

**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 8
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
STATEMENT OF BASIS**

PERMITTEE: United States, Department of Interior, Fish and Wildlife Service

FACILITY NAME AND ADDRESS: Hotchkiss National Fish Hatchery
8077 Hatchery Road
Hotchkiss, CO 81419

PERMIT NUMBER: CO-0000086

RESPONSIBLE OFFICIAL: Craig Eaton, Project Leader
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FACILITY CONTACT: Same as above

PERMIT TYPE: Minor, Fish Hatchery, Permit Renewal, Federal Facility

FACILITY LOCATION: Hotchkiss National Fish Hatchery
8077 Hatchery Road
Hotchkiss, CO 81419
Delta County, Colorado
Latitude: 38.771267° N, Longitude: 107.768167° W

1 INTRODUCTION

This statement of basis (SoB) is for the reissuance of a National Pollutant Discharge Elimination System (NPDES) permit (the Permit) to the U.S. Department of Interior, Fish and Wildlife Service, for the Hotchkiss National Fish Hatchery (Hatchery). The Permit establishes discharge limitations for any discharge of wastewater from the Hatchery through Outfall 002 and 004 directly to the North Fork of the Gunnison River. The SoB explains the nature of the discharges, EPA's decisions for limiting the pollutants in the wastewater, and the regulatory and technical basis for these decisions.

The Hatchery is a federal facility in Colorado. EPA Region 8 is the NPDES permitting authority for federal facilities located in Colorado.

2 MAJOR CHANGES FROM PREVIOUS PERMIT

Major changes from the previous permit include the following:

- The valves for Outfalls 001a and 001b are closed and no longer discharge wastewater. They have been removed from the permit.
- Outfall 003 in the previous permit currently discharges spring runoff along the hillside adjacent to the Hatchery, collects in a pipeline and discharges to the North Fork of the Gunnison River. Since these discharges do not require a permit, Outfall 003 has been removed from the permit.
- Chloramine-T has not been used since March 2019 and it will not be used in the future. Chloramine-T monitoring requirements are removed.
- The monitoring requirements for total phosphorus and total nitrogen are removed from this Permit because there is no reasonable potential to cause or contribute to an excursion above relevant water quality standards.
- 40 C.F.R. §451.3 reporting requirements have been added for any investigational new animal drug (INAD) or any extralabel drug use.

3 BACKGROUND INFORMATION

3.1 Facility and Treatment Process Description

The Hatchery is located in the SW $\frac{1}{4}$ of Section 3, T15S, R93W, latitude 38.771267° N and longitude 107.768167° W on the north bank of the North Fork of the Gunnison River approximately three miles southwest of the town of Hotchkiss, Colorado, and approximately one half mile east of the town of Lazear, Colorado.

The Hatchery was established in 1967 for the production and distribution of trout throughout Colorado, Utah, New Mexico, Wyoming, Montana, and North Dakota. The Hatchery currently provides over 1.5 million trout for the Colorado River Storage Project and Colorado Division of Wildlife and Southern Ute Indian Reservation. The Hatchery cultures trout species from eggs to catchable size (10 inches) trout on a yearly basis. The Hatchery produces 145,000

pounds annually of various species of trout, with a maximum harvestable weight of 72,000 pounds present at any one time based on the permit application information.

The Hatchery includes a spring house, settling pond, aeration tank, hatchery building, residences, 40 outdoor concrete raceways, 24 nursery tanks, and 2 settling abatement ponds (see Figure 1 for flow schematic).

Corey Springs serves as the water supply for the Hatchery. The spring has a constant water temperature of 56 degrees Fahrenheit and flows from 2,200 to 4,000 gallons per minute (gpm); this provides the ideal conditions for trout production. The spring is protected by a covered structure (spring house); from this point, the water is directed into an underground pipe which directs the water downhill approximately 100 feet to a settling pond. From the settling pond, water is directed approximately eight feet to an aeration tank. The aeration tank consists of eight water columns in which influent water is oxygenated to ensure 105-110% oxygen saturation. Approximately every five weeks, water is rerouted directly from the spring to the aeration tank and bypasses the settling pond to allow for the removal of accumulated sediment in the settling pond. The sediment is then given away to community members for domestic purposes.

