	22	25	31	37	40	55	70	85	100
	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10

Where the waters are non-designated, antidegradation considerations must be taken into account. Therefore, either the following TIN chronic 2-year average antidegradation based effluent average concentrations (ADBAC) from Table 5b will apply, or the acute discharge requirement (effluent loading to stream) that was occurring because of this discharge as of September 30, 2000 (or other reviewable date), otherwise known as the Non-Impact Limit (NIL) will apply. Note that the TIN BWQ is assumed to be zero. The shaded cells in the ADBAC TIN table indicates that the calculated TIN limit is greater than the maximum TIN limit allowed by the division, and the TIN WQBEL will be set to 100 mg/l.

If the exact dilution ratio of a facility to stream flow is not shown on Table 5b below, the next lower dilution ratio will be used in the selection of the limit in order to be protective of the receiving stream at the point of discharge.

If the exact ambient concentration is not shown on Table 5b (Part 1 and Part 2) below, the next higher ambient concentration will be used in the selection of the limit in order to be protective of the receiving stream at the point of discharge.

Table 5b - PART 1													
Total Inorganic Nitrogen ADBAC for Water Supply Classified Waters (mg/l)													
		1E3: Design Flow Dilution Ratio											
		0	**0.5**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Ambient Conc (mg/l)	**0**	1.5	2.3	3.0	4.5	6.0	7.5	9.0	11	12	14	15	17
	0.25	1.5	2.1	2.8	4.0	5.3	6.5	7.8	9.0	10	12	13	14
	0.5	1.5	2.0	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5	11	12
	1	1.5	1.8	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5
	1.25	1.5	1.6	1.8	2.0	2.3	2.5	2.8	3.0	3.3	3.5	3.8	4.0
	1.5	1.5[(A)]	1.5[(A)]	1.5[(A)]	1.5[(A)]	1.5[(A)]	1.5[(A)]	1.5[(A)]	1.5[(A)]	1.5[(A)]	1.5[(A)]	1.5[(A)]	1.5[(A)]

[(A)]The ADBAC is set equal to the SCT because there is no assimilative capacity for the TIN in the receiving stream.

Table 5b – PART 2											
Total Inorganic Nitrogen ADBAC for Water Supply Classified Waters (mg/l)											
		1E3: Design Flow Dilution Ratio									
		12	**15**	**20**	**30**	**40**	**50**	**60**	**70**	**80**	**90**
Ambient Conc (mg/l)	**0**	20	24	32	47	62	77	92	107	122	137
	0.25	17	20	27	39	52	64	77	89	102	114
	0.5	14	17	22	32	42	52	62	72	82	92
	1	7.5	9.0	12	17	22	27	32	37	42	47
	1.25	4.5	5.3	6.5	9.0	12	14	17	19	22	24
	1.5	1.5[(A)]	1.5[(A)]	1.5[(A)]	1.5[(A)]	1.5[(A)]	1.5[(A)]	1.5[(A)]	1.5[(A)]	1.5[(A)]	1.5[(A)]

[(A)]The ADBAC is set equal to the SCT because there is no assimilative capacity for the TIN in the receiving stream.

d. Effluent Limitations for Total Ammonia

The following chronic 30-day average (Tables 6a-6d) total ammonia WQBELs will apply based on the appropriate 30E:3 dilution ratio and month. Tables are divided by Cold/Warm water and Mechanical/Non-Mechanical facilities designations. Note that the ambient ammonia concentration is set to 0.01 mg/l to reflect typical ambient ammonia concentrations.

The shaded cells in the Ammonia WQBEL tables indicate that the calculated limit is greater than the maximum Ammonia limit allowed by the division, and therefore the Ammonia WQBEL will be set to 50 mg/l.

If the exact dilution ratio of a facility to stream flow is not shown on Tables 6a-6d below, the next lower dilution ratio will be used in the selection of the limit, in order to be protective of the receiving stream at the point of discharge.

Table 6a (Part 1)											
Ammonia Cold Water Chronic WQBELs for a Mechanical Facility (mg/l)											
	30E3: Design Flow										
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
JAN	4.3	5.9	5.4	5.5	5.8	6.1	6.5	6.9	7.4	7.9	8.4
FEB	4.5	6.7	6.2	6.2	6.3	6.7	7.0	7.5	7.9	8.4	8.8
MAR	3.7	5.5	6.5	6.8	7.1	7.5	7.9	8.4	8.8	9.3	10
APR	3.3	5.0	6.6	8.1	9.1	10	10	11	11	12	12
MAY	3.5	5.5	7.3	9.0	10	10	10	11	11	12	13
JUNE	3.6	5.7	7.6	10	11	13	14	16	16	17	17
JULY	3	4.8	6.4	7.9	9.4	10	12	13	15	16	17
AUG	3.2	4.9	6.2	7.5	8.7	10	11	12	13	14	15
SEP	3.8	5.3	6.6	7.7	8.8	10	11	12	13	14	14
OCT	4	6.2	8.0	10	10	11	11	12	12	13	13
NOV	4.1	6.4	7.1	7.1	7.3	7.6	8.0	8.4	8.9	9.4	10
DEC	4	5.5	5.2	5.4	5.7	6.1	6.6	7.1	7.6	8.1	8.6

Table 6a (Part 2)										
Ammonia Cold Water Chronic WQBELs for a Mechanical Facility (mg/l)										
	30E3: Design Flow									
	15	20	25	30	40	50	60	70	80	90
JAN	11	13	15	18	22	27	31	35	40	44
FEB	11	14	16	18	23	27	32	36	40	45
MAR	13	15	18	20	25	29	34	39	43	48
APR	17	20	22	25	30	35	40	45	50	50
MAY	17	20	22	25	30	35	40	46	50	50
JUNE	23	25	28	30	36	41	46	50	50	50
JULY	24	26	27	29	34	38	42	47	50	50
AUG	23	24	26	28	31	35	39	43	47	50
SEP	21	22	24	26	29	33	37	41	45	48
OCT	17	19	22	24	30	35	40	44	50	50
NOV	13	15	17	20	25	29	34	39	44	48
DEC	11	13	16	18	23	28	32	37	41	46

Table 6b (Part 1)											
Ammonia Cold Water Chronic WQBELs for a Non-Mechanical Facility											
	30E3: Design Flow										
	0	1	2	3	4	5	6	7	8	9	10
JAN	4.3	5.9	5.4	5.5	5.8	6.1	6.5	6.9	7.4	7.9	8.4
FEB	4.5	6.7	6.2	6.2	6.3	6.7	7.0	7.5	7.9	8.4	8.8
MAR	3.7	5.5	6.5	6.8	7.1	7.5	7.9	8.4	8.8	9.3	10
APR	3.3	5.0	6.6	8.1	9.1	10	10	11	11	12	12
MAY	3.5	5.5	7.3	9.0	10	10	10	11	11	12	13
JUNE	3.6	5.7	7.6	10	11	13	14	16	16	17	17
JULY	3.0	4.8	6.4	7.9	9.4	10	12	13	15	16	17
AUG	3.2	4.9	6.2	7.5	8.7	10	11	12	13	14	15
SEP	3.8	5.3	6.6	7.7	8.8	10	11	12	13	14	14
OCT	4.0	6.2	8.0	10	10	11	11	12	12	13	13
NOV	4.1	6.4	7.1	7.1	7.3	7.6	8.0	8.4	8.9	9.4	10
DEC	4.0	5.5	5.2	5.4	5.7	6.1	6.6	7.1	7.6	8.1	8.6

Table 6b (Part 2)										
Ammonia Cold Water Chronic WQBELs for a Non-Mechanical Facility (mg/l)										
	30E3: Design Flow									
	15	**20**	**25**	**30**	**40**	**50**	**60**	**70**	**80**	**90**
JAN	10	13	15	17	22	26	31	35	40	44
FEB	11	13	15	18	22	27	31	36	40	45
MAR	12	14	17	19	24	29	33	38	43	48
APR	15	18	21	24	29	34	39	45	50	50
MAY	15	18	21	24	29	34	40	45	50	50
JUNE	20	23	26	29	34	40	46	50	50	50
JULY	20	22	25	27	32	37	41	46	50	50
AUG	18	20	22	25	29	33	37	42	46	50
SEP	17	19	21	23	27	32	36	39	43	47
OCT	16	18	21	23	29	34	39	44	49	50
NOV	12	14	17	19	24	29	34	39	43	48
DEC	11	13	16	18	23	27	32	36	41	46

Table 6c (Part 1)											
Ammonia Warm Water Chronic WQBELs for a Mechanical Facility (mg/l)											
	30E3: Design Flow										
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
JAN	7.2	13	12	12	12	13	13	14	15	15	16
FEB	7.7	13	15	14	14	14	15	15	16	17	18
MAR	6.7	10	13	15	15	14	15	15	15	16	16
APR	4.6	7.4	9.8	11	13	15	17	18	18	19	19
MAY	4.8	7.7	10	12	14	15	17	19	20	21	21
JUNE	4.8	6.8	8.5	10	11	12	14	15	16	18	19
JULY	4.3	5.9	7.3	8.6	10	10	11	13	14	15	16
AUG	4.5	6.2	7.5	8.7	10	10	11	12	13	14	15
SEP	4.6	6.6	8.2	10	11	12	13	15	16	17	18
OCT	5.1	8.6	11	13	16	18	20	20	21	21	21
NOV	5.6	10	14	14	14	14	14	15	15	16	16
DEC	6.7	12	12	11	11	12	12	13	14	14	15

Table 6c (Part 2)										
Ammonia Warm Water Chronic WQBELs for a Mechanical Facility (mg/l)										
	30E3: Design Flow									
	15	**20**	**25**	**30**	**40**	**50**	**60**	**70**	**80**	**90**
JAN	20	24	28	33	41	49	50	50	50	50
FEB	22	26	30	34	43	50	50	50	50	50
MAR	19	22	25	29	35	41	48	50	50	50
APR	22	25	28	30	36	42	48	50	50	50
MAY	23	25	28	30	35	40	44	49	50	50
JUNE	25	29	31	33	36	40	44	47	50	50
JULY	21	26	30	34	38	42	45	48	50	50
AUG	20	24	29	32	37	41	43	46	49	50
SEP	24	30	33	35	38	42	45	49	50	50
OCT	23	26	29	31	37	42	47	50	50	50
NOV	20	24	27	31	39	46	50	50	50	50
DEC	19	23	27	32	40	48	50	50	50	50

Table 6d (Part 1)											
Ammonia Warm Water Chronic WQBELs for a Non-Mechanical Facility (mg/l)											
	30E3: Design Flow										
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
JAN	7.0	10	10	10	10	11	12	12	13	14	15
FEB	7.3	11	11	11	12	12	13	14	15	16	17
MAR	6.0	8.9	10	10	11	11	12	12	13	14	14
APR	3.3	5.3	7.2	9.1	10	12	13	14	15	16	16
MAY	3.5	5.5	7.3	9.1	10	12	14	15	16	17	18
JUNE	3.6	5.0	6.3	7.6	8.8	10	11	12	13	15	16
JULY	3.0	3.9	4.9	5.9	6.9	7.9	8.8	10	10	11	12
AUG	3.2	4.1	5.0	5.8	6.7	7.6	8.4	9.3	10	11	11
SEP	3.8	5.0	6.2	7.4	8.6	10	11	12	13	14	15
OCT	5.1	7.7	10	12	14	16	17	17	18	18	19
NOV	6.6	10	11	11	12	12	13	13	14	15	16
DEC	6.5	10	9.1	9.3	10	10	11	12	13	13	14

Table 6d (Part 2)										
Ammonia Warm Water Chronic WQBELs for a Non-Mechanical Facility (mg/l)										
	30E3: Design Flow									
	15	**20**	**25**	**30**	**40**	**50**	**60**	**70**	**80**	**90**
JAN	19	23	28	32	40	49	50	50	50	50
FEB	21	25	30	34	42	50	50	50	50	50
MAR	18	21	25	28	34	41	47	50	50	50
APR	20	23	26	29	35	41	47	50	50	50
MAY	21	23	26	29	34	39	44	48	50	50
JUNE	22	25	28	30	34	38	42	46	50	50
JULY	17	22	27	30	35	39	42	45	49	50
AUG	16	20	24	28	33	37	40	43	46	49
SEP	21	26	29	32	36	40	44	47	50	50
OCT	22	25	27	30	36	41	47	50	50	50
NOV	19	23	27	31	38	46	50	50	50	50
DEC	18	22	27	31	39	47	50	50	50	50

The following acute 1-day average total ammonia WQBELs in Tables 6e-6h will apply based on the appropriate 1E3 dilution ratio and month. Tables are divided by Cold/Warm water and Mechanical/Non-Mechanical facilities designations. The shaded cells in the Ammonia WQBEL tables indicate that the calculated limit is greater than the maximum Ammonia limit allowed by the division, and therefore the Ammonia WQBEL will be set to 50 mg/l. Note that the ambient ammonia concentration is set to 0.01 mg/l to reflect typical ambient ammonia concentrations.

If the exact dilution ratio of a facility to stream flow is not shown on Tables 6e-6h below, the next lower dilution ratio will be used in the selection of the limit in order to be protective of the receiving stream at the point of discharge. Note that the acute ammonia tables do not have dilution ratios greater than 50:1 because at higher dilutions, the resulting selection is greater than the 50 mg/l division allowable limit.

Table 6e																	
Ammonia Cold Water Acute WQBELs for a Mechanical Facility (mg/l)																	
	1E3: Design Flow																
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**15**	**20**	**25**	**30**	**40**	**50**
JAN	16	19	15	13	13	13	14	15	15	16	17	21	26	30	35	44	50
FEB	18	22	17	15	15	15	15	16	17	17	18	22	27	31	36	45	50
MAR	15	21	21	19	19	18	19	19	20	21	21	26	30	35	39	49	50
APR	14	20	24	25	26	26	26	27	27	28	28	33	38	43	48	50	50
MAY	15	21	26	27	26	26	26	26	27	27	28	33	38	43	48	50	50
JUNE	16	23	28	32	36	39	40	41	42	43	43	47	50	50	50	50	50
JULY	17	23	28	32	36	40	43	47	50	50	50	50	50	50	50	50	50
AUG	18	25	30	34	37	41	44	47	50	50	50	50	50	50	50	50	50
SEP	17	23	27	30	33	36	39	42	44	46	48	50	50	50	50	50	50
OCT	15	21	26	28	28	27	27	27	28	28	29	33	37	42	47	50	50
NOV	15	21	19	17	17	17	17	18	18	19	20	25	29	34	39	49	50
DEC	15	18	14	13	13	13	14	15	15	16	17	22	27	31	36	45	50

Table 6f																	
Ammonia Cold Water Acute WQBELs for a Non-Mechanical Facility (mg/l)																	
	1E3: Design Flow																
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**15**	**20**	**25**	**30**	**40**	**50**
JAN	13	11	10	10	10	11	12	13	14	15	16	20	25	30	34	43	50
FEB	14	12	11	11	11	12	13	14	15	16	16	21	26	30	35	44	50
MAR	10	12	12	12	13	14	15	15	16	17	18	23	28	33	38	48	50
APR	8.5	12	14	16	17	18	19	20	21	22	24	29	35	40	46	50	50
MAY	9.4	13	16	17	18	19	20	21	22	23	24	30	35	41	46	50	50
JUNE	9.9	14	18	22	26	28	30	32	33	35	36	42	48	50	50	50	50
JULY	9.0	12	16	19	23	26	30	33	36	38	40	49	50	50	50	50	50
AUG	9.8	13	16	19	22	25	27	30	33	35	37	45	50	50	50	50	50
SEP	10	14	16	19	22	24	27	29	32	34	36	43	49	50	50	50	50
OCT	11	15	19	20	20	21	22	22	23	24	25	30	35	40	46	50	50
NOV	12	14	13	13	13	14	15	16	17	18	18	23	28	33	38	48	50
DEC	11	10	9.7	10	10	11	12	13	14	15	16	21	26	31	35	45	50

Table 6g																	
Ammonia Warm Water Acute WQBELs for a Mechanical Facility (mg/l)																	
	1E3: Design Flow																
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**15**	**20**	**25**	**30**	**40**	**50**
JAN	16	20	16	14	14	15	15	16	17	17	18	23	27	32	37	46	50
FEB	18	25	21	19	19	19	19	20	21	21	22	27	32	37	42	50	50
MAR	15	21	25	24	24	24	24	25	25	26	27	31	36	41	46	50	50
APR	14	21	25	30	32	33	34	35	35	36	37	42	48	50	50	50	50
MAY	15	21	26	31	35	39	42	44	46	47	49	50	50	50	50	50	50
JUNE	16	22	27	31	35	39	43	47	50	50	50	50	50	50	50	50	50
JULY	17	23	28	32	36	40	43	47	50	50	50	50	50	50	50	50	50
AUG	18	25	30	34	38	42	45	49	50	50	50	50	50	50	50	50	50
SEP	17	23	28	33	37	41	45	49	50	50	50	50	50	50	50	50	50
OCT	15	22	27	32	37	39	41	42	43	44	45	49	50	50	50	50	50
NOV	15	21	23	22	21	21	21	22	23	23	24	29	34	39	44	50	50
DEC	15	20	16	15	15	15	15	16	17	17	18	22	27	31	36	45	50

Table 6g																	
Ammonia Warm Water Acute WQBELs for a Non-Mechanical Facility (mg/l)																	
	1E3: Design Flow																
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**15**	**20**	**25**	**30**	**40**	**50**
JAN	13	11	11	11	11	12	13	14	15	16	17	22	27	31	36	46	50
FEB	14	15	14	14	15	15	16	17	18	19	20	25	31	36	41	50	50
MAR	10	13	15	16	17	17	18	19	20	21	23	28	33	39	44	50	50
APR	8.5	12	17	20	22	24	26	27	29	30	31	38	44	50	50	50	50
MAY	9.4	13	17	21	25	28	31	34	36	38	40	47	50	50	50	50	50
JUNE	9.9	14	17	21	25	28	32	36	39	43	46	50	50	50	50	50	50
JULY	9.0	12	16	19	23	26	30	33	36	40	43	50	50	50	50	50	50
AUG	9.8	13	17	20	23	26	29	32	35	39	42	50	50	50	50	50	50
SEP	10	15	18	22	26	30	33	37	41	45	48	50	50	50	50	50	50
OCT	11	16	21	25	29	31	33	35	36	37	39	45	50	50	50	50	50
NOV	12	16	16	16	17	17	18	19	20	21	22	27	32	38	43	50	50
DEC	11	11	11	11	11	12	13	14	14	15	16	21	25	30	35	44	50

Where the waters are non-designated, antidegradation considerations must be taken into account. Therefore, either the following ammonia chronic 2-year average antidegradation based effluent average concentrations (ADBAC) from Tables 6i-6l will apply, or the chronic discharge requirement (effluent loading to stream) that was occurring because of this discharge as of September 30, 2000 (or other reviewable date), otherwise known as the Non-Impact Limit (NIL) will apply. Note that the ambient ammonia concentration is set to 0.01 mg/l and the BWQ is set to be zero to reflect typical ambient ammonia concentrations.

If the exact dilution ratio of a facility to stream flow is not shown on Tables 6i-6l below, the next lower dilution ratio will be used in the selection of the limit, in order to be protective of the receiving stream at the point of discharge.

Table 6i																
Monthly Total Ammonia Cold Water ADBAC for Mechanical Facilities (mg/l)																
	30E3:Design Flow															
	0	**1**	**2**	**4**	**7**	**10**	**15**	**20**	**25**	**30**	**40**	**50**	**60**	**70**	**80**	**90**
JAN	0.8	1.2	1.6	1.8	2.0	2.2	2.6	3.0	3.4	3.8	4.6	5.4	6.2	6.9	7.7	8.5
FEB	0.8	1.3	1.7	2.0	2.2	2.4	2.8	3.2	3.6	4.0	4.8	5.6	6.3	7.1	7.8	8.6
MAR	0.8	1.2	1.5	2.0	2.4	2.7	3.2	3.7	4.2	4.6	5.5	6.3	7.2	8.0	8.8	9.6
APR	0.7	1.1	1.4	2.0	2.7	3.3	4.1	4.7	5.4	6.0	7.1	8.1	9.1	10	11	12
MAY	0.8	1.2	1.5	2.1	2.9	3.5	4.2	4.9	5.5	6.1	7.2	8.2	9.2	10	11	12
JUNE	0.8	1.2	1.6	2.2	3.1	3.9	5.2	6.2	7.1	7.8	9.2	10	11	12	13	14
JULY	0.7	1.1	1.5	2.0	2.8	3.5	4.6	5.7	6.6	7.4	8.8	10	11	12	13	14
AUG	0.7	1.2	1.5	2.0	2.7	3.2	4.2	5.1	5.9	6.6	7.9	9.1	10	11	12	13
SEP	0.7	1.1	1.4	1.9	2.4	3.0	3.8	4.6	5.3	6.0	7.2	8.4	9.4	10	11	12
OCT	0.8	1.2	1.5	2.1	2.8	3.3	4.1	4.7	5.3	5.9	6.9	7.9	8.9	9.8	10	11
NOV	0.7	1.2	1.5	2.0	2.3	2.7	3.2	3.6	4.1	4.5	5.4	6.3	7.2	8.0	8.8	9.7
DEC	0.7	1.2	1.5	1.7	2.0	2.3	2.7	3.1	3.6	4.0	4.9	5.7	6.5	7.3	8.1	8.9

Table 6j																
Monthly Total Ammonia Cold Water ADBAC for Non-Mechanical Facilities (mg/l)																
	30E3:Design Flow															
	0	**1**	**2**	**4**	**7**	**10**	**15**	**20**	**25**	**30**	**40**	**50**	**60**	**70**	**80**	**90**
JAN	0.7	1.0	1.3	1.4	1.7	2.0	2.4	2.8	3.3	3.7	4.5	5.3	6.1	6.8	7.6	8.3
FEB	0.7	1.1	1.4	1.6	1.8	2.1	2.5	3.0	3.4	3.8	4.6	5.4	6.2	7.0	7.7	8.5
MAR	0.6	0.9	1.1	1.5	1.9	2.3	2.8	3.4	3.8	4.3	5.2	6.1	6.9	7.8	8.6	9.4
APR	0.5	0.8	1.0	1.5	2.1	2.7	3.5	4.3	4.9	5.6	6.7	7.8	8.8	10	10	11
MAY	0.6	0.9	1.1	1.6	2.4	2.9	3.7	4.4	5.1	5.7	6.8	7.9	8.9	10	10	11
JUNE	0.6	0.9	1.2	1.7	2.5	3.3	4.6	5.6	6.6	7.4	8.8	10	11	12	13	14
JULY	0.5	0.8	1.0	1.5	2.1	2.8	3.9	4.9	5.9	6.7	8.2	10	10	12	13	14
AUG	0.5	0.8	1.0	1.4	1.9	2.4	3.3	4.1	5.0	5.7	7.1	8.4	10	10	11	12
SEP	0.6	0.8	1.0	1.4	1.9	2.3	3.1	3.9	4.6	5.3	6.6	7.8	8.9	10	10	11
OCT	0.6	1.0	1.2	1.7	2.4	2.9	3.7	4.3	5.0	5.6	6.7	7.7	8.6	9.6	10	11
NOV	0.7	1.0	1.3	1.7	2.1	2.4	3.0	3.4	3.9	4.4	5.3	6.2	7.1	7.9	8.8	9.6
DEC	0.6	1.0	1.2	1.4	1.8	2.1	2.5	3.0	3.5	3.9	4.8	5.6	6.4	7.2	8.0	8.8

Table 6k																
Monthly Total Ammonia Warm Water ADBAC for Mechanical Facilities (mg/l)																
	30E3:Design Flow Dilution Ratio															
	0	**1**	**2**	**4**	**7**	**10**	**15**	**20**	**25**	**30**	**40**	**50**	**60**	**70**	**80**	**90**
JAN	1.1	2.0	2.6	2.8	3.1	3.5	4.2	4.8	5.6	6.2	7.6	9.0	10	11	13	14
FEB	1.2	2.1	2.8	3.3	3.7	4.1	4.8	5.5	6.3	7.0	8.4	9.9	11	12	14	15
MAR	1.1	1.6	2.1	2.9	3.5	3.9	4.6	5.3	5.9	6.5	7.7	8.9	10	11	12	13
APR	0.7	1.2	1.5	2.1	3.0	3.8	5.0	5.9	6.8	7.5	9.0	10	11	12	13	14
MAY	0.8	1.2	1.5	2.2	3.0	3.8	5.1	6.1	6.9	7.7	9.2	10	11	13	14	15
JUNE	0.8	1.1	1.3	1.8	2.4	2.9	3.9	4.8	5.8	6.7	8.5	10	11	12	14	15
JULY	0.7	0.9	1.1	1.5	2.0	2.5	3.2	3.9	4.7	5.4	6.9	8	10	11	12	13
AUG	0.7	1.0	1.2	1.5	2.0	2.4	3.1	3.7	4.4	5.0	6.3	7.6	9	10	11	12
SEP	0.7	1.0	1.3	1.7	2.3	2.8	3.8	4.7	5.5	6.4	8.2	9.9	11	12	14	15
OCT	0.8	1.3	1.7	2.5	3.5	4.5	5.6	6.5	7.4	8.1	9.6	10	12	13	14	15
NOV	0.9	1.6	2.2	3.0	3.5	4.0	4.7	5.4	6.0	6.7	8.0	9.3	10	11	13	14
DEC	1.0	1.8	2.3	2.6	3.0	3.3	3.9	4.6	5.3	6.0	7.3	8.6	9.9	11	12	13

Table 6l																
Monthly Total Ammonia Warm Water ADBAC for Non-Mechanical Facilities (mg/l)																
	30E3:Design Flow Dilution Ratio															
	0	**1**	**2**	**4**	**7**	**10**	**15**	**20**	**25**	**30**	**40**	**50**	**60**	**70**	**80**	**90**
JAN	1.1	1.7	2.0	2.3	2.7	3.2	3.9	4.6	5.3	6.1	7.5	8.9	10	11	12	14
FEB	1.1	1.8	2.3	2.8	3.2	3.7	4.5	5.3	6.1	6.8	8.3	9.8	11	12	13	15
MAR	0.9	1.4	1.7	2.3	2.9	3.4	4.2	4.9	5.6	6.2	7.4	8.6	9.8	10	12	13
APR	0.5	0.8	1.1	1.7	2.5	3.3	4.5	5.4	6.3	7.1	8.6	10	11	12	13	14
MAY	0.6	0.9	1.1	1.7	2.4	3.2	4.5	5.5	6.4	7.3	8.8	10	11	12	13	14
JUNE	0.6	0.8	1.0	1.4	1.9	2.5	3.4	4.3	5.3	6.2	8.0	10	11	12	13	15
JULY	0.5	0.6	0.8	1.1	1.5	1.9	2.7	3.4	4.1	4.9	6.3	7.8	9.2	10	12	13
AUG	0.5	0.7	0.8	1.0	1.4	1.8	2.5	3.1	3.7	4.4	5.7	7.0	8.2	9.5	10	12
SEP	0.6	0.8	1.0	1.3	1.9	2.4	3.3	4.2	5.1	5.9	7.7	9.4	11	12	13	15
OCT	0.8	1.2	1.6	2.2	3.2	4.1	5.2	6.2	7.0	7.9	9.3	10	11	13	14	15
NOV	1.0	1.6	2.1	2.6	3.2	3.7	4.4	5.2	5.9	6.5	7.9	9.2	10	11	13	14
DEC	1.0	1.5	1.9	2.2	2.6	3.0	3.7	4.4	5.1	5.8	7.1	8.4	9.7	11	12	13

4. **New Facilities With Design Flows Of Less Than 1.0 MGD**

The limits that follow apply to new treatment facilities. New treatment facility means any domestic wastewater treatment facility on a new site that is not an "existing treatment facility" and commences discharge to surface water, or receives PELs, after May 31, 2012 in addition to the applicable influent and effluent limits in Parts I.B.2 and I.B.3 of this permit. Existing Treatment facility means any existing domestic wastewater treatment facility that commenced discharge or received PELs or site approval prior to May 31, 2012 for groundwater discharge, surface water discharge, or a non-discharging facility; or that applied for a Notice of Authorization for the application of reclaimed water prior to May 31, 2012.

a. The following annual median and 95th percentile total inorganic nitrogen and total phosphorus technology-based effluent limitations will apply based on Regulation 85.

Table 7a		
Regulation 85 Technology-Based Effluent Limits for New Domestic Wastewater Treatment Works		
Parameter	**Annual Median**[(A)]	**95th Percentile**[(B)]
Total Phosphorus (mg/l)	0.7	1.75
Total Inorganic Nitrogen (mg/l)	7	14

[(A)] Reported as a running annual median, which is a median of all samples collected in the most recent 12 calendar months including samples collected in accordance with Regulation 85

[(B)] Reported as the 95th percentile of all samples taken in the most recent 12 calendar months including samples collected in accordance with Regulation 85

For discharges to classified streams, the following annual median total nitrogen WQBELs (Table 7b for Cold Water streams, and Table 7c for Warm Water streams) will apply for new facilities based on the appropriate upstream water quality and the interim nutrient water quality standards in Regulation 31.17. If the selected Total Nitrogen WQBEL is in the shaded portion of the table, the division will automatically apply the annual median technology-based effluent TIN limitations from Table 7a (Parts 1 & 2) instead. Regulation 31 Total Nitrogen limits will not apply to discharges to unclassified streams.

Table 7b - PART 1												
Total Nitrogen WQBEL[(A)] for New Facilities Discharging into Cold Water Classified Streams												
		1E5:Design Flow										
		0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Ambient Conc (mg/l)	**0**	1.25	2.5	3.75	5	6.25	7.5	8.75	10	11.25	12.5	13.75
	0.1	1.25	2.4	3.55	4.7	5.85	7	8.15	9.3	10.5	11.6	12.75
	0.2	1.25	2.3	3.35	4.4	5.45	6.5	7.55	8.6	9.65	10.7	11.75
	0.5	1.25	2	2.75	3.5	4.25	5	5.75	6.5	7.25	8	8.75
	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5	3.75
	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25

[(A)]Reported as a running annual median, which is a median of all samples collected in the most recent 12 calendar months including samples collected in accordance with Regulation 85

Table 7b - PART 2												
Total Nitrogen WQBEL[(A)] for New Facilities Discharging into Cold Water Classified Streams												
		1E5:Design Flow										
		12	**15**	**20**	**25**	**30**	**40**	**50**	**60**	**70**	**80**	**90**
Ambient Conc (mg/l)	**0**	16.3	20.0	26.3	32.5	38.8	51.3	63.8	76.3	88.8	101 [(B)]	114[(B)]
	0.1	15.1	18.5	24.3	30.0	35.8	47.3	58.8	70.3	81.8	93.3	105[(B)]
	0.2	13.9	17.0	22.3	27.5	32.8	43.3	53.8	64.3	74.8	85.3	95.8
	0.5	10.3	12.5	16.3	20.0	23.8	31.3	38.8	46.3	53.8	61.3	68.8
	1	4.25	5.00	6.25	7.50	8.75	11.3	13.8	16.3	18.8	21.3	23.8
	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25

[(A)]Reported as a running annual median, which is a median of all samples collected in the most recent 12 calendar months including samples collected in accordance with Regulation 85

[(B)] Total Nitrogen effluent limitation is capped at 100 mg/l in accordance with division practice.

Table 7c - PART 1												
Total Nitrogen WQBEL[(A)] for New Facilities Discharging into Warm Water Classified Streams												
		1E5:Design Flow										
		0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Ambient Conc (mg/l)	**0**	2.01	4.02	6.03	8.04	10.1	12.1	14.1	16.1	18.1	20	22
	0.1	2.01	3.92	5.83	7.74	9.65	11.6	13.5	15.4	17.3	19.2	21
	0.2	2.01	3.82	5.63	7.44	9.25	11.1	12.9	14.7	16.5	18.3	20
	0.5	2.01	3.52	5.03	6.54	8.05	9.56	11.1	12.6	14.1	15.6	17.1
	0.75	2.01	3.27	4.53	5.79	7.05	8.31	9.57	10.8	12.1	13.4	14.6
	1	2.01	3.02	4.03	5.04	6.05	7.06	8.07	9.08	10.1	11.1	12.1
	1.25	2.01	2.77	3.53	4.29	5.05	5.81	6.57	7.33	8.09	8.85	9.61
	1.5	2.01	2.52	3.03	3.54	4.05	4.56	5.07	5.58	6.09	6.6	7.11
	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01

[(A)]Reported as a running annual median, which is a median of all samples collected in the most recent 12 calendar months including samples collected in accordance with Regulation 85.

Table 7c - PART 2												
Total Nitrogen WQBEL[A] for New Facilities Discharging into Warm Water Classified Streams												
		1E5:Design Flow										
		12	**15**	**20**	**25**	**30**	**40**	**50**	**60**	**70**	**80**	**90**
Ambient Conc (mg/l)	**0**	26	32	42	52	62	82	103[B]	123[B]	143[B]	163[B]	183[B]
	0.1	25	31	40	50	59	78	98	117[B]	136[B]	155[B]	174[B]
	0.2	24	29	38	47	56	74	93	111[B]	129[B]	147[B]	165[B]
	0.5	20	25	32	40	47	62	78	93	108	123[B]	138[B]
	0.75	17.1	21	27	34	40	52	65	78	90	103[B]	115[B]
	1	14.1	17	22	27	32	42	53	63	73	83	93
	1.25	11.1	13.4	17.2	21	25	32	40	48	55	63	70
	1.5	8.13	9.66	12.2	14.8	17.3	22	28	33	38	43	48
	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01

[A]Reported as a running annual median, which is a median of all samples collected in the most recent 12 calendar months including samples collected in accordance with Regulation 85.
[B] Total Nitrogen effluent limitation is capped at 100 mg/l in accordance with division practice.

For discharges to classified streams, the following annual median total phosphorus WQBELs (Table 7d for Cold Water streams, and Table 7e for Warm Water streams) will apply for new facilities based on the appropriate upstream water quality and the interim nutrient water quality standards in Regulation 31.17. If the WQBEL is shaded in grey, the division will automatically apply the technology-based effluent limitations in Table 7a. Regulation 31 Total Phosphorus limits will not apply to discharges to unclassified streams.

Table 7d - PART 1												
Total Phosphorus WQBEL[A] for New Facilities Discharging into Cold Water Classified Streams												
		1E5:Design Flow										
		0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Ambient Conc (mg/l)	**0**	0.11	0.22	0.33	0.44	0.55	0.66	0.77	0.88	0.99	1.1	1.21
	0.01	0.11	0.21	0.31	0.41	0.51	0.61	0.71	0.81	0.91	1.01	1.11
	0.02	0.11	0.2	0.29	0.38	0.47	0.56	0.65	0.74	0.83	0.92	1.01
	0.05	0.11	0.17	0.23	0.29	0.35	0.41	0.47	0.53	0.59	0.65	0.71
	0.08	0.11	0.14	0.17	0.2	0.23	0.26	0.29	0.32	0.35	0.38	0.41
	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11

[A] Reported as a running annual median, (in mg/l) which is a median of all samples collected in the most recent 12 calendar months including samples collected in accordance with Regulation 85.

Table 7d - PART 2 Total Phosphorus WQBEL[A] for New Facilities Discharging into Cold Water Classified Streams												
		1E5:Design Flow										
		12	15	18	20	30	40	50	60	70	80	90
Ambient Conc (mg/l)	0	1.4	1.8	2.1	2.3	3.4	4.5	5.6	6.7	7.8	8.9	10.0
	0.01	1.3	1.6	1.9	2.1	3.1	4.1	5.1	6.1	7.1	8.1	9.1
	0.02	1.2	1.5	1.7	1.9	2.8	3.7	4.6	5.5	6.4	7.3	8.2
	0.05	0.8	1.0	1.2	1.3	1.9	2.5	3.1	3.7	4.3	4.9	5.5
	0.08	0.47	0.56	0.65	0.71	1.01	1.3	1.6	1.9	2.2	2.5	2.8
	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11

[A] Reported as a running annual median, (in mg/l) which is a median of all samples collected in the most recent 12 calendar months including samples collected in accordance with Regulation 85.

Table 7e - PART 1 Total Phosphorus WQBEL[A] for New Facilities Discharging into Warm Water Classified Streams												
		1E5:Design Flow										
		0	1	2	3	4	5	6	7	8	9	10
Ambient Conc (mg/l)	0	0.17	0.34	0.51	0.68	0.9	1.0	1.2	1.4	1.5	1.7	1.9
	0.01	0.17	0.33	0.49	0.65	0.81	1.0	1.1	1.3	1.5	1.61	1.8
	0.02	0.17	0.32	0.47	0.62	0.77	0.9	1.1	1.2	1.4	1.52	1.7
	0.05	0.17	0.29	0.41	0.53	0.65	0.77	0.89	1.0	1.1	1.25	1.4
	0.1	0.17	0.24	0.31	0.38	0.45	0.52	0.59	0.66	0.73	0.80	0.87
	0.13	0.17	0.21	0.25	0.29	0.33	0.37	0.41	0.45	0.49	0.53	0.57
	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17

[A] Reported as a running annual median (in mg/l), which is a median of all samples collected in the most recent 12 calendar months including samples collected in accordance with Regulation 85.