From the aeration tank, water travels downslope via an underground pipe. At the bottom of the slope (approximately 200 yards), a valve directs water to either the nursery in the hatchery house or to the water control mixing structure. Approximately 25% of the water is directed to the hatchery house (while in use) and approximately 75% of the water is directed to the water control mixing chamber.

Nursery. The nursery is located in the hatchery house and consists of 24 rearing tanks for hatching and rearing trout in various stages of life. The nursery is used when the Hatchery receives a batch of eggs. The Hatchery receives approximately 3 batches of eggs per year. Eggs are distributed evenly into upwelling egg incubator jars that are on a platform above each tank. Upon hatching, fry will absorb the yolk sac and will swim out of the egg jars into the water filled tank below. Feeding begins when 90 percent of the fry are out of the egg jar and into the tank. When trout reach 2.5 inches they are moved to outside A & B-bank raceways.

Feeding. Each nursery tank is hand-fed a calculated amount of fish food daily to allow for projected fish growth. Hand feeding allows crew members to observe fish to see if fed amount is being consumed and avoid overfeeding.

Nursery water flow. Water flows continuously through each of the rearing tanks directly from the aeration structure at a maximum flow of 40 gallons/tank/minute. At the discharge end of each nursery tank, water flows through a screen and into a tailbox which contains two drains: 1) a water overflow non-cleaning drain, and 2) a drain used for cleaning the tank. The non-cleaning water from the overflow drain goes to the mixing chamber and then is diverted to outside raceways to be reused. The drain used for cleaning directs cleaning effluent water into a pipeline paralleling the river south of the banks, which flows into the abatement ponds via the pump lift station located at the end of E-bank.

Cleaning. Each tank is cleaned once a day. It takes about one hour to clean all 24 tanks.

Water Control Mixing Structure. The water control mixing chamber mixes fresh water from the aeration structure with reuse water from the nursery and delivers the water to the raceways. Water can be manipulated from the mixing chamber to flow to the head box of A-bank, B-bank, C-bank, E-bank, or bypass all banks and go directly to abatement ponds. D-bank has no direct water line from the mixing chamber.

Raceways. There are eight raceways arranged in parallel that equal one bank. There are five banks (A through E), each one downhill from the previous bank from east to west. The first bank is considered A-bank. Water flows from A-bank all the way through E-bank which is considered a single pass reuse water system. There is a drain line that runs parallel to the river and is south of the banks, and each bank can be drained into the drain line. A pump lift station is located at the end of the drain line. All drains from the banks lead to this pump lift station. During cleaning of raceways, water from the raceway banks will be drained through this drain line via gravity flow to the pump lift station and is pumped directly to the effluent abatement ponds. All non-cleaning water from banks D and E moves directly to the effluent abatement basin via gravity.

Raceways in A and B-banks are approximately 504 ft³ in volume each, while raceways in C-bank are 819 ft³, D-bank raceways are 861 ft³, and E-bank raceways are 1160 ft³. Water flows continuously through the raceways unless cleaning is in process. Water from the raceway being cleaned is drained to the drain line running parallel to the river flows to the pump lift station and is pumped to the abatement ponds. One raceway bank of eight raceways is cleaned daily with brushes (no chemicals used).

Raceway Feeding. When trout are first moved to outside raceways, they are hand fed to ensure fish are eating and crew members are not over feeding fish. When trout reach approximately four inches, they are fed using a mechanical feeder mounted on a vehicle that blows the correct weight of food into the fish raceway.

Abatement Ponds. There are two plastic lined, settling abatement ponds (Ponds A and B) downslope from the raceways. The cleaning and non-cleaning effluent from the raceways and cleaning effluent from the nursery flow to the ponds. Flow from these sources come in at a combined rate of 2200-4000 gpm. The ponds are designed to handle and discharge any flow from the Hatchery by adjusting control valves. The effluent flows from abatement Pond A to Pond B settling out suspended solids before being discharged through Outfall 002. The ponds are cleaned once a quarter with a vacuum pump to remove all material which has settled at the bottom of the ponds. Outfall 004 is opened for a short period of time to discharge water to the river to perform abatement pond cleaning. This is done so that settled solids are not resuspended in the ponds and discharged into the river during the removal process. The waste material from vacuuming is placed in a field ditch located between the settling ponds and the North Fork of the Gunnison River and left to dry. The dried waste material is given away to community members for domestic purposes.

Cleaning / Disinfection House. This building is no longer in use to clean fish transport trucks. Water from adjacent hillside springs not used by the Hatchery is discharging via the former Outfall 003 to the North Fork of the Gunnison River. Because it is uncontaminated spring water, permit coverage is not required for these flows.

Points of Discharge. Wastewater from the hatchery house, raceways, and settling ponds are discharged as follows:

Outfall 001a. The valve to Outfall 001a, which intercepted flow from the drain line running parallel to the river south of B-bank, are no longer used. The Hatchery discharges effluent only through Outfalls 002 and 004. Outfall 001a was located at latitude 38.771150° N and longitude 107.768600° W and is being removed from the Permit.

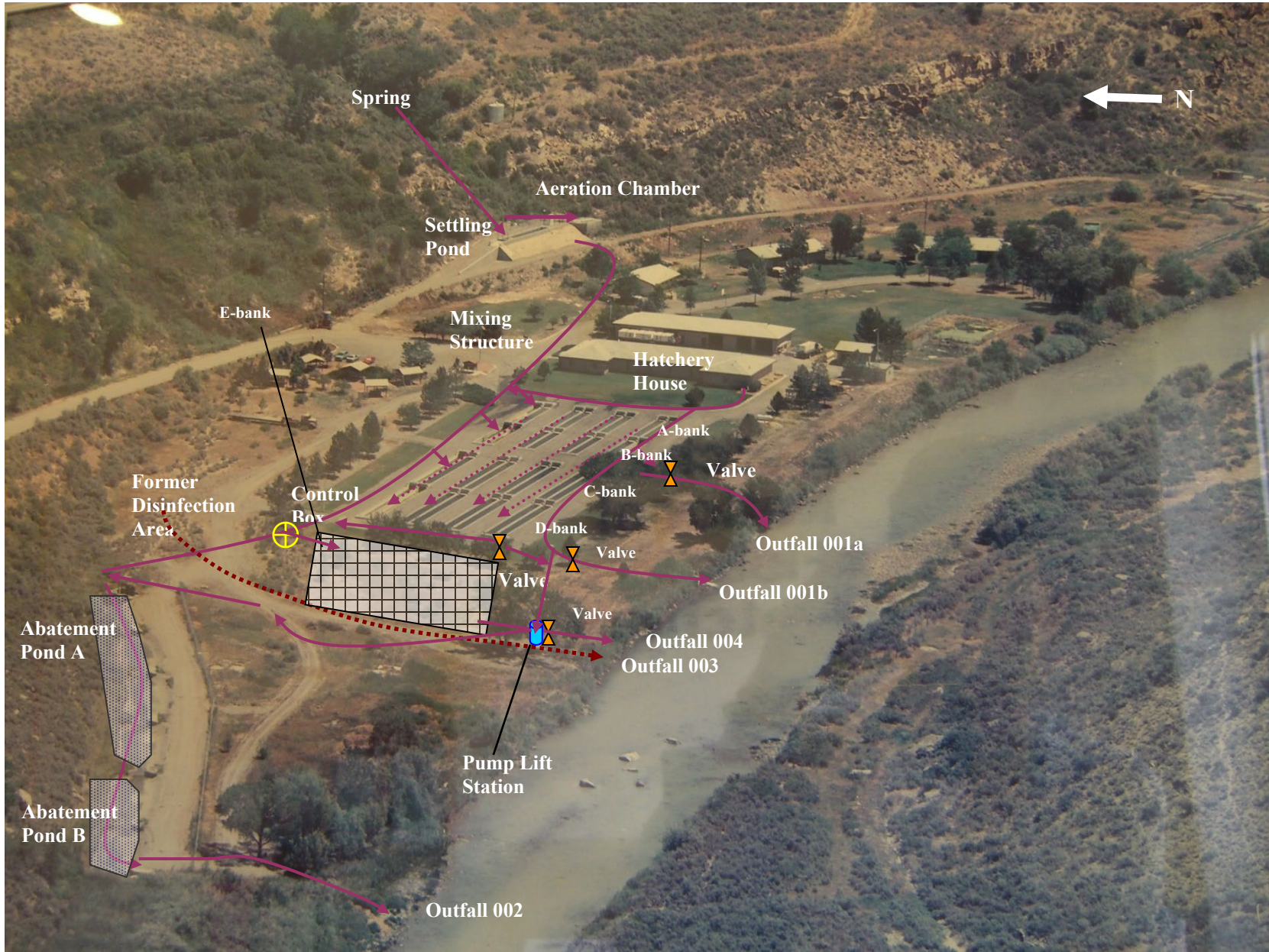
Outfall 001b. The valve to Outfall 001b, which intercepted flow from the drain line running parallel to the river south of D-bank, are no longer used. The Hatchery discharges effluent only through Outfalls 002 and 004. Outfall 001b was located at latitude 38.771167° N and longitude 107.769317° W and is being removed from the Permit.