Table 7e - PART 2 Total Phosphorus WQBEL (A) for New Facilities Discharging into Warm Water Classified Streams												
		1E5:Design Flow										
		12	15	18	20	30	40	50	60	70	80	90
Ambient Conc (mg/l)	0	2.2	2.7	3.2	3.6	5.3	7.0	8.7	10	12	14[B]	15[B]
	0.01	2.1	2.6	3.1	3.4	5.0	6.6	8.2	10	11	13[B]	15[B]
	0.02	2.0	2.4	2.9	3.2	4.7	6.2	7.7	9.2	11	12	14[B]
	0.05	1.6	2.0	2.3	2.6	3.8	5.0	6.2	7.4	8.6	10	11
	0.1	1.0	1.2	1.4	1.6	2.3	3.0	3.7	4.4	5.1	5.8	6.5
	0.13	0.65	0.77	0.89	1.0	1.4	1.8	2.2	2.6	3.0	3.4	3.8
	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17

[A] Reported as a running annual median (in mg/l), which is a median of all samples collected in the most recent 12 calendar months including samples collected in accordance with Regulation 85.
[B] Total Phosphorus effluent limitation is capped at 12 mg/l in accordance with division practice. See the fact sheet for more information.

5. **Influent Parameters**

Regardless of whether or not an effluent discharge occurs and in order to obtain an indication of the current influent loading as compared to the approved capacity specified in the certification and in Part I.B; the permittee shall at least monitor the following influent parameters at the required frequencies, as identified in the certification of this permit, the results to be reported on the Discharge Monitoring Report (See Part I.E).

If the permittee monitors any parameter more frequently than required by the permit, using an approved test procedure or as specified in this permit, the result of this monitoring shall be included in the calculation and reporting of data to the Division. Such increased frequency shall also be indicated.

Self-monitoring samples taken in compliance with the monitoring requirements specified below shall be taken at Monitoring point 300I (or its equivalent as noted in the certification), at a representative point prior to any biological treatment.

Table 8a

Mechanical Plants With Design Flows Of Less Than Or Equal To 0.25 MGD

ICIS Code	Parameter	Discharge Limitations Maximum Concentrations			Monitoring Frequency [1]	Sample Type
		30-Day Avg.	7-Day Avg.	Daily Max.		
50050G	Flow, MGD	Report		Report	Continuous[2]	Recorder[2]
00180P	Plant Capacity (% of Hydraulic Capacity)[3]	Report			Monthly	Calculated[3]
80082G	CBOD5, mg/l[4]	Report	Report		Monthly	Composite[5]
00310G	BOD5, mg/l	Report	Report		Monthly	Composite[5]
00310G	BOD5, lbs/day	Report	Report		Monthly	Calculated
00180Q	Plant Capacity (% of Organic Capacity)[3]	Report			Monthly	Calculated[3]
00530G	Total Suspended Solids, mg/l	Report	Report		Monthly	Composite[5]
00978	Total Recoverable Arsenic[6]	Report			Monthly	Composite

Table 8b

Mechanical Plants With Design Flows Of Greater Than 0.25 MGD and Less Than 1 MGD

ICIS Code	Parameter	Discharge Limitations Maximum Concentrations			Monitoring Frequency[1]	Sample Type
		30-Day Avg.	7-Day Avg.	Daily Max.		
50050G	Flow, MGD	Report		Report	Continuous[2]	Recorder[2]
00180P	Plant Capacity (% of Hydraulic Capacity)[3]	Report			Monthly	Calculated[3]
80082G	$CBOD_5$, mg/l[4]	Report	Report		Weekly	Composite[5]
00310G	BOD_5, mg/l	Report	Report		Weekly	Composite[5]
00310G	BOD_5, lbs/day	Report	Report		Weekly	Calculated
00180Q	Plant Capacity (% of Organic Capacity)[3]	Report			Monthly	Calculated[3]
00530G	Total Suspended Solids, mg/l	Report	Report		Weekly	Composite[5]
00978G	Total Recoverable Arsenic[6]	Report			Monthly	Composite

1 Monitoring frequency reductions may be granted, in accordance with the Baseline Monitoring Frequency, Sample Type,

and Reduced Monitoring Frequency Policy for Industrial and Domestic Wastewater Treatment Facilities (WQP-20).

2 The monitoring frequency and sample type for effluent flow is specified in the certification and is fully enforceable under this permit. Mechanical type treatment facilities are typically required to have both influent and effluent flow measuring and recording devices. This requirement may be waived in cases where the division determines that either influent or effluent flow measurements are impractical. For these facilities, flow measuring and sampling type will be specified in the certification. If only one device is applicable, then that device will be used to report both influent and effluent flow. However, where these devices are not in place at the time of certification, the permittee has one year from the end of the calendar month that certification was given to install the required equipment. Where such equipment is in place, the frequency and type of flow monitoring will be "Continuous" and "Recorder", respectively. Where such equipment is not in place, the frequency and type of flow monitoring, during the interim period, will be specified in the certification. For certain facilities, the use of a metered pumping rate or potable water use or may be allowed. In these cases, the monitoring frequency and sample type will be determined and specified in the certification.

3 The % capacity is to be reported against the listed capacities for the design capacity and for the organic capacities as noted in the most recent Site Approval and as listed in the certification. The percentage should be calculated using the 30-day average values divided by the corresponding capacity, times 100.

4 Monitoring for CBOD5 will be added in addition to BOD5 on the influent sampling requirements when CBOD is used as a limitation on the effluent instead of BOD. This is needed to determine the percent removal of CBOD where applicable. BOD monitoring is still necessary to determine the organic loading in terms of percent capacity when Site Approvals are developed on BOD.

5 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 or sampling equal aliquots 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.

6 Total Recoverable Arsenic will be added to influent monitoring if a special study is required. Frequency of monitoring may be modified to match effluent sampling if more frequent.

Table 8c

Lagoon or other Non-Mechanical Facilities With Design Flows Of Less Than Or Equal To 0.5 MGD

ICIS Code	Parameter	Discharge Limitations Maximum Concentrations			Monitoring Frequency[1]	Sample Type
		30-Day Average	7-Day Avg.	Daily Max.		
50050G	Flow, MGD	Report		Report	Continuous[2]	Recorder[2]
00180P	Plant Capacity (% of Hydraulic Capacity)[3]	Report			Monthly	Calculated[3]
80082G	CBOD5, mg/l[4]	Report	Report		Monthly	Composite[5]
00310G	BOD5, mg/l	Report	Report		Monthly	Composite[5]
00310G	BOD5, lbs/day	Report	Report		Monthly	Calculated
00180Q	Plant Capacity (% of Organic Capacity)	Report			Monthly	Calculated[3]
00978G	Total Recoverable Arsenic[6]	Report			Monthly	Composite

Table 8d

Lagoon or other Non-Mechanical Facilities With Design Greater Than 0.5 MGD and Less Than 1 MGD

ICIS Code	Parameter	Discharge Limitations Maximum Concentrations			Monitoring Frequency[1]	Sample Type
		30-Day Avg.	7-Day Avg.	Daily Max.		
50050G	Flow, MGD	Report		Report	Continuous[2]	Recorder[2]
00180P	Plant Capacity (% of Hydraulic Capacity)[3]	Report			Monthly	Calculated[3,5]
80082G	CBOD5, mg/l[4]	Report	Report		Weekly	Composite[5]

00310G	BOD5, mg/l	Report	Report		Weekly	Composite[5]
00310G	BOD5, lbs/day	Report	Report		Weekly	Calculated[5]
00180Q	Plant Capacity (% of Organic Capacity)	Report			Monthly	Calculated[3,5]
00978G	Total Recoverable Arsenic[6]	Report			Monthly	Composite

1 Monitoring frequency reductions may be granted, in accordance with the Baseline Monitoring Frequency, Sample Type, and Reduced Monitoring Frequency Policy for Industrial and Domestic Wastewater Treatment Facilities (WQP-20).

2 The monitoring frequency and sample type for effluent flow is specified in the certification and is fully enforceable under this permit. Lagoon type and OWTS treatment facilities are typically required to have both influent and effluent flow measuring and recording devices. This requirement may be waived in cases where the division determines that either influent or effluent flow measurements are impractical. For these facilities, flow measuring and sampling type will be specified in the certification. If only one device is applicable, then that device will be used to report both influent and effluent flow. However, where these devices are not in place at the time of certification, the permittee has one year from the end of the calendar month that certification was given to install the required equipment. Where such equipment is in place, the frequency and type of flow monitoring will be "Continuous" and "Recorder", respectively. Where such equipment is not in place, the frequency and type of flow monitoring, during the interim period, will be specified in the certification. For certain facilities, the use of a metered pumping rate or potable water use or may be allowed. In these cases, the monitoring frequency and sample type will be determined and specified in the certification.

3 The % capacity is to be reported against the listed capacities for the design capacity and for the organic capacities as noted in the most recent Site Approval and as listed in the certification. The percentage should be calculated using the 30-day average values divided by the corresponding capacity, times 100.

4 Monitoring for $CBOD_5$ will be added in addition to BOD_5 on the influent sampling requirements when CBOD is used as a limitation on the effluent instead of BOD. This is needed to determine the percent removal of CBOD where applicable. BOD monitoring is still necessary to determine the organic loading in terms of percent capacity when Site Approvals are developed on BOD.

5 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 or sampling equal aliquots will be allowed. The monitoring frequency and sample type will be specified in the certification. If the division determines that a representative sample of influent flow is impractical (e.g. septic tank at individual buildings), 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.

6 Total Recoverable Arsenic will be added to influent monitoring if a special study is required. Frequency of monitoring may be modified to match effluent sampling if more frequent.

C. TERMS AND CONDITIONS

1. Service Area

All wastewater flows contributed in the service area may be accepted by the WWTFs under this permit for treatment at the permittee's wastewater treatment plant provided that such acceptance does not cause or contribute to an exceedance of the throughput or design capacity of the treatment works or the effluent limitations in Part I.B, or constitute a substantial impact to the functioning of the treatment works, degrade the quality of the receiving waters, or harm human health, or the environment.

In addition, the permittee shall enter into and maintain service agreements with any municipalities that discharge into the wastewater treatment facility. The service agreements shall contain all provisions necessary to protect the financial, physical, and operational integrity of the wastewater treatment works.

2. Design Capacity

The design capacities of the WWTFs under this permit will be based on the levels shown in the respective Site Approvals for these WWTFs. The hydraulic design capacity of these domestic

wastewater treatment works will be shown in units of million gallons per day (MGD) based on a 30-day average flow, and organic loading in units of lbs. BOD5 per day based on a 30-day average load.

3. **Expansion Requirements**

Pursuant to Colorado Law, C.R.S. 25-8-501 (5 d & e), the permittee is required to initiate engineering and financial planning for expansion of the domestic wastewater treatment works whenever throughput reaches eighty (80) percent of the treatment capacity. Such planning may be deemed unnecessary upon a showing that the area served by the domestic wastewater treatment works has a stable or declining population; but this provision shall not be construed as preventing periodic review by the Division should it be felt that growth is occurring or will occur in the area.

The permittee shall commence construction of such domestic wastewater treatment works expansion whenever throughput reaches ninety-five (95) percent of the treatment capacity or, in the case of a municipality, either commence construction or cease issuance of building permits within such municipality until such construction is commenced; except that building permits may continue to be issued for any construction which would not have the effect of increasing the input of wastewater to the sewage treatment works of the municipality involved.

Where unusual circumstances result in throughput exceeding 80% of treatment capacity, the permittee may, in lieu of initiating planning for expansion, submit a report to the Division that demonstrates that it is unlikely that the event will reoccur, or even if it were to reoccur, that 95% of the treatment capacity would not be exceeded.

Where unusual circumstances result in throughput exceeding 95% of the treatment capacity, the permittee may, in lieu of initiating construction of the expansion, submit a report to the Division that demonstrates that the domestic wastewater treatment works was in compliance at all times during the events and that it is extremely unlikely that the event will reoccur.

Where the permittee submits a report pursuant to unusual circumstances, and the Division, upon review of such report, determines in writing to the permittee that the report does not support the required findings, the permittee shall initiate planning and/or construction of the domestic wastewater treatment works as appropriate.

4. **Facilities Operation and Maintenance**

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control including all portions of the collection system and lift stations owned by the permittee (and related appurtenances) which are installed or used by the permittee as necessary to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes effective performance, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems when installed by the permittee only when necessary to achieve compliance with the conditions of the permit.

Any sludge produced at the wastewater treatment facility shall be disposed of in accordance with State and Federal regulations. The permittee shall take all reasonable steps to minimize or prevent any discharge of sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. As necessary, accelerated or additional monitoring to determine the nature and impact of the noncomplying discharge is required.

5. **Best Management Practices**

a. If the domestic wastewater treatment facility consists of an on-site wastewater treatment system (OWTS), (e.g., septic system), the permittee shall employ best management practices (BMPs) to effectively manage the onsite treatment system and to minimize the potential risk of any unintentional release of pollutants. Best management practices shall include, but are not limited

to the following:

i. 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.
ii. Inspect the scum level and sludge level in each septic tank (as applicable) in order to know when the particular septic tank needs to be pumped. Have the septic tank pumped by a licensed pumping contractor.
iii. 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.
iv. Make every effort to prevent hazardous waste, toxic waste, and/or recreational vehicle (RV) septage from entering any on-site wastewater treatment system (OWTS), as applicable.

b. Where a Division approved Operation and Maintenance (O&M) Plan is required as a condition of the Site Application Approval, the Permittee shall operate and maintain the wastewater treatment plant in accordance with the approved O&M plan.

The certification for discharge may include a special report schedule or other permit requirement.

6. **Change In Conditions**

Any change to the domestic wastewater treatment plant, or to the wastewater it receives, which results in an inability to meet any condition identified in the "Certification Requirements" at Part I.A.3., above, must be reported to the Division within ten (10) working days of the date the permittee becomes aware of such change. The Division will require the permittee to apply for and obtain an individual permit if it determines that the domestic wastewater treatment plant no longer qualifies for authorization to discharge under the general permit.

7. **Lagoon Liner Integrity**

For those facilities that use a lagoon as treatment for meeting the permit limitations, the Division will require proof that the lagoon linear meets the allowable seepage rate of $1 * 10^{-6}$ cm/sec. The certification for discharge may include a compliance schedule or other permit requirement to show that the liner is in place and is functioning appropriately.

8. **Acute WET Testing**

a. General Acute WET Testing and Reporting Requirements

The permittee shall conduct an acute 48-hour WET test using Ceriodaphnia dubia and an acute 96-hour WET test using Pimephales promelas. Acute tests shall be conducted as a static replacement test using a single effluent grab sample. The permittee shall conduct each acute WET test in accordance with the 40 CFR Part 136 methods described in Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms, Fifth Edition, October 2002 (EPA-821-R-02-012) or its most current edition. The following specifications may be added to the acute WET method in the certification:

Use of the 0.01 alpha level – The permittee may request use of the 0.01 alpha level, and if specified in the certification, this alpha level shall be used for every WET test under the certification. In this case, the permittee is responsible for determining whether an increase in replicates within each individual test is needed to assure that the test meets the minimum sensitivity requirements. Chapter 2 of the Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing, EPA 821-B-00-004, USEPA, July 2000, must be used to calculate and determine if the minimum significant difference (MSD) requirement has been met. If this requirement is not met, the test is considered invalid and retesting must be performed during the monitoring period. The permittee will be required to submit documentation showing that the appropriate number of replicates was used and that the

proper MSD criterion has been met, with the WET information summary that is submitted to the Division with the WET test results.

Use of a CO2 atmosphere to control pH drift – The use of a CO2 atmosphere may be allowed, if specified in the certification, to control ammonia toxicity due to pH drift. The proper methodology as outlined in the Chronic Method must be followed and documented during the test. The permittee will be required to submit documentation showing that the proper methodology was used in the testing with the WET information summary that is submitted to the Division with the WET test results.

The following minimum dilution series should be used: 0% effluent (control), 20%, 40%, 60%, 80%, and 100% effluent. If the permittee uses more dilutions than prescribed, and accelerated testing is to be performed, the same dilution series shall be used in the accelerated testing as was used in the failed test.

Tests shall be done at the frequency listed in the certification. Test results shall be reported along with the Discharge Monitoring Report (DMR) submitted for the end of the reporting period when the sample was taken. (i.e., WET testing results for the calendar quarter ending March 31 shall be reported with the DMR due April 28, etc.) The permittee shall submit all laboratory statistical summary sheets, summaries of the determination of a valid, invalid or inconclusive test, and copies of the chain of custody forms, along with the DMR for the reporting period.

If a test is considered invalid, the permittee is required to perform additional testing during the monitoring period to obtain a valid test result. Failure to obtain a valid test result during the monitoring period shall result in a violation of the permit for failure to monitor.

b. Violations of the Permit Limit and Division Notification

An acute WET test is failed whenever the LC50, which represents an estimate of the effluent concentration which is lethal to 50% of the test organisms in the time period prescribed by the test, is found to be less than or equal to 100% effluent. The permittee must provide written notification of the failure of a WET test to the Division, along with a statement as to whether

accelerated testing or a Toxicity Identification Evaluation (TIE) is being performed, unless otherwise exempted, in writing, by the Division. **Notification must be received by the Division within 14 calendar days of the permittee receiving notice of the WET testing results.**

c. Automatic Compliance Response

The permittee is responsible for implementing the automatic compliance response provisions of this permit when one of the following occurs:

- there is a violation of the permit limit (the LC50 endpoint is less than the applicable IWC)
- during a report-only period, when the LC50 endpoint is less than the applicable IWC
- the permittee is otherwise informed by the Division that a compliance response is necessary

When one of the above listed events occurs, the following automatic compliance response shall apply. The permittee shall either:

- conduct accelerated testing using the single species found to be more sensitive
- conduct a Toxicity Identification Evaluation / Toxicity Reduction Evaluation (TIE/TRE) investigation as described below.

If accelerated testing is being performed, testing will be at least once every two weeks for up to five tests, at the appropriate IWC, with only one test being run at a time. Accelerated testing shall continue until; 1) two consecutive tests fail or three of five tests fail, in which case a pattern of toxicity has been demonstrated or 2) two consecutive tests pass or three of five tests pass, in which case no pattern of toxicity has been found. Note that the same dilution series should be used in the accelerated testing as was used in the initial test(s) that result in the accelerated testing requirement.

If no pattern of toxicity is found the toxicity episode is considered to be ended and routine testing is to resume. If a pattern of toxicity is found, a TIE/TRE investigation is to be performed. If a pattern of toxicity is not demonstrated but a significant level of erratic toxicity is found, the Division may require an increased frequency of routine monitoring or some other modified approach. The permittee shall provide written notification of the results within 14 calendar days of completion of the Pattern of Toxicity/No Toxicity demonstration.

ii. Toxicity Identification Evaluation / Toxicity Reduction Evaluation (TIE/TRE)

If a TIE/TRE is being performed, the results of the investigation are to be received by the Division within 180 calendar days of the demonstration of acute WET in the routine test, as defined above, or if accelerated testing was performed, the date the pattern of toxicity is demonstrated. A status report is to be provided to the Division at the 60 and 120 calendar day points of the TIE/TRE investigation. The Division may extend the time frame for investigation where reasonable justification exists. A request for an extension must be made in writing and received prior to the 180 calendar day deadline. Such request must include a justification and supporting data for such an extension.