Outfall 002. During normal operations, all effluent is discharged through Outfall 002 (abatement ponds). Valves to Outfalls 001a, 001b, and 004 will be closed and effluent discharge will occur at Outfall 002. Outfall 002 is located at latitude 38.771283° N and longitude 107.771633° W.

Outfall 003. Springs runoff along the hillside adjacent to the Hatchery collects in a pipeline and delivers the water to the North Fork of the Gunnison River. This water is not used by the Hatchery. The location of Outfall 003 is located at latitude 38.771183° N and longitude 107.769883° W. The Hatchery is no longer uses this Outfall as a disinfection cleaning station.

Outfall 004. Discharge to this outfall is expected to occur in the following situations: 1) when the pump lift station is not working, and 2) when the settling abatement ponds are being cleaned out. The valves to Outfall 004 will be closed in normal operation. The Hatchery typically discharges effluent through a single outfall (Outfall 002). Outfall 004 is located at latitude 38.771200° N and longitude 107.769783° W.

Figure 1. Flow diagram for Hatchery



3.2 Chemicals Used

The aquaculture chemicals currently use by the Hatchery are as follows:

Hydrogen Peroxide (35%) - It is used as an immersion (bath) treatment against many different disease-causing organisms, including external parasites, bacteria, and fungi. It is approved by U.S. Food and Drug Administration (FDA) for aquaculture uses.

Ovadine (buffered Iodine 10%) - It is used as a fish egg disinfectant to reduce the transmission of diseases between generations of fish.

Clorox bleach solution - The Hatchery disinfects rearing units (tanks and raceways) with a Clorox bleach solution using a pump sprayer. The Hatchery sprays unit surfaces then lets them evaporate before filling the unit up with water.

Epsom salt and soap detergent - For weeds control, the Hatchery sprays a vinegar solution (35%) mixed with Epsom salt and soap detergent (Called Weed-B-Gon), directly on the weeds.

4 PERMIT HISTORY

According to EPA records maintained for the Hatchery, this renewal is at least the 5th issuance of this NPDES permit. The previous permit for the Hatchery became effective on 5/1/2017 and was set to expire on 3/31/2022. The Hatchery submitted a permit renewal application prior to the permit's expiration, and thus the previous permit was administratively continued.

4.1 Discharge Monitoring Report (DMR) Data

Table 1 below summarizes the discharge monitoring report (DMR) self-monitoring results for Outfall 001a, 001b, 002, 003 and 004 from June 2017 – March 2022. It shows there was one effluent limitation violation for total residual chlorine in March 2018 data for Outfall 004.

Table 1. Summary of the DMR Data (June 2017 to March 2022) for Outfall 001a, 001b, 002, 003 and 004 from EPA Integrated Compliance Information System (ICIS) database (date accessed 4/4/2022)

Summary of the DMR Data for Outfall 001a - 12/31/2018 (only one set of data)					
Parameter	Permit Limit(s)	Reported Average	Reported Range	Number of Data Points	Number of Violations
Flow, mgd	N/A	2.92	2.92	1	N/A
Total Suspended Solids (TSS), 30-Day Average, mg/L	20	1	1	1	0
TSS, Daily Maximum, mg/L	30	1	1	1	0
TSS, 30-Day Average, lbs/day	801	24.3	24.3	1	0

TSS, Daily Maximum, lbs/day	1201	24.3	24.3	1	0
Total Residual Chlorine, Daily Maximum, mg/L	0.019	0	0	1	0
pH, units	6.5 - 9	7.6	7.6	1	0
Oil and Grease, mg/L	10	0	0	1	0
Total Dissolved Solids (TDS), mg/L	100	1	1	1	0
Summary of the DMR Data for Outfall 001b – No discharge, valve closed					
Summary of the DMR Data for Outfall 002 - June 2017 to March 2022					
Flow, mgd	N/A	4.63	1.15-8.36	17	N/A
TSS, 30-Day Average, mg/L	20	2.1	1-4.9	17	0
TSS, Daily Maximum, mg/L	30	2.1	1-4.9	1	0
TSS, 30-Day Average, lbs/day	801	57.0	1-174.8	17	0
TSS, Daily Maximum, lbs/day	1201	61.3	1-175	17	0
TRC, Daily Maximum, mg/L	0.019	0.0012	0-0.010	17	0
pH, units	6.5 - 9	7.2	6.5-7.6	18	0
Oil and Grease, mg/L	10	0	0	15	0
TDS, mg/L	100	5	5-28	18	0
Total nitrogen, mg/L	N/A	0.75	0.16-1.60	18	N/A
Total phosphorus, mg/L	N/A	0.038	0.029-0.048	18	N/A
Summary of the DMR Data for Outfall 003 – No data, not used by the Hatchery					
Summary of the DMR Data for Outfall 004 - June 2017 to March 2022					
Flow, mgd	N/A	2.89	0.86-5.62	5	N/A
TSS, 30-Day Average, mg/L	20	3.8	1.0-7.5	5	0
TSS, Daily Maximum, mg/L	30	4.1	1.0-8.8	5	0
TSS, 30-Day Average, lbs/day	801	58.5	16.4-164	5	0
TSS, Daily Maximum, lbs/day	1201	59	19-164	5	0
TRC, Daily Maximum, mg/L	0.019	0.008	0-0.030	5	1
pH, units	6.5 - 9	7.31	6.84-7.6	5	0
Oil and Grease, mg/L	10	0	0	5	0
TDS, mg/L	100	4	4-6	5	0

4.2 Other Facility History

The last EPA NPDES inspection was performed at the Hatchery in August 2017. The Hatchery addressed two findings from this inspection. 1. A discharge log was developed for Outfalls 001a, 001b and 004. 2. Sampling days are done the day before the delivery date to the lab for sample analysis.

5 DESCRIPTION OF RECEIVING WATER

All outfalls from this Hatchery discharge to Segment 3 (COGUNF03) of the North Fork of the Gunnison River of the Gunnison River Basin as described in Colorado Regulation No. 35. The United States Geological Survey (USGS) flow gauge station 09134100 below Paonia, Colorado, about 9 miles northeast from Hotchkiss, Colorado, indicates the mean flow for the North Fork of the Gunnison River is about 170 ft³/sec.

6 PERMIT LIMITATIONS

6.1 Technology Based Effluent Limitations (TBELs)

The Hotchkiss National Fish Hatchery produces about 145,000 pounds of various species of trout. Thus, the effluent limitation guidelines (40 C.F.R. Part 451) apply to this facility since this facility produces over the minimum 100,000 pound per year production trigger of aquatic animals. The narrative effluent limitation requirements as established in the effluent limitation guidelines are:

40 C.F.R. §451.3 General reporting requirements.

(a). Drugs. The Permittee subject to this part must notify the permitting authority of the use in a concentrated aquatic animal production facility subject to this part of any investigational new animal drug (INAD) or any extralabel drug use where such a use may lead to a discharge of the drug to waters of the U.S. Reporting is not required for an INAD or extralabel drug use that has been previously approved by FDA for a different species or disease if the INAD or extralabel use is at or below the approved dosage and involves similar conditions of use.

(1) The Permittee must provide a written report to the permitting authority of an INAD's impending use within 7 days of agreeing or signing up to participate in an INAD study. The written report must identify the INAD to be used, method of use, the dosage, and the disease or condition the INAD is intended to treat.

(2) For INADs and extralabel drug uses, the Permittee must provide an oral report to the permitting authority as soon as possible, preferably in advance of use, but no later than 7 days after initiating use of that drug. The oral report must identify the drugs used, method of application, and the reason for using that drug.