Under a TIE, the permittee may use the time for investigation to conduct a preliminary TIE (PTIE) or move directly into the TIE. A PTIE consists of a brief search for possible sources of WET, where a specific parameter(s) is reasonably suspected to have caused such toxicity, and could be identified more simply and cost effectively than a formal TIE. If the PTIE allows resolution of the WET incident, the TIE need not necessarily be conducted in its entirety. If, however, WET is not identified or resolved during the PTIE, the TIE must be conducted within the allowed 180 calendar day time frame.

The Division recommends that the EPA guidance documents regarding TIEs be followed. If another method is to be used, this procedure should be submitted to the Division prior to initiating the TIE.

If the pollutant(s) causing toxicity is/are identified, and is/are controlled by a permit effluent limitation(s), this permit may be modified upon request to adjust permit requirements regarding the automatic compliance response.

If the pollutant(s) causing toxicity is/are identified, and is/are not controlled by a permit effluent limitation(s), the Division may develop limitations the parameter(s), and the permit may be reopened to include these limitations.

If the pollutant causing toxicity is not able to be identified, or is unable to be specifically identified, or is not able to be controlled by an effluent limit, the permittee will be required to perform either item 1 or item 2 below.

1) Conduct an investigation which demonstrates actual instream aquatic life conditions upstream and downstream of the discharge, or identify, for Division approval, and conduct an alternative investigation which demonstrates the actual instream impact. This should include WET testing and chemical analyses of the ambient water. Depending on the results

of the study, the permittee may also be required to identify the control program necessary to eliminate the toxicity and its cost. Data collected may be presented to the WQCC for consideration at the next appropriate triennial review of the stream standards;

2) Move to a TRE by identifying the necessary control program or activity and proceed with elimination of the toxicity so as to meet the WET effluent limit.

If toxicity spontaneously disappears in the midst of a TIE, the permittee shall notify the Division within 10 calendar days of such disappearance. The Division may require the permittee to conduct accelerated testing to demonstrate that no pattern of toxicity exists, or may amend the permit to require an increased frequency of WET testing for some period of time. If no pattern of toxicity is demonstrated through the accelerated testing or the increased monitoring frequency, the toxicity incident response will be closed and normal WET testing shall resume.

The control program developed during a TRE consists of the measures determined to be the most feasible to eliminate WET. This may happen through the identification of the toxicant(s) and then a control program aimed specifically at that toxicant(s) or through the identification of more general toxicant treatability processes. A control program is to be developed and submitted to the Division within 180 calendar days of beginning a TRE. Status reports on the TRE are to be provided to the Division at the 60 and 120 calendar day points of the TRE investigation.

If toxicity spontaneously disappears in the midst of a TRE, the permittee shall notify the Division within 10 calendar days of such disappearance. The Division may require the permittee to conduct accelerated testing to demonstrate that no pattern of toxicity exists, or may amend the permit to require an increased frequency for some period of time. If no pattern of toxicity is demonstrated through the accelerated testing or the increased monitoring frequency, the toxicity incident response will be closed and normal WET testing shall resume.

d. Toxicity Reopener

This permit may be reopened and modified to include additional or modified numerical permit limitations, new or modified compliance response requirements, changes in the WET testing protocol, the addition of both acute and chronic WET requirements, or any other conditions related to the control of toxicants.

9. **Chronic WET Testing**

a. General Chronic WET Testing and Reporting Requirements

The permittee shall conduct the chronic WET test using Ceriodaphnia dubia and Pimephales promelas, as a static renewal 7-day test using three separate composite or grab samples, as specified in the certification. The permittee shall conduct each chronic WET test in accordance with the 40 CFR Part 136 methods described in Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition, October 2002 (EPA-821-R-02-013) or the most current edition. The following specifications may be added to the chronic WET method:

Use of the 0.01 alpha level – The permittee has requested use of the 0.01 alpha level, and therefore this alpha level shall be used for every WET test under this permit. The permittee is responsible for determining whether an increase in replicates within each individual test is needed to assure that the test meets the minimum sensitivity requirements. Chapter 2 of the Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing, EPA 821-B-00-004, USEPA, July 2000, must be used to calculate and determine if the minimum significant difference (MSD) requirement has been met. If this requirement is not met, the

test is considered invalid and retesting must be performed during the monitoring period. The permittee will be required to submit documentation showing that the appropriate number of replicates was used and that the proper MSD criterion has been met, with the WET information summary that is submitted to the Division with the WET test results.

Use of a CO2 atmosphere to control pH drift – The use of a CO2 atmosphere will be allowed to control ammonia toxicity due to pH drift. The proper methodology as outlined in the Chronic Method must be followed and documented during the test. The permittee will be required to submit documentation showing that the proper methodology was used in the testing with the WET information summary that is submitted to the Division with the WET test results.

Ceriodaphnia reproduction percentage - For the chronic Ceriodaphnia dubia test, the termination requirement shall be where 80% or more of the surviving control females having produced their third brood. If this requirement is not met, the test is considered invalid and retesting must be performed during the monitoring period. The permittee will be required to submit documentation showing that the appropriate number of the surviving control females have had their third brood with the WET information summary that is submitted to the Division with the WET test results.

The following minimum dilution series should be used based on the IWC calculated in the certification: 0% effluent (control), IWC/4%, IWC/2%, IWC%, (IWC+100)/2%, and 100% effluent. If the permittee uses more dilutions than prescribed, and accelerated testing is to be performed, the same dilution series shall be used in the accelerated testing (if applicable) as was initially used in the failed test.

Tests shall be done at the frequency listed in the certification. Test results shall be reported along with the Discharge Monitoring Report (DMR) submitted for the end of the reporting period when the sample was taken. (i.e., WET testing results for the calendar quarter ending March 31 shall be reported with the DMR due April 28, etc.) The permittee shall submit all laboratory statistical summary sheets, summaries of the determination of a valid, invalid or inconclusive test, and copies of the chain of custody forms, along with the DMR for the reporting period.

If a test is considered invalid, the permittee is required to perform additional testing during the monitoring period to obtain a valid test result. Failure to obtain a valid test result during the monitoring period shall result in a violation of the permit for failure to monitor.

b. Violations of the Permit Limit, Failure of One Test Statistical Endpoint and Division Notification

A chronic WET test is considered a violation of a permit limitation when both the NOEC and the IC25, for the same sub-lethal endpoint are at any effluent concentration less than the IWC. This determination is made independently for each test species. **The IWC for each facility covered by this general permit will be outlined in the certification.**

A chronic WET test is considered to have failed one of the two statistical endpoints when either the NOEC or the IC25 are at any effluent concentration less than the IWC. Simultaneous failure of both the NOEC and IC25 for both sub-lethal endpoints, when tests are performed on identical split samples, constitutes only a single violation of the Daily Maximum Effluent Limitation for Chronic WET specified in the certification. **The IWC for each facility covered by this general permit will be outlined in the certification.**

In the event of a permit violation, or during a report only period when both the NOEC and the IC25 are at any effluent concentration less than the IWC, or when two consecutive reporting periods have resulted in failure of one of the two statistical endpoints (regardless of which statistical endpoints are failed), the permittee must provide written notification to the Division. Such notification should explain whether it was a violation or two consecutive failures of a single

endpoint, and must indicate whether accelerated testing or a Toxicity Identification Evaluation or Toxicity Reduction Evaluation (TIE or TRE) is being performed, unless otherwise exempted, in writing, by the Division. **Notification must be received by the Division within 14 calendar days of the permittee receiving notice of the WET testing results.**

c. Automatic Compliance Response

The permittee is responsible for implementing the automatic compliance response provisions of this permit when one of the following occurs:

- there is a violation of the permit limit (both the NOEC and the IC25 endpoints are less than the applicable IWC)
- during a report only period when both the NOEC and the IC25 are at any effluent concentration less than the IWC
- two consecutive monitoring periods have resulted in failure of one of the two statistical endpoints (either the IC25 or the NOEC) , including during a report-only period. This determination is made independently for each test species.
- the permittee is otherwise informed by the Division that a compliance response is necessary

When one of the above listed events occurs, the following automatic compliance response shall apply. The permittee shall either:

- conduct accelerated testing using the single species found to be more sensitive
- conduct a Toxicity Identification Evaluation (TIE) or a Toxicity Reduction Evaluation (TRE) investigation as described below.

i. Accelerated Testing

If accelerated testing is being performed, testing will be at least once every two weeks for up to five tests with only one test being run at a time, using only the IC25 statistical endpoint to determine if the test passed or failed at the appropriate IWC. Accelerated testing shall continue until; 1) two consecutive tests fail or three of five tests fail, in which case a pattern of toxicity has been demonstrated or 2) two consecutive tests pass or three of five tests pass, in which case no pattern of toxicity has been found. Note that the same dilution series should be used in the accelerated testing as was used in the initial test(s) that result in the accelerated testing requirement.

If accelerated testing is required due to failure of one statistical endpoint in two consecutive monitoring periods, and in both of those failures it was the NOEC endpoint that was failed, then the NOEC shall be the only statistical endpoint used to determined whether the accelerated testing passed or failed at the appropriate IWC. Note that the same dilution series should be used in the accelerated testing as was used in the initial test(s) that result in the accelerated testing requirement.

If no pattern of toxicity is found the toxicity episode is considered to be ended and routine testing is to resume. If a pattern of toxicity is found, a TIE/TRE investigation is to be performed. If a pattern of toxicity is not demonstrated but a significant level of erratic toxicity is found, the Division may require an increased frequency of routine monitoring or some other modified approach. The permittee shall provide written notification of the results within 14 calendar days of completion of the Pattern of Toxicity/No Toxicity demonstration.

ii. Toxicity Identification Evaluation (TIE) or Toxicity Reduction Evaluation (TRE)

If a TIE or a TRE is being performed, the results of the investigation are to be received by the Division within 180 calendar days of the demonstration chronic WET in the routine test, as defined above, or if accelerated testing was performed, the date the pattern of toxicity is demonstrated. A status report is to be provided to the Division at the 60 and 120 calendar day points of the TIE or TRE investigation. The Division may extend the time frame for investigation where reasonable justification exists. A request for an extension must be made in writing and received prior to the 180 calendar day deadline. Such request must include a justification and supporting data for such an extension.

Under a TIE, the permittee may use the time for investigation to conduct a preliminary TIE (PTIE) or move directly into the TIE. A PTIE consists of a brief search for possible sources of WET, where a specific parameter(s) is reasonably suspected to have caused such toxicity, and could be identified more simply and cost effectively than a formal TIE. If the PTIE allows resolution of the WET incident, the TIE need not necessarily be conducted in its entirety. If, however, WET is not identified or resolved during the PTIE, the TIE must be conducted within the allowed 180 calendar day time frame.

The Division recommends that the EPA guidance documents regarding TIEs be followed. If another method is to be used, this procedure should be submitted to the Division prior to initiating the TIE.

If the pollutant(s) causing toxicity is/are identified, and is/are controlled by a permit effluent limitation(s), this permit may be modified upon request to adjust permit requirements regarding the automatic compliance response.

If the pollutant(s) causing toxicity is/are identified, and is/are not controlled by a permit effluent limitation(s), the Division may develop limitations the parameter(s), and the permit may be reopened to include these limitations.

If the pollutant causing toxicity is not able to be identified, or is unable to be specifically identified, or is not able to be controlled by an effluent limit, the permittee will be required to perform either item 1 or item 2 below.

1) Conduct an investigation which demonstrates actual instream aquatic life conditions upstream and downstream of the discharge, or identify, for Division approval, and conduct an alternative investigation which demonstrates the actual instream impact. This should include WET testing and chemical analyses of the ambient water. Depending on the results of the study, the permittee may also be required to identify the control program necessary to eliminate the toxicity and its cost. Data collected may be presented to the WQCC for consideration at the next appropriate triennial review of the stream standards;

2) Move to a TRE by identifying the necessary control program or activity and proceed with elimination of the toxicity so as to meet the WET effluent limit.

If toxicity spontaneously disappears in the midst of a TIE, the permittee shall notify the Division within 10 calendar days of such disappearance. The Division may require the permittee to conduct accelerated testing to demonstrate that no pattern of toxicity exists, or may amend the permit to require an increased frequency of WET testing for some period of time. If no pattern of toxicity is demonstrated through the accelerated testing or the increased monitoring frequency, the toxicity incident response will be closed and normal WET testing shall resume.

The control program developed during a TRE consists of the measures determined to be the most feasible to eliminate WET. This may happen through the identification of the toxicant(s)

and then a control program aimed specifically at that toxicant(s) or through the identification of more general toxicant treatability processes. A control program is to be developed and submitted to the Division within 180 calendar days of beginning a TRE. Status reports on the TRE are to be provided to the Division at the 60 and 120 calendar day points of the TRE investigation.

If toxicity spontaneously disappears in the midst of a TRE, the permittee shall notify the Division within 10 calendar days of such disappearance. The Division may require the permittee to conduct accelerated testing to demonstrate that no pattern of toxicity exists, or may amend the permit to require an increased frequency for some period of time. If no pattern of toxicity is demonstrated through the accelerated testing or the increased monitoring frequency, the toxicity incident response will be closed and normal WET testing shall resume.

d. Toxicity Reopener

This permit may be reopened and modified to include additional or modified numerical permit limitations, new or modified compliance response requirements, changes in the WET testing protocol, the addition of both acute and chronic WET requirements, or any other conditions related to the control of toxicants.

10. **Compliance Schedule(s)**

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. For instance, a certification for an existing discharger under this general permit may contain a compliance schedule if there is a new water quality based effluent limitation or if a water quality based effluent limitation becomes more stringent. The terms and conditions of the compliance schedule will be modeled after the examples in the fact sheet and will include dates for submitting specific reports or the completion of various activities needed to meet the final permit limitations. Compliance schedules will include enforceable milestones at least once a year.

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 due date. The specific report or action item is due by the date listed in the compliance schedule.

11. **Special Studies and Additional Monitoring**

Pursuant to Regulation 61.9(2)(f), this general permit authorizes the inclusion in certifications of additional reporting requirements based on site specific considerations including but not limited to a Salinity Study; Groundwater Protection Study; Infiltration/Inflow study; Onsite-Wastewater Treatment System Annual Report; or Installing Flow Measurement Devices. These requirements will vary depending on site-specific considerations and will be fully enforceable under this permit.

12. **Industrial Waste Management**

a. The Permittee has the responsibility to protect the Domestic Wastewater Treatment Works (DWTW), as defined at section 25.8.103(5) of the Colorado Water Quality Control Act, or the Publicly-Owned Treatment Works (POTW), as defined at 40 CFR section 403.3(q) of the federal pretreatment regulations, from pollutants which would cause pass through or interference, as defined at 40 CFR 403.3(p) and (k), or otherwise be incompatible with operation of the treatment works including interference with the use or disposal of municipal sludge.

b. Pretreatment Standards (40 CFR Section 403.5) developed pursuant to Section 307 of the Federal Clean Water Act (the Act) require that the Permittee shall not allow, under any circumstances, the introduction of the following pollutants to the DWTW from any source of non-domestic discharge:

   i. Pollutants which create a fire or explosion hazard in the DWTW, including, but not limited to, wastestreams with a closed cup flashpoint of less than sixty (60) degrees Centigrade (140 degrees Fahrenheit) using the test methods specified in 40 CFR Section 261.21;

   ii. Pollutants which will cause corrosive structural damage to the DWTW, but in no case discharges with a pH of lower than 5.0 s.u., unless the treatment facilities are specifically designed to accommodate such discharges;

   iii. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the DWTW, or otherwise interfere with the operation of the DWTW;

   iv. Any pollutant, including oxygen demanding pollutants (e.g., BOD), released in a discharge at a flow rate and/or pollutant concentration which will cause Interference with any treatment process at the DWTW;

   v. Heat in amounts which will inhibit biological activity in the DWTW resulting in Interference, but in no case heat in such quantities that the temperature at the DWTW treatment plant exceeds forty (40) degrees Centigrade (104 degrees Fahrenheit) unless the Approval Authority, upon request of the DWTW, approves alternate temperature limits;

   vi. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through;

   vii. Pollutants which result in the presence of toxic gases, vapors, or fumes within the DWTW in a quantity that may cause acute worker health and safety problems;

   viii. Any trucked or hauled pollutants, except at discharge points designated by the DWTW; and

   ix. Any specific pollutant that exceeds a local limitation established by the Permittee in accordance with the requirements of 40 CFR Section 403.5(c) and (d).

   x. Any other pollutant which may cause Pass Through or Interference.

c. EPA shall be the Approval Authority and the mailing address for all reporting and notifications to the Approval Authority shall be: USEPA 1595 Wynkoop St. 8ENF-W-NP, Denver, CO 80202-1129. Should the State be delegated authority to implement and enforce the Pretreatment Program in the future, the Permittee shall be notified of the delegation and the state permitting authority shall become the Approval Authority.

d. In addition to the general limitations expressed above, more specific Pretreatment Standards have been and will be promulgated for specific industrial categories under Section 307 of the Act (40 CFR Part 405 et. seq.).

e. The Permittee must notify the state permitting authority and the Approval Authority, of any new introductions by new or existing industrial users or any substantial change in pollutants from any industrial user within sixty (60) calendar days following the introduction or change. Such notice must identify:

i. Any new introduction of pollutants into the DWTW from an industrial user which would be subject to Sections 301, 306, or 307 of the Act if it were directly discharging those pollutants; or

ii. Any substantial change in the volume or character of pollutants being introduced into the DWTW by any industrial user;

iii. For the purposes of this section, adequate notice shall include information on:

(A) The identity of the industrial user;

(B) The nature and concentration of pollutants in the discharge and the average and maximum flow of the discharge to be introduced into the DWTW; and

(C) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from or biosolids or sludge produced at such DWTW.

iv. For the purposes of this section, an industrial user shall include:

(A) Any discharger subject to Categorical Pretreatment Standards under Section 307 of the Act and 40 CFR chapter I and subchapter N;

(B) Any discharger which has a process wastewater flow of 25,000 gallons or more per day;

(C) Any discharger contributing five percent or more of the average dry weather hydraulic or organic capacity of the DWTW treatment plant;

(D) Any discharger who is designated by the Approval Authority as having a reasonable potential for adversely affecting the DWTWs operation or for violating any Pretreatment Standard or requirements;

f. At such time as a specific Pretreatment Standard or requirement becomes applicable to an industrial user of the Permittee, the state permitting authority and/or Approval Authority may, as appropriate:

i. Amend the Permittee's NPDES discharge permit to require the Permittee to develop and submit an approvable Pretreatment program under a compliance schedule, in accordance with procedures in 40 CFR 403.8(e). The modification of a POTW's NPDES Permit for the purposes of incorporating a POTW Pretreatment Program approved in accordance with the procedure in §403.11 shall be deemed a minor Permit modification subject to the procedures in 40 CFR 122.63(g); or,;

ii. Require the Permittee to specify, by ordinance, order, or other enforceable means, the type of pollutant(s) and the maximum amount which may be discharged to the Permittee's DWTW for treatment. Such requirement shall be imposed in a manner consistent with the program development requirements of the General Pretreatment Regulations at 40 CFR Part 403; and/or,

iii. Require the Permittee to monitor its discharge for any pollutant which may likely be discharged from the Permittee's DWTW, should the industrial user fail to properly pretreat its waste.