(3) For INADs and extralabel drug uses, the Permittee must provide a written report to the permitting authority within 30 days after initiating use of that drug. The written report must identify the drug used and include: the reason for treatment, date(s) and time(s) of the addition (including duration), method of application; and the amount added.

(b) Failure in, or damage to, the structure of an aquatic animal containment system resulting in an unanticipated material discharge of pollutants to waters of the U.S. In

accordance with the following procedures, any permittee subject to this part must notify the permitting authority when there is a reportable failure.

(1) The permitting authority may specify in the permit what constitutes reportable damage and/or a material discharge of pollutants, based on a consideration of production system type, sensitivity of the receiving waters and other relevant factors.

(2) The Permittee must provide an oral report within 24 hours of discovery of any reportable failure or damage that results in a material discharge of pollutants, describing the cause of the failure or damage in the containment system and identifying materials that have been released to the environment as a result of this failure.

(3) The Permittee must provide a written report within 7 days of discovery of the failure or damage documenting the cause, the estimated time elapsed until the failure or damage was repaired, an estimate of the material released as a result of the failure or damage, and steps being taken to prevent a recurrence.

(c) In the event a spill of drugs, pesticides or feed occurs that results in a discharge to waters of the U.S., the Permittee must provide an oral report of the spill to the permitting authority within 24 hours of its occurrence and a written report within 7 days. The report shall include the identity and quantity of the material spilled.

The Hatchery considered an existing source under 40 C.F.R. §451, because it was constructed prior to September 7, 2004, the date the regulation was promulgated. Existing sources must meet best practicable control technology currently available (BPT), best available technology economically achievable (BAT), and best conventional technology (BCT). The BAT and BCT requirements in 40 C.F.R. §§451.12 and 451.13 have the same limitations specified in § 451.11. The BPT requirements in 40 C.F.R. §451.11 require that existing source flow-through aquatic production facilities that produce over 100,000 pounds of aquatic animals a year must also meet the following requirements.

Have and implement a current BMP Plan which includes the minimum requirements listed below as required by the previous permit, and make any necessary updates as soon as possible, but not later than 90 days after the effective date of this Permit. The BMP Plan must be certified, signed and dated by the facility manager, revised as needed and signed and dated with the most recent revisions, kept on-site, and be available to EPA or the state of Colorado upon request.

(d) BMP Plan

1. Solids Control. The Permittee must:
 - a. Employ efficient feed management and feeding strategies that limit feed input to the minimum amount reasonably necessary to achieve production goals and sustain targeted rates of aquatic animal growth in order to minimize potential discharges of uneaten feed and waste products to waters of the U.S.
 - b. Identify and implement procedures for routine cleaning of rearing units and off-line settling basins, and procedures to minimize any discharge of accumulated solids

- during the inventorying, grading, and harvesting aquatic animals in the production system; in order to minimize the discharge of accumulated solids from settling ponds and basins and production systems.
- c. Remove and dispose of aquatic animal mortalities properly on a regular basis to prevent discharge to waters of the U.S., except in cases where the permitting authority authorizes such discharge in order to benefit the aquatic environment.
2. **Materials Storage.** The Permittee must:
 - a. Ensure proper storage of drugs, pesticides, and feed in a manner designed to prevent spills that may result in the discharge of drugs, pesticides or feed to waters of the U.S.
 - b. Implement procedures for properly containing, cleaning, and disposing of any spilled material.
 3. **Structural maintenance.** The Permittee must:
 - a. Inspect the production system and the wastewater treatment system on a routine basis in order to identify and promptly repair any damage.
 - b. Conduct regular maintenance of the production system and the wastewater treatment system in order to ensure that they are properly functioning.
 4. **Recordkeeping.** The Permittee must:
 - a. Maintain records for aquatic animal rearing units documenting the feed amounts and estimates of the numbers and weight of aquatic animals, in order to calculate representative feed conversion ratios.
 - b. Keep records documenting the frequency of cleaning, inspections, maintenance and repairs.
 5. **Training.** The Permittee must:
 - a. Adequately train all relevant facility personnel in spill prevention and how to respond in the event of a spill, in order to ensure the proper clean-up and disposal of spilled material.
 - b. Train staff on the proper operation and cleaning of production and wastewater treatment systems including training in feeding procedures and proper use of equipment.