The state permitting authority and the Approval Authority retains, at all times, the right to take legal action against any source of nondomestic discharge, whether directly or indirectly controlled by

the Permittee, for violations of a permit, order or similar enforceable mechanism issued by the Permittee, violations of any Pretreatment Standard or requirement, or for failure to discharge at an acceptable level under national standards issued by EPA under 40 CFR, chapter I, subchapter N. In those cases where a CDPS permit violation has occurred because of the failure of the Permittee to properly develop and enforce Pretreatment Standards and requirements as necessary to protect the DWTW, the state permitting authority and/or Approval Authority shall hold the Permittee and/or industrial user responsible and may take legal action against the Permittee as well as the Industrial user(s) contributing to the permit violation.

D. DEFINITIONS OF TERMS

1. "Acute Toxicity" - The acute toxicity limitation is exceeded if the LC50 is at any effluent concentration less than or equal to the IWC indicated in this permit.

2. "Antidegradation limits" – See "Two (2) - Year Rolling Average".

3. "Applicable water quality criterion (AWQC)" is the quantitation target level or goal. The AWQC may be one of the following:

   Where an effluent limit has been established,
   i. The AWQC is the effluent limit.

   Where an effluent limit has not been established, the AWQC may be
   i. An applicable technology based effluent limit (TBEL);
   ii. Half of a water quality standard;
   iii. Half of a water quality standard as assessed in the receiving water, or potential WQBEL; or
   iv. Half of a potential antidegradation based effluent limitation, which can be an antidegradation based average concentration or a potential non-impact limit.

4. "Chronic toxicity", which includes lethality and growth or reproduction, occurs when the NOEC and IC25 are at an effluent concentration less than the IWC indicated in this permit.

5. "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).

6. "Continuous" measurement, is a measurement obtained from an automatic recording device which continually measures the effluent for the parameter in question, or that provides measurements at specified intervals.

7. "Daily Maximum limitation" for all parameters (except temperature, pH and dissolved oxygen) means the limitation for this parameter shall be applied as an average of all samples collected in one calendar day. For these parameters the DMR shall include the highest of the daily averages. For pH and dissolved oxygen, this means an instantaneous maximum (and/or instantaneous minimum) value. The instantaneous value is defined as the analytical result of any individual sample. For pH and dissolved oxygen, DMRs shall include the maximum (and/or minimum) of all instantaneous values within the calendar month. Any value beyond the noted daily maximum limitation for the indicated parameter shall be considered a violation of this permit

8. "Daily Maximum Temperature (DM)" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as the highest two-hour average water temperature recorded during a given 24-hour period. This will be determined using a rolling 2-hour maximum temperature. If data is collected every 15 minutes, a 2 hour maximum can be determined on every data point after the initial 2 hours

of collection. Note that the time periods that overlap days (Wednesday night to Thursday morning) do not matter as the reported value on the DMR is the greatest of all the 2-hour averages.

This would continue throughout the course of a calendar day. The highest of these 2 hour averages over a month would be reported on the DMR as the daily maximum temperature. At the end/beginning of a month, the collected data should be used for the month that contains the greatest number of minutes in the 2-hour maximum.

9. "Dissolved (D) metals fraction" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as that portion of a water and suspended sediment sample which passed through a 0.40 or 0.45 UM (micron) membrane filter. Determinations of "dissolved" constituents are made using the filtrate. This may include some very small (colloidal) suspended particles which passed through the membrane filter as well as the amount of substance present in true chemical solution.

10. "Geometric mean" for *E. coli* bacteria concentrations, the thirty (30) day and seven (7) day averages shall be determined as the geometric mean of all samples collected in a thirty (30) day period and the geometric mean of all samples taken in a seven (7) consecutive day period respectively. The geometric mean may be calculated using two different methods. For the methods shown, a, b, c, d, etc. are individual sample results, and n is the total number of samples.

    Method 1:

    Geometric Mean = $(a*b*c*d*...)^{(1/n)}$ "*" - means multiply

    Method 2:

    Geometric Mean = antilog ([log(a)+log(b)+log(c)+log(d)+...]/n)

    Graphical methods, even though they may also employ the use of logarithms, may introduce significant error and may not be used.

    In calculating the geometric mean, for those individual sample results that are reported by the analytical laboratory to be "less than" a numeric value, a value of 1 should be used in the calculations. If all individual analytical results for the month are reported to be less than numeric values, then report "less than" the largest of those numeric values on the monthly DMR. Otherwise, report the calculated value.

    For any individual analytical result of "too numerous to count" (TNTC), that analysis shall be considered to be invalid and another sample shall be promptly collected for analysis. If another sample cannot be collected within the same sampling period for which the invalid sample was collected (during the same month if monthly sampling is required, during the same week if weekly sampling is required, etc.), then the following procedures apply:

    i. A minimum of two samples shall be collected for *E. coli* analysis within the next sampling period.

    ii. If the sampling frequency is monthly or less frequent: For the period with the invalid sample results, leave the spaces on the corresponding DMR for reporting *E. coli* results empty and attach to the DMR a letter noting that a result of TNTC was obtained for that period, and explain why another sample for that period had not been collected.

    If the sampling frequency is more frequent than monthly: Eliminate the result of TNTC from any further calculations, and use all the other results obtained within that month for reporting purposes. Attach a letter noting that a result of TNTC was obtained, and list all individual analytical results and corresponding sampling dates for that month.

11. "Grab" sample, is a single "dip and take" sample so as to be representative of the parameter being monitored.

12. "IC25" or "Inhibition Concentration" is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal biological measurement (e.g. growth or reproduction) calculated from a continuous model (i.e. interpolation method). IC25 is a point estimate of the toxic concentration that would cause a 25-percent reduction in a non-lethal biological measurement.

13. "In-situ" measurement is defined as a single reading, observation or measurement taken in the field at the point of discharge.

14. "Instantaneous" measurement is a single reading, observation, or measurement performed on site using existing monitoring facilities.

15. "LC50" or "Lethal Concentration" is the toxic or effluent concentration that would cause death in 50 percent of the test organisms over a specified period of time.

16. "Maximum Weekly Average Temperature (MWAT)" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as an implementation statistic that is calculated from field monitoring data. The MWAT is calculated as the largest mathematical mean of multiple, equally spaced, daily temperatures over a seven-day consecutive period, with a minimum of three data points spaced equally through the day. For lakes and reservoirs, the MWAT is assumed to be equivalent to the maximum WAT from at least three profiles distributed throughout the growing season (generally July-September).

    The MWAT is calculated by averaging all temperature data points collected during a calendar day, and then averaging the daily average temperatures for 7 consecutive days. This 7 day averaging period is a rolling average, i.e. on the 8th day, the MWAT will be the averages of the daily averages of days 2-8. The value to be reported on the DMR is the highest of all the rolling 7-day averages throughout the month. For those days that are at the end/beginning of the month, the data shall be reported for the month that contains 4 of the 7 days.

    Day 1: Average of all temperature data collected during the calendar day.
    Day 2: Average of all temperature data collected during the calendar day.
    Day 3: Average of all temperature data collected during the calendar day.
    Day 4: Average of all temperature data collected during the calendar day.
    Day 5: Average of all temperature data collected during the calendar day.
    Day 6: Average of all temperature data collected during the calendar day.
    Day 7: Average of all temperature data collected during the calendar day.
    1st MWAT Calculation as average of previous 7 days
    Day 8: Average of all temperature data collected during the calendar day.
    2nd MWAT Calculation as average of previous 7 days
    Day 9: Average of all temperature data collected during the calendar day.
    3rd MWAT Calculation as average of previous 7 days

17. "Minimum level (ML)" means the lowest concentration of an analyte that can be accurately and precisely quantified using a given method, as determined by the laboratory.

18. "NOEC" or "No-Observed-Effect-Concentration" is the highest concentration of toxicant to which organisms are exposed in a full life cycle or partial life cycle (short term) test, that causes no observable adverse effects on the test organisms (i.e. the highest concentration of toxicant in which

the values for the observed responses are not statistically different from the controls). This value is used, along with other factors, to determine toxicity limits in permits.

19. "Potentially dissolved (PD) metals fraction" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as that portion of a constituent measured from the filtrate of a water and suspended sediment sample that was first treated with nitric acid to a pH of 2 or less and let stand for 8 to 96 hours prior to sample filtration using a 0.40 or 0.45-UM (micron) membrane filter. Note the "potentially dissolved" method cannot be used where nitric acid will interfere with the analytical procedure used for the constituent measured.

20. "Practical Quantitation Limit (PQL)" means the minimum concentration of an analyte (substance) that can be measured with a high degree of confidence that the analyte is present at or above that concentration. The use of PQL in this document may refer to those PQLs shown in Part I.E.5 of this permit or the PQLs of an individual laboratory.

21. "Quarterly measurement frequency" means samples may be collected at any time during the calendar quarter if a continual discharge occurs. If the discharge is intermittent, then samples shall be collected during the period that discharge occurs.

22. "Recorder" requires the continuous operation of an automatic data retention device for providing required records such as a data logger, a chart and/or totalizer (or drinking water rotor meters or pump hour meters where previously approved.)

23. "SAR and Adjusted SAR" - The equation for calculation of SAR-adj is:

$$SAR\text{-}adj = \frac{Na^{+}}{\sqrt{\frac{Ca_{x} + Mg^{++}}{2}}}$$

Where:

Na+ = Sodium in the effluent reported in meq/l
Mg++ = Magnesium in the effluent reported in meq/l
Cax = calcium (in meq/l) in the effluent modified due to the ratio of bicarbonate to calcium

The values for sodium (Na+), calcium (Ca++), bicarbonate (HCO3-) and magnesium (Mg++) in this equation are expressed in units of milliequivalents per liter (meq/l). Generally, data for these parameters are reported in terms of mg/l, which must then be converted to calculate the SAR. The conversions are:

$$\text{meq/l} = \frac{Concentration\ in\ mg/l}{Equivalent\ weight\ in\ mg/meq}$$

Where the equivalent weights are determined based on the atomic weight of the element divided by the ion's charge:

Na+ = 23.0 mg/meq (atomic weight of 23, charge of 1)
Ca++ = 20.0 mg/meq (atomic weight of 40.078, charge of 2)
Mg++ = 12.15 mg/meq (atomic weight of 24.3, charge of 2)
HCO3- = 61 mg/mep (atomic weight of 61, charge of 1)

The EC and the HCO3 -/Ca++ ratio in the effluent (calculated by dividing the HCO3 - in meq/l by the Ca++ in meq/l) are used to determine the Cax using the following table.

Table – Modified Calcium Determination for Adjusted Sodium Adsorption Ratio

HCO3/Ca Ratio And EC 1, 2, 3												
	Salinity of Effluent (EC)(dS/m)											
Ratio of HCO3/Ca	0.1	0.2	0.3	0.5	0.7	1.0	1.5	2.0	3.0	4.0	6.0	8.0
.05	13.20	13.61	13.92	14.40	14.79	15.26	15.91	16.43	17.28	17.97	19.07	19.94
.10	8.31	8.57	8.77	9.07	9.31	9.62	10.02	10.35	10.89	11.32	12.01	12.56
.15	6.34	6.54	6.69	6.92	7.11	7.34	7.65	7.90	8.31	8.64	9.17	9.58
.20	5.24	5.40	5.52	5.71	5.87	6.06	6.31	6.52	6.86	7.13	7.57	7.91
.25	4.51	4.65	4.76	4.92	5.06	5.22	5.44	5.62	5.91	6.15	6.52	6.82
.30	4.00	4.12	4.21	4.36	4.48	4.62	4.82	4.98	5.24	5.44	5.77	6.04
.35	3.61	3.72	3.80	3.94	4.04	4.17	4.35	4.49	4.72	4.91	5.21	5.45
.40	3.30	3.40	3.48	3.60	3.70	3.82	3.98	4.11	4.32	4.49	4.77	4.98
.45	3.05	3.14	3.22	3.33	3.42	3.53	3.68	3.80	4.00	4.15	4.41	4.61
.50	2.84	2.93	3.00	3.10	3.19	3.29	3.43	3.54	3.72	3.87	4.11	4.30
.75	2.17	2.24	2.29	2.37	2.43	2.51	2.62	2.70	2.84	2.95	3.14	3.28
1.00	1.79	1.85	1.89	1.96	2.01	2.09	2.16	2.23	2.35	2.44	2.59	2.71
1.25	1.54	1.59	1.63	1.68	1.73	1.78	1.86	1.92	2.02	2.10	2.23	2.33
1.50	1.37	1.41	1.44	1.49	1.53	1.58	1.65	1.70	1.79	1.86	1.97	2.07
1.75	1.23	1.27	1.30	1.35	1.38	1.43	1.49	1.54	1.62	1.68	1.78	1.86
2.00	1.13	1.16	1.19	1.23	1.26	1.31	1.36	1.40	1.48	1.54	1.63	1.70
2.25	1.04	1.08	1.10	1.14	1.17	1.21	1.26	1.30	1.37	1.42	1.51	1.58
2.50	0.97	1.00	1.02	1.06	1.09	1.12	1.17	1.21	1.27	1.32	1.40	1.47
3.00	0.85	0.89	0.91	0.94	0.96	1.00	1.04	1.07	1.13	1.17	1.24	1.30
3.50	0.78	0.80	0.82	0.85	0.87	0.90	0.94	0.97	1.02	1.06	1.12	1.17
4.00	0.71	0.73	0.75	0.78	0.80	0.82	0.86	0.88	0.93	0.97	1.03	1.07
4.50	0.66	0.68	0.69	0.72	0.74	0.76	0.79	0.82	0.86	0.90	0.95	0.99
5.00	0.61	0.63	0.65	0.67	0.69	0.71	0.74	0.76	0.80	0.83	0.88	0.93
7.00	0.49	0.50	0.52	0.53	0.55	0.57	0.59	0.61	0.64	0.67	0.71	0.74
10.00	0.39	0.40	0.41	0.42	0.43	0.45	0.47	0.48	0.51	0.53	0.56	0.58
20.00	0.24	0.25	0.26	0.26	0.27	0.28	0.29	0.30	0.32	0.33	0.35	0.37
30.00	0.18	0.19	0.20	0.20	0.21	0.21	0.22	0.23	0.24	0.25	0.27	0.28

1 Adapted from Suarez (1981).

2 Assumes a soil source of calcium from lime (CaCO3) or silicates; no precipitation of magnesium, and partial pressure of CO2 near the soil surface (PCO2) is 0.0007 atmospheres.

3 Cax, HCO3, Ca are reported in meq/l; EC is in dS/m (deciSiemens per meter).

Because values will not always be quantified at the exact EC or HCO3– /Ca++ ratio in the table, the resulting Cax must be determined based on the closest value to the calculated value. For example, for a calculated EC of 2.45 dS/m, the column for the EC of 2.0 would be used. However, for a calculated EC of 5.1, the corresponding column for the EC of 6.0 would be used. Similarly, for a HCO3– /Ca++ ratio of 25.1, the row for the 30 ratio would be used.

*The Division acknowledges that some effluents may have electrical conductivity levels that fall outside of this table, and others have bicarbonate to calcium ratios that fall outside this table. For example, some data reflect HCO3– /Ca++ ratios greater than 30 due to bicarbonate concentrations reported greater than 1000 mg/l versus calcium concentrations generally less than 10 mg/l (i.e., corresponding to HCO3– /Ca++ ratios greater than 100). Despite these high values exceeding the chart's boundaries, it is noted that the higher the HCO3– /Ca++ ratio, the greater the SAR-adj. Thus, using the Cax values corresponding to the final row containing bicarbonate/calcium ratios of 30, the permittee will actually calculate an SAR-adj that is less than the value calculated if

additional rows reflecting HCO3– /Ca++ ratios of greater than 100 were added.

24. "Seven (7) day average" means, with the exception of fecal coliform or *E. coli* bacteria (see geometric mean), the arithmetic mean of all samples collected in a seven (7) consecutive day period. Such seven (7) day averages shall be calculated for all calendar weeks, which are defined as beginning on Sunday and ending on Saturday. If the calendar week overlaps two months (i.e. the Sunday is in one month and the Saturday in the following month), the seven (7) day average calculated for that calendar week shall be associated with the month that contains the Saturday. Samples may not be used for more than one (1) reporting period. **(See the "Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.E.5 for guidance on calculating averages and reporting analytical results that are less than the PQL).**

25. "Sufficiently sensitive test procedures":

    i. An analytical method is ''sufficiently sensitive'' when the method detects and accurately and precisely quantifies the amount of the analyte. In other words there is a valid positive result; or
    ii. An analytical method is "sufficiently sensitive" when the method accurately and precisely quantifies the result to the AWQC, as demonstrated by the ML is less than or equal to the AWQC. In other words, the level of precision is adequate to inform decision making; or
    iii. An analytical method is "sufficiently sensitive" when the method achieves the required level of accuracy and precision, as demonstrated by the ML is less than or equal to the PQL. In other words, the most sensitive method is being used and properly followed.

26. "Thirty (30) day average" means, except for fecal coliform or *E. coli* bacteria (see geometric mean), the arithmetic mean of all samples collected during a thirty (30) consecutive day period, which represents a calendar month. The permittee shall report the appropriate mean of all self-monitoring sample data collected during the calendar month on the Discharge Monitoring Reports. Samples shall not be used for more than one (1) reporting period. **(See the "Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.E.5 for guidance on calculating averages and reporting analytical results that are less than the PQL).**

27. Toxicity Identification Evaluation (TIE) is a set of site-specific procedures used to identify the specific chemical(s) causing effluent toxicity.

28. "Total Inorganic Nitrogen (T.I.N.)" is an aggregate parameter determined based on ammonia, nitrate and nitrite concentrations. To determine T.I.N. concentrations, the facility must monitor for total ammonia and total nitrate plus nitrite (or nitrate and nitrite individually) on the same days. The calculated T.I.N. concentrations in mg/L shall then be determined as the sum of the analytical results of same-day sampling for total ammonia (as N) in mg/L, and total nitrate plus nitrite (as N) in mg/L (or nitrate as N and nitrite as N individually). From these calculated T.I.N. concentrations, the daily maximum and thirty (30) day average concentrations for T.I.N. shall be determined in the same manner as set out in the definitions for the daily maximum and thirty (30) day average. **(See the "Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.E.5 for guidance on calculating averages and reporting analytical results that are less than the PQL).**

29. "Total Metals" means the concentration of metals determined on an unfiltered sample following vigorous digestion (Section 4.1.3), or the sum of the concentrations of metals in both the dissolved and

suspended fractions, as described in Manual of Methods for Chemical Analysis of Water and Wastes, U.S. Environmental Protection Agency, March 1979, or its equivalent.