The primary pollutants of concern in hatchery and settling abatement pond wastewater are the waste food and feces, as they affect water quality. Hatchery settling abatement basin wastewaters typically contain resuspended organic solids generated when facilities clean the bottom of the rearing ponds using a vacuum system or by sweeping to a bottom-drain system. The organic solids consist of fish food, fecal material, and other debris settled out from the facility's water source. The main chemical constituents of concern in the waste food and feces are primarily nitrogen and phosphorus. The pollutant loading in the effluent is characterized with total suspended solids (TSS) monitoring.

Total Phosphorus

The previous permit required quarterly monitoring for total phosphorus at the Hatchery in order to evaluate whether permit conditions would be needed to meet the water quality-based requirements for nutrients. A review of the total phosphorus analytical DMR results (see Table 1 above) showed that during the previous permit term, the highest detected concentrations of total phosphorus was 0.038 mg/L and reported range was 0.029 – 0.048 mg/L. These values are well below the conservative annual median total phosphorus limitations of 0.7 mg/l for the Non-Domestic Wastewater Treatment Works provided in Colorado Regulation 85 - Nutrients Management Control Regulation (adopted 6/11/12, effective 9/30/12). EPA has determined that continued monitoring for total phosphorus at this Hatchery is not otherwise subject to phosphorus control regulation and is not required to meet water quality-based requirements. Requirements for total phosphorus data collection have been removed from this Permit.

Total Nitrogen

The previous permit required quarterly monitoring for total nitrogen at the Hatchery in order to evaluate whether permit conditions would be needed to meet the water quality-based requirements for nutrients. A review of the total nitrogen analytical DMR results (see Table 1 above) showed that during the previous permit term, the average detected concentration of total nitrogen was 0.75 mg/L and reported range was 0.16 – 1.60 mg/L. These values are well below the conservative annual median total inorganic nitrogen (TIN) technology-based limitation of 7 mg/L for the Non-Domestic Wastewater Treatment Works provided in Colorado Regulation 85 - Nutrients Management Control Regulation (adopted 6/11/12, effective 9/30/12).

Total nitrogen (as N) results are expected to be higher than TIN results because total nitrogen includes organic and inorganic nitrogen. Therefore, the available total nitrogen data provide an informative comparison to the TIN limitation in Colorado Regulation 85. Trouts are very sensitive aquatic species, they are healthy and growing in the current water quality condition at this Hatchery.

In addition, the sum of Nitrate/Nitrite results were 0.792 mg/L in the 4/6/2022 Hotchkiss' lab report. The Hatchery collected another Nitrate and Nitrite effluent sample in 8/8/2022. The Nitrate concentration was 0.797 mg/L. The Nitrite concentration was less than the detection limit of 0.021 mg/L. The water quality standards for Nitrate is 10 mg/L and Nitrite is 0.05 mg/L for the receiving water. Therefore, there is no reasonable potential to cause or contribute to an excursion above relevant water quality standards.

EPA also has determined that continued monitoring for total nitrogen at this Hatchery is not otherwise subject to nitrogen control regulation and is not required to meet water quality-based requirements. Requirements for total nitrogen data collection have been removed from this Permit.

Total Suspended Solids

The limits for total suspended solids (801 lbs/day, 30 day average; 1201 lbs/day, daily maximum) are based on Professional Judgement (PJ) and carried forward from the previous permit. Numeric limits for TSS are maintained in this Permit due to anti-backsliding requirements as provided by Clean Water Act Section 402(o) and 40 CFR Part 122.44(l)(1).

The EPA Region 8 NPDES policy on effluent limitations for TSS from fish hatcheries was developed by Jim Harris, a retired EPA permit writer in the mid-1970s. The limitations for TSS are calculated in the following manner: 1) waste production is calculated at 0.75 pounds of TSS per pound of food per day, and 2) Best Practical Treatment will be calculated to be twenty percent removal of TSS through either sedimentation or cleaning/vacuum cleaning of raceways. TSS limits established in the previous permit were based on estimated food usage (assumed to equal 2% of fish weight). TSS limits based on actual food usage (21,245 pounds during the maximum month of feeding per permit application) figures provided by the facility, would result in a TSS limit of 425 pounds TSS/day (calculated by $21,245 \times 2\%$ or $21,245/30 \times 0.75 \times 80\%$). The daily maximum limit is equal to the 30-day average * 1.5. This Permit recognizes that carrying forward the TSS limit from the previous permit would allow for a higher TSS limit that calculated from actual food usage figures from 2015. However, because 1) current Effluent Guidelines require only BMP-based technology requirements, and 2) anti-backsliding rules prevent relaxing previously established limits, this Permit will maintain the limits as established in the previous permit.