30. "Total Recoverable Metals" means that portion of a water and suspended sediment sample measured by the total recoverable analytical procedure described in Methods for Chemical Analysis of Water and Wastes, U.S. Environmental Protection Agency, March 1979 or its equivalent.

31. Toxicity Reduction Evaluation (TRE) is a site-specific study conducted in a step-wise process to identify the causative agents of effluent toxicity, isolate the source of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity after the control measures are put in place.

32. "Twenty four (24) hour composite" sample is a combination of at least eight (8) sample aliquots of at least 100 milliliters, collected at equally spaced intervals during the operating hours of a facility over a twenty four (24) hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the wastewater or effluent flow at the time of sampling or the total wastewater or effluent flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.

33. "Twice Monthly" monitoring frequency means that two samples shall be collected each calendar month on separate weeks with at least one full week between the two sample dates. Also, there shall be at least one full week between the second sample of a month and the first sample of the following month.

34. "Two (2) -Year Rolling Average" (Antidegradation limits)- the average of all monthly average data collected in a two year period. Reporting of two-year rolling average results should begin in the first DMR due once the reporting requirements has been in place for a two year period. To calculate a two-year rolling average, add the current monthly average to the previous 23 monthly averages and divide the total by 24. This methodology continues on a rolling basis as long as the two year rolling average reporting and/or effluent limit applies (i.e., in the first reporting period use data from month 1 to month 24, in the second reporting period use data from month 2 to month 25, then month 3 to month 26, etc). Ongoing reporting is required across permit terms when data is available for a two year period.

35. "Visual" observation is observing the discharge to check for the presence of a visible sheen or floating oil.

36. "Water Quality Control Division" or "Division" means the state Water Quality Control Division as established in 25-8-101 et al.)

Additional relevant definitions are found in the Colorado Water Quality Control Act, CRS §§ 25-8-101 et seq., the Colorado Discharge Permit System Regulations, Regulation 61 (5 CCR 1002-61) and other applicable regulations.

E. PERMIT SPECIFIC MONITORING, SAMPLING AND REPORTING REQUIREMENTS

1. Routine Reporting of Data

Reporting of the data gathered in compliance with Part I.B or Part I.C shall be on a **monthly** basis. Reporting of all data gathered shall comply with the requirements of Part I.E (General Requirements).

Monitoring results shall be summarized for each calendar month via the division's NetDMR service unless a waiver is granted in compliance with 40 CFR 127. If a waiver is granted, monitoring results shall be reported on division approved discharge monitoring report (DMR) forms (EPA form

3320-1).

Reporting No Discharge:
If no discharge occurs during the reporting period, a DMR must still be submitted. However, "No Discharge" shall be reported on the paper DMR and if reporting electronically please use the No Data Code (NODI) "C" for No Discharge in NetDMR.

When submitting monitoring results via NetDMR, the Copy of Record shall reflect that the DMR was signed and submitted no later than the 28th day of the month following the reporting period. If submitting DMRs by mail, which is only allowed if a waiver has been granted, one copy of the DMR form shall be mailed to the division at the address provided below, so that the DMR is received no later than the 28th day of the month following the reporting period.

If mailing, the original signed copy of each DMR shall be submitted to the division at the following address:

Colorado Department of Public Health and Environment
Water Quality Control Division
WQCD-P-B2
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

The Discharge Monitoring Report paper and electronic forms shall be filled out accurately and completely in accordance with the requirements of this permit and the instructions on the forms; and signed by an authorized person as identified in Part II.K.1.

2. Annual Biosolids Report

State Biosolids Annual Report

The permittee shall provide a biosolids annual report to the Division no later **February 19th** of each year. The Self-Monitoring Report shall include the items identified in **Regulation 64.17.B.** Reports shall be submitted addressing all such activities that occurred in the previous calendar year. Biosolids monitoring results shall be reported using appropriate division-provided forms, currently the Biosolids Annual Report form. Biosolids Annual Reports required herein, shall be signed and certified in accordance with the Signatory Requirements, Part II.K and submitted as follows:

The original copy of each form, plus copies of all required documentation, shall be submitted to the following address:

BIOSOLIDS PROGRAM
COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT,
WATER QUALITY CONTROL DIVISION
WQCD-PERMITS-B2
4300 CHERRY CREEK DRIVE SOUTH
DENVER, COLORADO 80246-1530

EPA Biosolids Annual Report

EPA biosolids reporting is now done electronically. It is the responsibility of the permittee to check with the EPA on whether or not the EPA requires a biosolids annual report for the facility.

3. Representative Sampling

Samples and measurements taken for the respective identified monitoring points as required herein shall be representative of the volume and nature of: 1) all influent wastes received at the facility, including septage, biosolids, etc.; 2) the monitored effluent discharged from the facility; and 3) biosolids produced at the facility. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the influent, effluent, or biosolids wastestream joins or is diluted by any other wastestream, body of water, or substance. Monitoring points shall not be changed without notification to and prior approval by the Division.

4. Influent and Effluent Sampling Points

Influent and effluent sampling points shall be so designed or modified so that: 1) a sample of the influent can be obtained after preliminary treatment and prior to primary or biological treatment and 2) a sample of the effluent can be obtained at a point after the final treatment process and prior to discharge to state waters, unless otherwise specified in the certification. Any discharge to the waters of the State from a point source other than specifically authorized by this permit is prohibited. The permittee shall provide access to the Division to sample at these points.

5. Analytical and Sampling Methods for Monitoring and Reporting

The permittee shall install, calibrate, use and maintain monitoring methods and equipment, including biological and indicated pollutant monitoring methods. All sampling shall be performed by the permittee according to specified methods in 40 C.F.R. Part 136; methods approved by EPA pursuant to 40 C.F.R. Part 136; or methods approved by the Division, in the absence of a method specified in or approved pursuant to 40 C.F.R. Part 136.

The permittee may use an equivalent and acceptable alternative to an EPA-approved method without EPA review where the requirements of 40 CFR Part 136.6 are met and documented. The permittee may use an Alternative Test Procedure (ATP). An ATP is defined as a way in which an analyte is identified and quantified that is reviewed and approved by EPA in accordance with 40 CFR Part 136.4 for nationwide use, or a modification to a 40 CFR 136 approved method that is reviewed and approved by EPA in accordance with 40 CFR Part 136.5 for limited use.

a. The permittee must select a test procedure that is “sufficiently sensitive” for all monitoring conducted in accordance with this permit.

b. The PQLs for specific parameters are listed in the table below. PQLs for other parameters may be included in a certification under this general permit.

c. If the permit contains an interim effluent limitation (a limit is report until such time as a numeric effluent limit becomes effective) for a parameter, the final numeric effluent limit shall be considered the AWQC for the purpose of determining whether a test method is sufficiently sensitive.

d. When the analytical method which complies with the above requirements has an ML greater than the permit limit, and the permittee’s analytical result is less than the ML, the permittee shall report "BDL" on the DMR. Such reports will not be considered as violations of the permit limit, as long as the method is sufficiently sensitive. For parameters that have a report only limitation, and the permittee’s analytical result is less than the ML, (where X = the ML) “< X” shall be reported on the DMR.

e. In the calculation of average concentrations (i.e. 7- day, 30-day average, 2-year rolling average) any individual analytical result that is less than the ML shall be considered to be zero for the calculation purposes. When reporting:

If all individual analytical results are less than the ML, the permittee shall report either "BDL" or "<X" (where X = the ML), following the guidance above.

If one or more individual results is greater than the ML, an average shall be calculated and reported. Note that it does not matter if the final calculated average is greater or less than the ML, it must be reported as a value.

Table Practical quantitation limits – Metals, inorganics, nutrients, radiological parameters, and nonylphenol

Parameter	Reporting Units	PQL	Parameter	Reporting Units	PQL
Aluminum	µg/L[1]	15	Ammonia Nitrogen	mg/L[2] N	0.2
Antimony	µg/L	2	Nitrate+Nitrite Nitrogen	mg/L N	0.1
Arsenic	µg/L	1	Nitrate Nitrogen	mg/L N	0.1
Barium	µg/L	1	Nitrite Nitrogen	mg/L N	0.05
Beryllium	µg/L	2	Total Kjeldahl Nitrogen	mg/L N	0.5
Boron	µg/L	20	Total Nitrogen	mg/L N	0.5
Cadmium	µg/L	0.5	Total Inorganic Nitrogen	mg/L N	0.2
Calcium	µg/L	120	Phosphorus	mg/L P	0.05[3]
Chromium	µg/L	20	BOD/CBOD	mg/L	2
Chromium, Trivalent	µg/L	---	Chloride	mg/L	2
Chromium, Hexavalent	µg/L	20[3, 4]	Total Residual Chlorine, DPD	mg/L	0.5
Copper	µg/L	2	Total Residual Chlorine, Amperiometric	mg/L	0.05
Iron	µg/L	20[3]	Cyanide	µg/L	10[3]
Lead	µg/L	0.5	Fluoride	mg/L	0.5
Magnesium	µg/L	35	Phenols	µg/L	30
Manganese	µg/L	2	Sulfate	mg/L	2
Mercury	µg/L	0.2[3]	Sulfide	mg/L H_2S	0.1
Mercury, Low Level	µg/L	0.002	Total Dissolved Solids (TDS)	mg/L	10
Molybdenum	µg/L	0.5	Total Suspended Solids (TSS)	mg/L	5
Nickel	µg/L	1	Radium-226	pCi/L	1
Selenium	µg/ L	1[3]	Radium-228	pCi/L	1
Silver	µg/ L	0.5	Uranium	µg/ L	1
Sodium	µg/ L	150	Nonylphenol, ASTM D7065	µg/ L	10
Thallium	µg/ L	0.5			

Parameter	Reporting Units	PQL	Parameter	Reporting Units	PQL
Zinc	µg/ L	10			

[1] µg/L = micrograms per liter
[2] mg/L = milligrams per liter
[3] PQL established based on parameter specific evaluation
[4] For hexavalent chromium, samples must be unacidified so dissolved concentrations will be measured rather than potentially dissolved concentrations.

f. **PFAS Analysis -** At the time of permit issuance, there is no EPA-approved analytical method for analyzing PFAS in wastewaters (non-potable) that are approved for Clean Water Act monitoring in accordance with 40 CFR Part 136 (Appendix B). The analytical method for the parameters in the table below shall be compliant with the requirements set forth in the Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories (DoD QSM 5.1 or later [Table B-15: Per- and Polyfluoroalkyl Substances (PFAS) Using Liquid Chromatography Tandem Mass] Spectrometry (LC/MS/MS) With Isotope Dilution or Internal Standard Quantification in Matrices Other Than Drinking Water]).

At a minimum, the laboratory selected shall be able to analyze and quantify the PFAS listed in Table 2 at or below the associated PFAS quantification limits (PFAS QL). If the laboratory selected is capable of achieving a quantification limit for a specific PFAS that is lower than the PFAS QL listed below, analytical results should be reported to the department relative to the lower laboratory quantification limit, and not reported as "less than" the PFAS QL in the table below.

Any 40 CFR Part 136 (Appendix B) approved method for analyzing PFAS in wastewater that becomes available in the future would replace this current analytical method requirement.

Table PFAS Quantification limits – Per- and Poly-fluoroalkyl substances (PFAS)

Parameter	Units[1]	PFAS QL	Parameter	Units[1]	PFAS QL
Perfluorooctanoic Acid [PFOA]	ng/L	2	2-[N-methylperfluorooctanesulfonamido] acetic acid [NMeFOSAA]	ng/L	20
Perfluorobutanoic Acid [PFBA]	ng/L	7	Perfluorobutanesulfonic acid [PFBS]	ng/L	2
Perfluorooctanesulfonamide [PFOSA (or FOSA)]	ng/L	2	Perfluorodecanesulfonic acid [PFDS]	ng/L	2
Perfluoropentanoic acid [PFPeA]	ng/L	3	Perfluoroheptanesulfonic acid [PFHpS]	ng/L	2
Perfluorohexanoic acid [PFHxA]	ng/L	10	Perfluorohexanesulfonic acid [PFHxS]	ng/L	2
Perfluoroheptanoic acid [PFHpA]	ng/L	3	Perfluorooctanesulfonic acid [PFOS]	ng/L	2
Perfluorononanoic acid [PFNA]	ng/L	2	4:2 Fluorotelomer sulfonic acid [4:2 FTS]	ng/L	20
Perfluorodecanoic acid [PFDA]	ng/L	2	6:2 Fluorotelomer sulfonic acid [6:2 FTS]	ng/L	55
Perfluoroundecanoic acid [PFUnA (or PFUdA)]	ng/L	2	8:2 Fluorotelomer sulfonic acid [8:2 FTS]	ng/L	20
Perfluorododecanoic acid [PFDoA]	ng/L	2	Perfluoropentane sulfonic acid [PFPeS]	ng/L	2
Perfluorotridecanoic acid [PFTrDA (or RFTriA)]	ng/L	2	Perfluorononane sulfonic acid [PFNS]	ng/L	2

Perfluorotetradecanoic acid [PFTeDA (or PFTA or PFTeA)]	ng/L	2	Hexafluoropropylene oxide dimer acid [Gen-X (or HFPO-DA or HPFA-DA]	ng/L	6
2-[N-ethylperfluorooctanesulfonamido] acetic acid [NEtFOSAA]	ng/L	20			

[1] ng/L = nanograms per liter

6. Flow Measuring Devices

Unless exempted in the permit certification, flow metering at the headworks shall be provided to give representative values of throughput and treatment of the wastewater system. The metering device shall be equipped with a local flow indication instrument and a flow indication-recording-totalization device suitable for providing permanent flow records, which should be in the plant control building.

An instantaneous or continuous effluent flow measuring device shall be required in addition to the above described influent flow measuring device. Where influent/effluent flow metering is not practical and the same results may be obtained from metering at the influent/effluent end of the treatment facility or flow metering by some other means, this type of flow metering arrangement will be considered, and if approved, noted in the certification. In these cases, the monitoring frequency and sample type will be determined and specified in the certification.

At the request of the Division, the permittee must be able to show proof of the accuracy of any flow-measuring device used in obtaining data submitted in the monitoring report. The flow-measuring device must indicate values within ten (10) percent of the actual flow being measured.

PART II

Part II contains standard conditions required by federal regulation to be included in all NPDES permits (see 40 C.F.R. 122.41). Part I contains permit specific requirements. To the extent that Part I conflicts with the standard terms and conditions of Part II, the requirements of Part I shall control.

A. DUTY TO COMPLY

1. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Colorado Water Quality Control Act and is grounds for: 1) enforcement action; 2) permit termination, revocation and reissuance, or modification; or 3) denial of a permit renewal application.
2. Federal Enforcement:
    a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal (see 40 CFR 122.2) established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
    b. The Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed $25,000 per day for each violation. The Clean Water Act provides that any person who *negligently* violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than 2 years, or both. Any person who *knowingly* violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.
    c. Any person may be assessed an administrative penalty by the Administrator for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for

Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.

B. DUTY TO REAPPLY

If the permittee plans to continue an activity regulated by this permit after the expiration date of this permit, the permittee must submit a permit application at least 180 days before this permit expires as required by Regulations 61.4 and 61.10.

C. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. DUTY TO MITIGATE

The permittee must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. PROPER OPERATION AND MAINTENANCE

The permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of this permit. See 40 C.F.R. §122.41(e).

F. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. Any request for modification, revocation, reissuance, or termination under this permit must comply with all terms and conditions of Regulation 61.8(8). See also 40 C.F.R. § 122.41(f).

G. PROPERTY RIGHTS

In accordance with 40 CFR §122.41(g) and Regulation 61.8(9):

1. The issuance of a permit does not convey any property or water rights in either real or personal property, or stream flows or any exclusive privilege.
2. The issuance of a permit does not authorize any injury to person or property or any invasion of personal rights, nor does it authorize the infringement of federal, state, or local laws or regulations.
3. Except for any toxic effluent standard or prohibition imposed under Section 307 of the Clean Water Act or any standard for sewage sludge use or disposal under Section 405(d) of the Federal act, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with Sections 301, 302, 306, 318, 403, and 405(a) and (b) of the Clean Water Act. However, a permit may

be modified, revoked and reissued, or terminated during its term for cause as set forth in Section 61.8(8) of the Colorado Discharge Permit System Regulations. See 61.8(9)(c).

H. DUTY TO PROVIDE INFORMATION

The permittee shall furnish to the Division, within a reasonable time, any information which the Division may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Division, upon request, copies of records required to be kept by this permit in accordance with 40 C.F.R. §122.41(h) and/or Regulation 61.8(3)(q).

I. INSPECTION AND ENTRY

The permittee shall allow the Division and the authorized representative, including U.S. EPA, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials as required by law, to conduct inspections in accordance with 40 C.F.R. §122.41(i), Regulation 61.8(3), and Regulation 61.8(4):

1. To enter upon the permittee's premises where a regulated facility or activity is located or conducted in which any records are required to be kept under the terms and conditions of this permit;
2. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit and to inspect any facilities, equipment (including monitoring and control equipment), practices, operations or monitoring method regulated or required in the permit;
3. To enter upon the permittee's premises in a reasonable manner and at a reasonable time to inspect or investigate, any actual, suspected, or potential source of water pollution, or to ascertain compliance or noncompliance with the Colorado Water Quality Control Act or any other applicable state or federal statute or regulation or any order promulgated by the Division, and;
4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

J. MONITORING AND RECORDS

1. Samples and measurements taken for the purpose of monitoring must be representative of the volume and nature of the monitored activity. See 40 C.F.R. § 122.41(j)(1).
2. Monitoring must be conducted according to test procedures approved under 40 C.F.R. part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. subchapters N or O. In the case of pollutants for which there are no approved methods under 40 C.F.R. part 136 or otherwise required under 40 C.F.R. subchapters N or O, monitoring must be conducted according to a test procedure specified in this permit for such pollutants. See 40 C.F.R. § 122.41(j)(4); 122.44(i)(1)(iv)(A).
3. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or when requested by the Division or Regional Administrator.
4. Records of monitoring information must include:
    a. The date, exact place, and time of sampling or measurements;

b. The individual(s) who performed the sampling or measurements;
c. The date(s) analyses were performed
d. The individual(s) who performed the analyses;
e. The analytical techniques or methods used; and
f. The results of such analyses.

5. The permittee shall install, calibrate, use and maintain monitoring methods and equipment, including biological and indicated pollutant monitoring methods. See Regulation 61.8(4)(b)(iii). All sampling shall be performed by the permittee according to sufficiently sensitive test procedures required by 40 C.F.R. 122.44(i)(1)(iv) or methods approved by the Division, in the absence of a method specified in or approved pursuant to 40 C.F.R. Part 136.
6. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

K. SIGNATORY REQUIREMENTS

1. Authorization to Sign: All documents required to be submitted to the Division by the permittee must be signed in accordance with 40 CFR §122.22, Regulation 61.4, and the following criteria:
    a. For a corporation: By a responsible corporate officer. For the purpose of this subsection, a responsible corporate officer means: (i) a president, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
    b. For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or
    c. For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this subsection, a principal executive officer of a federal agency includes (i) the chief or principal executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency. (e.g., Regional Administrator of EPA). For purposes of this section, a principal executive officer has responsibility for the overall operation of the facility from which the discharge originates.
    d. By a duly authorized representative in accordance with 40 C.F.R. 122.22(b), only if:
        i. the authorization is made in writing by a person described in Part II.K.1.a, b, or c above;
        ii. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent

responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and,

iii. The written authorization is submitted to the Division.

2. Any person(s) signing documents required for submittal to the Division must make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

3. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both. See 40 C.F.R. §122.41(k)(2).

L. REPORTING REQUIREMENTS

1. Planned Changes: The permittee shall give advance notice to the Division, in writing, of any planned physical alterations or additions to the permitted facility in accordance with 40 CFR §122.41(l) and Regulation 61.8(5)(a) and Part II.O. of this permit. Notice is required only when:
   a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR §122.29(b); or
   b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR §122.41(a)(1).
   c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. See 40 C.F.R. §122.41(l)(1)(iii).

2. Anticipated Non-Compliance: The permittee shall give advance notice to the Division, in writing, of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements. The timing of notification requirements differs based on the type of non-compliance as described below.
3. Transfer of Ownership or Control: The permittee shall notify the Division, in writing, thirty (30) calendar days in advance of a proposed transfer of the permit. This permit is not transferable to any person except after notice to the Division. The Division may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other

requirements as may be necessary under the Clean Water Act. See Regulation 61.8(6); 40 C.F.R. §§ 122.41(l)(iii) and 122.61.

4. Monitoring reports: Monitoring results must be reported at the intervals specified in this permit.
    a. If the permittee monitors any pollutant at the approved monitoring locations listed in Part I more frequently than that required by this permit using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Division. See 40 CFR 122.41(l)(4).
    b. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Division in the permit.
5. Submission of Discharge Monitoring Reports (DMRs): DMRs shall be submitted electronically through NetDMR system unless the permittee requests and is granted a waiver of the electronic reporting requirement by the Division pursuant to Regulation 61.8(4)(d).
6. Compliance Schedules: Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule in the permit, shall be submitted on the date listed in the compliance schedule section. The fourteen (14) calendar day provision in Regulation 61.8(4)(n)(i) has been incorporated into the due date.
7. Twenty-four hour reporting:
    a. In addition to the reports required elsewhere in this permit, the permittee shall report the following circumstances orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances, and shall mail to the Division a written report containing the information requested within five (5) working days after becoming aware of the following circumstances:
        i. Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident;
        ii. Circumstances leading to any unanticipated bypass which exceeds any effluent limitations in the permit;
        iii. Circumstances leading to any upset which causes an exceedance of any effluent limitation in the permit; or
        iv. Daily maximum violations for any of the pollutants limited by Part I.B of this permit as specified in Part III of this permit. This includes any toxic pollutant or hazardous substance or any pollutant specifically identified as the method to control any toxic pollutant or hazardous substance.
    b. The report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
    c. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combine sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather. See 40 CFR 122.41(l)(6)(i).
        i. As of December 21, 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the permittee to the division.

8. Other non-compliance: A permittee must report all instances of noncompliance at the time monitoring reports are due. These reports may be submitted annually in accordance with Regulation 61.8(4)(p) and/or 61.8(5)(f), but may be submitted at a more frequent interval.

M. BYPASS

1. Definitions:
    a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility in accordance with 40 CFR §122.41(m)(1)(i) and/or Regulation 61.2(12).
    b. Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. See 40 CFR §122.41(m)(1)(ii).
2. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of 40 CFR 122.41(m)(3) and (m)(4). See 40 CFR §122.41(m)(2).
3. Notice of bypass:
    a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, the permittee shall submit prior notice, if possible, at least ten (10) days before the date of the bypass. See 40 CFR §122.41(m)(3)(i) and/or Regulation 61.9(5)(c).
    b. Unanticipated bypass. You must submit notice of an unanticipated bypass as required in Part II.L.7. See also 40 CFR §122.41(m)(3)(ii).
4. Prohibition of Bypass: Bypasses are prohibited and the Division may take enforcement action against the permittee for bypass, unless:
    a. the bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;
    b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
    c. Proper notices were submitted to the Division.
        i. The Division may approve an anticipated bypass, after considering its adverse effects, if the Division determines that it will meet the three conditions listed.

N. UPSET

1. Definition: "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation. See 40 CFR §122.41(n) and Regulation 61.2(113).
2. Effect of an upset: An upset constitutes an affirmative defense to an action brought for noncompliance with permit effluent limitations if the requirements of section 3 are met. A

determination made during administrative review of claims that noncompliance was caused by upset is final administrative action subject to judicial review in accordance with Regulation 61.8(3)(j).

***special note:** this provision is consistent with the definition of "Upset" as codified in Regulation 61.2(113). However, the Colorado regulatory definition of upset is less stringent than the federal code of regulations, which restricts the use of an upset defense to noncompliance with technology-based permit effluent limitations only.*

3. Conditions necessary for demonstration of an Upset: A permittee who wishes to establish the affirmative defense of upset shall demonstrate through properly signed contemporaneous operating logs, or other relevant evidence that:
    a. an upset occurred and the permittee can identify the cause(s) of the upset;
    b. the permitted facility was at the time being properly maintained; and
    c. the permittee submitted notice of the upset as required in Part II.L.7 (24-hour notice); and
    d. The permittee complied with any remedial measure necessary to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. See also 40 C.F.R. 122.41(n)(3)(i)-(iv).

***special note:** this provision is consistent with the definition of "Conditions necessary for demonstration of upset" as codified in Regulation 61.8(3)(j)(ii). However, the Colorado regulatory definition of upset is less stringent than the federal code of regulations, which restricts the use of an upset defense to demonstrate that a facility was properly operated and maintained. Colorado's regulatory definition of "Conditions necessary for demonstration of upset" is less stringent than the requirements of the federal Clean Water Act.*

4. In addition to the demonstration required above, a permittee who wishes to establish the affirmative defense of upset for a violation of effluent limitations based upon water quality standards shall also demonstrate through monitoring, modeling or other methods that the relevant standards were achieved in the receiving water.
5. Burden of Proof: In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

O. REOPENER CLAUSE

Procedures for modification or revocation. Permit modification or revocation of this permit or coverage under this permit will be conducted according to Regulation 61.8(8). This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations (and compliance schedule, if necessary), or other appropriate requirements if one of the following events occurs, including but not limited to:

1. Water Quality Standards: The water quality standards of the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.
2. Wasteload Allocation: A wasteload allocation is developed and approved by the State of Colorado and/or EPA for incorporation in this permit.
3. Discharger-specific variance: A variance is adopted by the Water Quality Control Commission.

P. OTHER INFORMATION

When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Division or U.S. EPA, the Discharger shall promptly submit such facts or information. See 40 C.F.R. § 122.41(l)(8).

Q. SEVERABILITY

The provisions of this permit are severable. If any provisions or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances and the application of the remainder of this permit shall not be affected.

R. NOTIFICATION REQUIREMENTS

1. Notification to Parties: All notification requirements shall be directed as follows:
   a. Oral Notifications, during normal business hours shall be to:

      CDPHE-Emergency Reporting Line: 1-877-518-5608; or

      Water Quality Protection Section – Compliance Program
      Water Quality Control Division
      Telephone: (303) 692-3500

      After hours notifications should be made to the CDPHE-Emergency Reporting Line: 1-877-518-5608.

   b. Written notification shall be to:
      Water Quality Protection Section – Compliance Program
      Water Quality Control Division
      Colorado Department of Public Health and Environment
      WQCD-WQP-B2
      4300 Cherry Creek Drive South
      Denver, CO 80246-1530

S. RESPONSIBILITIES

Reduction, Loss, or Failure of Treatment Facility: The permittee has the duty to halt or reduce any activity if necessary to maintain compliance with the effluent limitations of the permit. It shall not be a defense for a permittee in an enforcement action that it would be necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

T. OIL AND HAZARDOUS SUBSTANCE LIABILITY

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 (Oil and Hazardous Substance Liability) of the Clean Water Act.

U. EMERGENCY POWERS

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the

permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority granted by Section 510 of the Clean Water Act. Nothing in this permit shall be construed to prevent or limit application of any emergency power of the Division.

V. CONFIDENTIALITY

Any information relating to any secret process, method of manufacture or production, or sales or marketing data which has been declared confidential by the permittee, and which may be acquired, ascertained, or discovered, whether in any sampling investigation, emergency investigation, Colorado Open Records Act (CORA) request, or otherwise, shall not be publicly disclosed by any member, officer, or employee of the Water Quality Control Commission or the Division, but shall be kept confidential. Any person seeking to invoke the protection of this section shall bear the burden of proving its applicability. This section shall never be interpreted as preventing full disclosure of effluent data.

W. FEES

The permittee is required to submit payment of an annual fee as set forth in the 2016 amendments to the Water Quality Control Act. Section 25-8-502 (1.1) (e), and the Regulation 61.15 as amended. Failure to submit the required fee when due and payable is a violation of the permit and will result in enforcement action pursuant to Section 25-8-601 et. seq., C.R.S.1973 as amended.

X. DURATION OF PERMIT

The duration of a permit shall be for a fixed term and shall not exceed five (5) years. If the permittee desires to continue to discharge, a permit renewal application shall be submitted at least one hundred eighty (180) calendar days before this permit expires. Filing of a timely and complete application shall cause the expired permit to continue in force to the effective date of the new permit. The permit's duration may be extended only through administrative extensions and not through interim modifications. If the permittee anticipates there will be no discharge after the expiration date of this permit, the Division should be promptly notified so that it can terminate the permit in accordance with Regulation 61.

Y. SECTION 307 TOXICS

If a toxic effluent standard or prohibition, including any applicable schedule of compliance specified, is established by regulation pursuant to Section 307 of the Clean Water Act for a toxic pollutant which is present in the permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in the discharge permit, the Division shall institute proceedings to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition.

PART III

Table I—Testing Requirements for Organic Toxic Pollutants by Industrial Category for Existing Dischargers

Industry Category	
Adhesives and sealants	Ore mining
Aluminum forming	Organic chemicals manufacturing
Auto and other laundries	Paint and ink formulation
Battery manufacturing	Pesticides
Coal mining	Petroleum refining
Coil coating	Pharmaceutical preparations
Copper forming	Photographic equipment and supplies
Electrical and electronic components	Plastics processing
Electroplating	Plastic and synthetic materials manufacturing
Explosives manufacturing	Porcelain enameling
Foundries	Printing and publishing
Gum and wood chemicals	Pulp and paper mills
Inorganic chemicals manufacturing	Rubber processing
Iron and steel manufacturing	Soap and detergent manufacturing
Leather tanning and finishing	Steam electric power plants
Mechanical products manufacturing	Textile mills
Nonferrous metals manufacturing	Timber products processing

Table II—Organic Toxic Pollutants in Each of Four Fractions in Analysis by Gas Chromatography/Mass

Volatiles	Acid Compounds	Base/Neutral	Pesticides
1V acrolein	1A 2-chlorophenol	1B acenaphthene	1P aldrin
2V acrylonitrile	2A 2,4-dichlorophenol	2B acenaphthylene	2P alpha-B
3V benzene	3A 2,4-dimethylphenol	3B anthracene	3P beta-BHC
5V bromoform	4A 4,6-dinitro-o-cresol	4B benzidine	4P gamma-BHC
6V carbon tetrachloride	5A 2,4-dinitrophenol	5B benzo(a)anthracene	5P delta-BHC
7V chlorobenzene	6A 2-nitrophenol	6B benzo(a)pyrene	6P chlordane
8V chlorodibromomethane	7A 4-nitrophenol	7B 3,4-benzofluoranthene	7P 4,4′-DDT
9V chloroethane	8A p-chloro-m-cresol	8B benzo(ghi)perylene	8P 4,4′-DDE
10V 2-chloroethylvinyl ether	9A pentachlorophenol	9B benzo(k)fluoranthene	9P 4,4′-DDD
11V chloroform	10A phenol	10B bis(2-chloroethoxy)methane	10P dieldrin
12V dichlorobromomethane	11A 2,4,6-trichlorophenol	11B bis(2-chloroethyl)ether	11P alpha-endosulfan
14V 1,1-dichloroethane		12B bis(2-chloroisopropyl)ether	12P beta-endosulfan
15V 1,2-dichloroethane		13B bis (2-ethylhexyl)phthalate	13P endosulfan sulfate
16V 1,1-dichloroethylene		14B 4-bromophenyl phenyl ether	14P endrin
17V 1,2-dichloropropane		15B butylbenzyl phthalate	15P endrin aldehyde
18V 1,3-dichloropropylene		16B 2-chloronaphthalene	16P heptachlor
19V ethylbenzene		17B 4-chlorophenyl phenyl ether	17P heptachlor epoxide
20V methyl bromide		18B chrysene	18P PCB-1242
21V methyl chloride		19B dibenzo(a,h)anthracene	19P PCB-1254
22V methylene chloride		20B 1,2-dichlorobenzene	20P PCB-1221
23V 1,1,2,2-tetrachloroethane		21B 1,3-dichlorobenzene	21P PCB-1232
24V tetrachloroethylene		22B 1,4-dichlorobenzene	22P PCB-1248
25V toluene		23B 3,3′-dichlorobenzidine	23P PCB-1260
26V 1,2-trans-dichloroethylene		24B diethyl phthalate	24P PCB-1016
27V 1,1,1-trichloroethane		25B dimethyl phthalate	25P toxaphene
28V 1,1,2-trichloroethane		26B di-n-butyl phthalate	
29V trichloroethylene		27B 2,4-dinitrotoluene	
31V vinyl chloride		28B 2,6-dinitrotoluene	
		29B di-n-octyl phthalate	
		30B 1,2-diphenylhydrazine (as azobenzene)	
		31B fluroranthene	
		32B fluorene	
		33B hexachlorobenzene	
		34B hexachlorobutadiene	
		35B hexachlorocyclopentadiene	
		36B hexachloroethane	
		37B indeno(1,2,3-cd)pyrene	
		38B isophorone	
		39B napthalene	
		40B nitrobenzene	
		41B N-nitrosodimethylamine	
		42B N-nitrosodi-n-propylamine	
		43B N-nitrosodiphenylamine	
		44B phenanthrene	
		45B pyrene	
		46B 1,2,4-trichlorobenzene	

Table III—Other Toxic Pollutants (Metals and Cyanide) and Total Phenols

Antimony, Total
Arsenic, Total
Beryllium, Total
Cadmium, Total
Chromium, Total
Copper, Total
Lead, Total
Mercury, Total
Nickel, Total
Selenium, Total
Silver, Total
Thallium, Total
Zinc, Total
Cyanide, Total
Phenols, Total

Table IV—Conventional and Nonconventional Pollutants Required To Be Tested by Existing Dischargers if Expected to be Present

Bromide
Chlorine, Total Residual
Color
Fecal Coliform
Fluoride
Nitrate-Nitrite
Nitrogen, Total Organic
Oil and Grease
Phosphorus, Total
Radioactivity
Sulfate
Sulfide
Sulfite
Surfactants
Aluminum, Total
Barium, Total
Boron, Total
Cobalt, Total
Iron, Total
Magnesium, Total
Molybdenum, Total
Manganese, Total
Tin, Total
Titanium, Total

Table V—Toxic Pollutants and Hazardous Substances Required To Be Identified by Existing Dischargers if Expected To Be Present

Toxic Pollutants

Asbestos

Hazardous Substances

Acetaldehyde
Allyl alcohol
Allyl chloride
Amyl acetate
Aniline
Benzonitrile
Benzyl chloride
Butyl acetate
Butylamine
Captan
Carbaryl
Carbofuran
Carbon disulfide
Chlorpyrifos
Coumaphos
Cresol
Crotonaldehyde
Cyclohexane
2,4-D (2,4-Dichlorophenoxy acetic acid)
Diazinon
Dicamba
Dichlobenil
Dichlone
2,2-Dichloropropionic acid
Dichlorvos
Diethyl amine
Dimethyl amine
Dintrobenzene
Diquat
Disulfoton
Diuron
Epichlorohydrin
Ethion
Ethylene diamine
Ethylene dibromide
4:2 Fluorotelomer sulfonic acid*
6:2 Fluorotelomer sulfonic acid*
8:2 Fluorotelomer sulfonic acid*
Formaldehyde
Furfural
Guthion
Hexafluoropropylene oxide dimer acid*
Isoprene
Isopropanolamine Dodecylbenzenesulfonate
Kelthane
Kepone
Malathion
Mercaptodimethur
Methoxychlor
Methyl mercaptan
Methyl methacrylate
Methyl parathion
Mevinphos
Mexacarbate
Monoethyl amine
Monomethyl amine
2-[N-ethylperfluorooctanesulfonamido] acetic acid*
2-[N-methylperfluorooctanesulfonamido] acetic acid*
Naled
Napthenic acid
Nitrotoluene
Parathion
Perfluorooctanoic Acid*
Perfluorobutanoic Acid*
Perfluorooctanesulfonamide*
Perfluoropentanoic acid*
Perfluorohexanoic acid*
Perfluoroheptanoic acid*
Perfluorononanoic acid*
Perfluorodecanoic acid*
Perfluoroundecanoic acid*
Perfluorododecanoic acid*
Perfluorotridecanoic acid*
Perfluorotetradecanoic acid*
Perfluorobutanesulfonic acid*
Perfluorodecanesulfonic acid*
Perfluoroheptanesulfonic acid*
Perfluorohexanesulfonic acid*
Perfluorooctanesulfonic acid*
Perfluoropentane sulfonic acid*
Perfluorononane sulfonic acid*
Phenolsulfanate
Phosgene
Propargite
Propylene oxide
Pyrethrins
Quinoline
Resorcinol
Strontium
Strychnine
Styrene
2,4,5-T (2,4,5-Trichlorophenoxy acetic acid)
TDE (Tetrachlorodiphenylethane)
2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid]
Trichlorofan
Triethanolamine dodecylbenzenesulfonate
Triethylamine
Trimethylamine
Uranium
Vanadium
Vinyl acetate
Xylene
Xylenol
Zirconium

* Parameter applicable to wastewater discharge only; it does not apply to biosolids.

Appendix E

Funding Sources

Colorado Water and Wastewater Funding Sources

Compiled by the Environmental Finance Center Network, February 2019

Organization	Program *(key words)*	Gov. Entity	Non-Profit	For-Profit	Purpose or Use of Funds	How to Apply	Website	Contact
Colorado Department of Public Health and Environment	Drinking Water State Revolving Fund Loan (DWSRF) Program *(water)*	✓	✓		The DWRF provides financial assistance to government agencies and private nonprofit public water systems for the construction of water projects intended to improve public and environmental health, aid compliance with the federal Safe Drinking Water Act and invest in Colorado's water infrastructure.	An applicant must complete an eligibility survey and a Pre-Qualification Form to begin. The SRF process generally takes 12-18 months from pre-qualification to construction to start. There are seven loan application deadlines annually. Planning and Design and Engineering grants are available for disadvantaged communities.	https://www.colorado.gov/cdphe/SRF-info	Colorado Department of Public Health and Environment cdphe_grantsandloans@state.co.us 303-692-3653 For regional specific contact see the contact information at map: www.colorado.gov/cdphe/SRF-info
	Water Pollution Control Revolving Fund (WPCRF) *(wastewater, stormwater)*	✓	✓		The WPCRF provides financial assistance to governmental agencies for the construction of wastewater and storm water projects that improve public and environmental health.		www.colorado.gov/cdphe/SRF-info	
	Water Quality Grants *(water, wastewater)*	✓	✓		Water quality grants, pending funding, are available through the following grant programs: Natural Disaster Grant; Small Communities Grant, Water Quality Improvement Fund Grant, and Lead Testing in Public Schools Grant. Technical assistance can be provided as well.	The different grants have various requests for application times, and funding is dependent on the fund balance availability.	https://www.colorado.gov/pacific/cdphe/wq-grants-and-loans	
U.S. Environmental Protection Agency	Water Infrastructure Finance and Innovation (water, wastewater)	✓	✓	✓	The Water Infrastructure Finance and Innovation Act of 2014 (WIFIA) established the WIFIA program, a federal credit program administered by EPA for eligible water and wastewater infrastructure projects. The WIFIA program offers loans with low, fixed interest rates and flexible financial terms. The minimum project size for small communities, population of 25,000 or less, is $5 million.	The WIFIA application process is two phases. Prospective borrowers must submit a letter of interest for their project to the WIFIA program by the announced annual deadline. For each selected projects, the prospective borrower may submit an application, negotiate loan terms, and close its loan. Please check the WIFIA website for more information about program deadlines.	https://www.epa.gov/wifia	Karen Fligger wifia@epa.gov 202-564-2992 1200 Pennsylvania Avenue, Northwest Mailcode 4201T Washington, District of Columbia 20460
USDA Rural Development	Waste and Water Disposal Direct Loans and Grants *(water, sewer)*	✓	✓		The purpose of this program is to develop water and waste disposal systems in rural areas with populations less than 10,000. Fixed, low interest rates. Repayment - up to 40 years. Grants may be available.	Applications are accepted on a rolling basis using the RD Apply electronic application system. Information is available here: http://www.rd.usda.gov/programs-services/rd-apply	http://www.rd.usda.gov/programs-services/water-waste-disposal-loan-grant-program/co	April Dahlager april.dahlager@co.usda.gov 720-544-2909 Denver Federal Center, Building 56, Room 2300 P.O. Box 25426 Denver, Colorado 80225
	Water and Waste Disposal Guaranteed Loan Program *(water, sewer)*	✓	✓		The purpose of this program is to provide a loan guarantee for the construction or improvement of water and waste disposal projects serving the financially needed communities of rural areas. This is achieved through bolstering existing private credit structure through the guarantee of quality loans. Guarantees up to 90% available to eligible lenders.		http://www.rd.usda.gov/programs-services/water-waste-disposal-loan-guarantees/co	

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Organization	Program *(key words)*	Gov. Entity	Non-Profit	For-Profit	Purpose or Use of Funds	How to Apply	Website	Contact
USDA Rural Development	Water and Waste Disposal Predevelopment Planning Grants *(water, wastewater)*	✓	✓		This program assists low-income communities with initial planning and development of an application for USDA Rural Development Water and Waste Disposal direct loan/grant and loan guarantee programs. The maximum is $30,000 or 75% of the predevelopment planning costs.	Applications are accepted on a rolling basis using the RD Apply electronic application system. Information is available here: http://www.rd.usda.gov/programs-services/rd-apply	http://www.rd.usda.gov/programs-services/water-waste-disposal-predevelopment-planning-grants/co	April Dahlager april.dahlager@co.usda.gov 720-544-2909 Denver Federal Center, Building 56, Room 2300 P.O. Box 25426 Denver, Colorado 80225
	Special Evaluation Assistance for Rural Communities and Households (SEARCH) *(water, wastewater)*	✓	✓		This program assists very small, financially distressed rural communities with predevelopment feasibility studies, design assistance, and technical assistance on proposed water and waste disposal projects.		http://www.rd.usda.gov/programs-services/search-special-evaluation-assistance-rural-communities-and-households/co	
	Emergency Community Water Assistance Grants *(water)*	✓	✓		This grant program is designed to assist rural communities that have experienced a significant decline in quantity or quality of drinking water due to an emergency, or in which such decline is considered imminent, to obtain or maintain adequate quantities of water that meets the standards set by the Safe Drinking Water Act.		http://www.rd.usda.gov/programs-services/emergency-community-water-assistance-grants/co	
	Business and Industry Guaranteed Loan *(small business)*	✓	✓	✓	This program improves the economic health of rural communities by increasing access to business capital through loan guarantees that enable commercial lenders to provide affordable financing for businesses in eligible rural areas. Lenders such as federal or state-chartered banks, savings and loans, farm credit banks, and credit unions can apply for the program. Businesses can qualify for loan guarantees.	Applications are accepted on a rolling basis and can be sent via mail. Contact your local state office to apply.	https://www.rd.usda.gov/programs-services/business-industry-loan-guarantees/co	
	Water and Waste Disposal Revolving Fund *(water, wastewater)*		✓		This program helps qualified nonprofits create revolving loan funds that can provide financing to extend and improve water and waste disposal systems in rural areas.	Contact the Rural Development program specialist in your state or see contact information.	https://www.rd.usda.gov/programs-services/water-waste-disposal-revolving-loan-funds/co	Derek Jones derek.jones@wdc.usda.gov 202-720-9640 1400 Independence Avenue Southwest Washington, District of Columbia 20250
Colorado Department of Local Affairs (DOLA)	Community Development Block Grant (CDBG) *(water, sewer)*	✓	✓		The primary objective of the CDBG Program is to develop viable communities by providing the following, principally to persons of low and moderate income: decent housing, a suitable living environment, and expanded economic opportunities.	Applicants should consult with the Department's Regional Manager in their area prior to submitting an application. The application deadline for CDBG funding consideration is in February.	https://www.colorado.gov/pacific/dola/community-development-block-grant-cdbg	Jodi Adkins jodi.adkins@state.co.us 303-864-7745 For regional specific contact: https://www.colorado.gov/pacific/dola/regional-managers

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Organization	Program *(key words)*	Gov. Entity	Non-Profit	For-Profit	Purpose or Use of Funds	How to Apply	Website	Contact
Colorado Department of Local Affairs (DOLA)	Energy and Mineral Impact Assistance Fund Grant (EIAF) Program *(water, sewer)*	✓	✓		The purpose of the EIAF Program is to assist political subdivisions that are socially and/or economically impacted by the development, processing, or energy conversion of minerals and mineral fuels.	Applications can be accessed on website; contact your regional manager with questions. Application deadlines are the first of April and August annually.	https://www.colorado.gov/pacific/dola/energymineral-impact-assistance-fund-eiaf	Tara Tubb tara/tinn@state.co.us 303-864-7756 For regional specific contact see this map: https://www.colorado.gov/pacific/dola/regional-managers
Colorado Water Conservation Board (CWCB)	Water Project Loan Program (water)	✓	✓	✓	Provides low-interest loans to agricultural, municipal and commercial borrowers for the design and construction of water supply projects in Colorado. Eligible projects include new construction or rehabilitation of existing water storage and delivery facilities, such as: reservoirs, ditches & canals, pipelines, river diversion structures, water rights purchases, and hydropower.	Potential borrowers must submit a Loan Feasibility Study and application to CWCB. Applications for loans under $10 million are accepted year-round. Applications for loans $10 million and over are due annually on August 1.	http://cwcb.state.co.us/LoansGrants/water-project-loan-program/Pages/main.aspx	Anna Mauss anna.mauss@state.co.us 303-866-3441 1313 Sherman Street #718 Denver, Colorado 80203
Economic Development Administration, Department of Commerce	Public Works Program *(water, sewer)*	✓	✓		This program empowers distressed communities to revitalize, expand, and upgrade their physical infrastructure, and generate or retain long-term, private sector jobs and investment.	Application packages are available at www.grants.gov. Applications will be accepted on an ongoing basis until the publication of a new EDAP Federal Funding Opportunity.	https://www.eda.gov/funding-opportunities/	Trent Thompson tthompson@eda.gov 303-844-5452 1244 Speer Boulevard, Suite 431 Denver, Colorado 80204
	Economic Adjustment Assistance Program *(water, sewer)*	✓	✓		This program assists state and local interests in designing and implementing strategies to adjust or bring about change to an economy. The program focuses on areas that have experienced or are under threat of serious structural damage to the underlying economic base.			
National Rural Water Association	NRWA Revolving Loan Fund *(water, wastewater)*	✓	✓		The Rural Water Loan Fund (RWLF) is a funding program specifically designed to meet the unique needs of small water and wastewater utilities. The RWLF provides low-cost loans for short-term repair costs, small capital projects, or pre-development costs associated with larger projects. The RWLF was established through a grant from the USDA/Rural Utilities Service, and repaid funds used to replenish the fund and make new loans.	Applications can be accessed on website and sent by mail or e-mail.	http://nrwa.org/initiatives/revolving-loan-fund/	Steve Harper sharper@crwa.net 719-545-6748 176 West Palmer Lake Drive Pueblo West, Colorado 81007
CoBank	Rural Water and Wastewater Lending *(water, wastewater)*	✓	✓	✓	CoBank works with rural water and wastewater not-for-profit systems, municipalities, and investor-owned utility companies to provide interim and bridge financing, refinance of existing debt, term loans for system upgrades, and lines of credit.	Applications are accepted continuously. To apply, complete an online Loan Request Form at: www.cobank.com/h2oloan	http://www.cobank.com/About-CoBank/Industries-We-Serve/Water.aspx	Hunter Hook hhook@cobank.com 303-793-2242 6340 South Fiddlers Green Circle Greenwood Village, Colorado 80111

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Organization	Program *(key words)*	Gov. Entity	Non-Profit	For-Profit	Purpose or Use of Funds	How to Apply	Website	Contact
Rural Community Assistance Partnership (RCAP)	Rural Community Assistance Corporation (RCAC) Environmental Infrastructure Loans *(water, wastewater)*	✓	✓		RCAC provides loans to finance water and waste facility projects. RCAC's loan programs are unique — they provide the early funds that small rural communities need to determine feasibility and pay pre-development costs prior to receiving state and federal program funding.	Applications can be accessed on the website and sent to the loan officer serving your state. Applications are accepted on a rolling basis.	http://www.rcac.org/lending/environmental-loans/	Darryl English denglish@rcac.org 435-649-0515 3120 Freeboard Drive, Suite 201 West Sacramento, California 95691
US Department of the Interior - Bureau of Reclamation	WaterSMART Grants: Water & Energy Efficiency Grants *(water, energy efficiency)*	✓			Through Water and Energy Efficiency Grants, Reclamation provides 50/50 cost share funding to irrigation and water districts, tribes, states and other entities with water or power delivery authority. Projects should seek to conserve and use water more efficiently, increase the production of hydropower; mitigate conflict risk in areas at high risk of future water conflict; and accomplish other benefits that contribute to water supply reliability in the western United States.	Funding Opportunity Announcement anticipated to be posted to grants.gov in January 2019.	https://www.usbr.gov/watersmart/weeg/index.html	Josh German jgerman@usbr.gov 303-445-2839 *or* Robin Graber rgraber@usbr.gov 303-445-2764 Building 67 (84-51000) P.O. Box 25007 Denver, Colorado 80225
	WaterSMART Grants: Small-Scale Efficiency Projects *(water efficiency)*	✓			Through Small-Scale Water Efficiency Projects, Reclamation provides 50/50 cost share funding to irrigation and water districts, tribes, states and other entities with water or power delivery authority. Projects support small-scale water management efforts (up to $75,000 in Federal funding for each project) that have been identified through previous planning efforts. Reclamation has developed a streamlined selection and review process to reflect the small-scale nature of these projects.	Funding Opportunity Announcement (BOR-DO-19-F005) was posted to grants.gov in January 2019. Proposals will be accepted until the application submission deadline of April 24, 2019.	https://www.usbr.gov/watersmart/swep/index.html	
	WaterSMART Grants: Water Marketing *(water marketing)*	✓			Through Water Marketing Strategy grants Reclamation provides 50/50 cost share funding to irrigation and water districts, tribes, states and other entities with water or power delivery authority. These grants provide meaningful support for entities exploring actions that can be taken to develop or facilitate water marketing. Under this funding opportunity applicants will be invited to conduct planning activities to develop a water marketing strategy to establish or expand water markets or water marketing transactions.	Funding Opportunity Announcement anticipated to be posted to grants.gov in February 2019.	https://www.usbr.gov/watersmart/watermarketing/index.html	
	Title XVI Water Reclamation & Reuse Program *(water, wastewater)*	✓			Title XVI is Reclamation's water recycling and reuse program. Reclamation works with non-Federal partners to identify and investigate opportunities to reclaim and reuse wastewaters and impaired ground and surface water in the 17 Western states and Hawaii. Entities with Congressionally authorized projects or that are eligible under section 4009(c) of the Water Infrastructure Improvements for the Nation Act (WIIN) may seek competitive, cost-shared funding to plan, design and construct projects.	In FY 2019, Reclamation will be offering funding under the Title XVI Program for research, planning, design, and construction of congressionally authorized or WIIN Title XVI Projects.	http://www.usbr.gov/watersmart/title/index.html	Amanda Erath aerath@usbr.gov 303-445-2766 Building 67 (84-51000) P.O. Box 25007 Denver, Colorado 80225 For regional specific contact: http://www.usbr.gov/watersmart/title/contacts.html

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Organization	Program *(key words)*	Gov. Entity	Non-Profit	For-Profit	Purpose or Use of Funds	How to Apply	Website	Contact
US Department of the Interior - Bureau of Reclamation	Drought Response Program: Drought Resiliency Projects *(water, drought)*	✓			Through the Drought Response Program, Reclamation provides 50/50 cost share funding to irrigation and water districts, tribes, states and other entities with water or power delivery authority. Projects should increase the reliability of water supplies; improve water management; and provide benefits for fish, wildlife, and the environment to mitigate impacts caused by drought.	Funding Opportunity Announcement (BOR-DO-19-F003) was posted to grants.gov on January 24, 2019, and will close on March 27, 2019.	http://www.usbr.gov/drought	Darion Mayhorn dmayhorn@usbr.gov 303-445-3121 Building 67 (84-51000) PO Box 25007 Denver, Colorado 80225
Colorado Enterprise Fund	Small Business Loans *(small business)*		✓	✓	Colorado Enterprise Fund is a non-profit lending institution that lends to start-ups and existing small businesses throughout Colorado. The small business loans range from $1,000 to $500,000, with variable rates and terms. The lending guidelines are more flexible than traditional banks and all aspects are reviewed in the decision making process.	For more information, contact the main office. Applications can be accessed on website.	http://www.coloradoenterprisefund.org/our-loans/	Robin Ramsouer info@coloradoenterprisefund.org 303-860-0242 1888 Sherman Street, Suite 530 Denver, Colorado 80203
Army Corp of Engineers	Section 219: Environmental Infrastructure *(water, wastewater)*	✓			The Section 219 program provides planning, design, and construction assistance for water- and sewer-related environmental infrastructure and resource protection and development projects for local communities throughout the country.	The Corps must have an authorization from Congress to begin a project or study. To get a project or study authorized, applicants must submit a request for assistance to the upcoming Water Resource Development Act. Contact the Corps for more information.	https://www.usace.army.mil/Missions/Civil-Works/Project-Partnership-Agreements/model_ra/section_219/	Dave Wethington david.m.wethington@usace.army.mil 202-761-1878 441 G Street Northwest Washington, District of Columbia 20314
Small Business Administration (SBA)	504 Fixed Asset Program (Certified Development Company) *(small business)*			✓	The 504 Loan Program provides approved small businesses with long-term, fixed-rate financing used to acquire fixed assets for expansion or modernization. 504 loans are made available through Certified Development Companies (CDCs), SBA's community based partners for providing 504 Loans and SBA participating lenders.	For additional information on eligibility criteria and loan application requirements, please contact your local Certified Development Company (CDC) at: https://www.sba.gov/offices/headquarters/ofa/resources/4049	https://www.sba.gov/offices/headquarters/ofa/resources/4049	Steven White steven.white@sba.gov 303-844-2607 721 19th Street Suite 426 Denver, Colorado 80202
	7(a) Loan Guarantee *(small business)*			✓	The 7(a) program is a flexible tool that can be used to finance a variety of business purposes. The proceeds of a 7(a) guaranteed loan may be used to purchase machinery, fixtures, and supplies; make improvements to land and buildings; finance receivables and augment working capital; acquire and start businesses; and refinance existing debt under certain conditions. The regular 7(a) program's maximum loan amount is $5 million. There is no minimum amount. SBA's 50% to 90% guaranty helps provide entrepreneurs access to capital.	Borrowers must submit SBA Form 1919 for a 7(a) business loan to private lenders. The lender will review the application, complete SBA Form 1920, and then submit it to the SBA's Loan Guaranty Processing Center through SBA's E-Tran website.	https://www.sba.gov/document/?program=7(a)	

Organization	Program *(key words)*	Gov. Entity	Non-Profit	For-Profit	Purpose or Use of Funds	How to Apply	Website	Contact
Small Business Administration (SBA)	Community Advantage Pilot *(small business)*			✓	Community Advantage is a pilot initiative aimed at increasing the number of SBA 7(a) lenders who reach underserved communities, targeting mission-focused financial institutions which were previously not able to offer SBA loans. The maximum loan size is $250,000. Guarantee can be up to 85 percent for loans up to $150,000 and 75 percent for those greater than $150,000.	All small business applicants must complete SBA Form 1919, Borrower Information Form, and 2449, Community Advantage Addendum. Lenders must complete SBA Form 1920.	https://www.sba.gov/document/?program=7(a)	Steven White steven.white@sba.gov 303-844-2607 721 19th Street Suite 426 Denver, Colorado 80202
	Microloan Program (*small business*)			✓	The purpose of the Microloan Program is to assist women, low income, Veteran, and minority entrepreneurs, and other small businesses in need of small amounts of financial assistance. Under the Microloan Program, SBA makes direct loans to Intermediaries that, in turn, use the proceeds to make micro loans to eligible borrowers.	For additional information on eligibility criteria, loan application requirements, participating microlenders please visit www.sba.gov/co	https://www.sba.gov/tools/local-assistance	