TSS concentration limitations for Outfalls 002 and 004 established in this Permit are based on PJ and carried forward from the previous permit and are more stringent than the state of Colorado's limitation of 30 mg/L (30-day average) and 45 mg/L (daily maximum).

Oil and Grease. The limits for oil and grease and no floating solids are based on EPA Region 8 PJ and carried over from the previous permit.

6.2 Water Quality Based Effluent Limitations (WQBELs)

The Hatchery discharges to Segment 3 (COGUNF03) of the North Fork of the Gunnison River of the Gunnison River Basin as described in Colorado Regulation No. 35. The receiving water is within the state of Colorado and thus the state of Colorado's water quality standards (WQS) apply. EPA has reviewed the applicable State water quality standards for consideration of the development of WQBELs.

Segment 3 of the North Fork of the Gunnison River has been classified by the state of Colorado as: Agriculture, Class 1 Cold Water Aquatic Life, Recreation E (April 1 to September 30), Recreation P (October 1 to March 31), and Water Supply. The complete water quality standards of this segment can be found in Colorado Regulation No. 35, page 162 from the following website:

<https://www.sos.state.co.us/CCR/GenerateRulePdf.do?ruleVersionId=9887&fileName=5%20CCR%201002-35>.

Water quality standards that are of potential concern for the discharges from this Hatchery include:

pH = 6.5 – 9.0

Cl₂ (acute) = 0.019 mg/l

Cl₂ (chronic) = 0.011 mg/l

This segment of the North Fork of the Gunnison River is designated as reviewable water by the state of Colorado, thereby qualifying it under Colorado's antidegradation regulation.

The portion of "COGUNF03_B - Mainstem of North Fork of the Gunnison River from the Black Bridge (41.75 Drive) above Paonia to the confluence with the unnamed tributary east of Lazear Colorado." includes two pollutants on the 303(d) list in Colorado Regulation 93 for this segment (Mn and temperature). However, there are no total maximum daily loads (TMDLs) developed for this portion of the segment yet. If TMDLs apply in the future, the permit will address the corresponding waste load allocations (WLAs) for the pollutants of concern based on TMDLs developed for this segment. The Permit may be reopened to include limitations based on a finalized TMDL.

6.2.1 Pollutants of Concern

Temperature

Colorado regulation 31.9(3)(b) which states "No temperature effluent limit will be applied to a discharge of water from a natural hot spring, so long as that water enters the receiving water in the vicinity of its natural outflow." Corey Springs serves as the water supply for the Hatchery. The spring has a constant water temperature of 56 degrees Fahrenheit year around. This spring is considered a natural hot spring. Therefore, temperature requirements are not required for this Hatchery. The lack of a temperature monitoring requirement was confirmed with the CDPHE Water Quality Control Division, Permits Section, Unit Manager in January 2017.

Total residual chlorine (TRC)

The TRC limitation applies to Outfalls 002 and 004. The effluent limitation for TRC is based on the state of Colorado's acute criterion for chlorine to ensure protection for aquatic life. Cl₂ (acute) criteria is 0.019 mg/l and Cl₂ (chronic) is 0.011 mg/l.

pH

Per Colorado Regulation 32, the pH water quality standards is 6.5-9.0 s.u. This limitation is the same as the previous permit.

E Coli

E.coli limits were not included in the permit, because *E. coli* are associated with mammals and not fish.

6.2.2 Whole Effluent Toxicity (WET)

Many toxic pollutants have cumulative effects on aquatic organisms that cannot be detected by individual chemical testing. However, laboratory tests can measure toxicity directly by exposing living organisms to the wastewater and measuring their responses. Because these tests measure the aggregate toxicity of the whole effluent, this approach is called whole effluent toxicity (WET) testing. Some WET tests measure acute toxicity and other WET tests measure chronic toxicity.

EPA determined that toxic effects caused by unidentified pollutants in the effluent in this Hatchery is unlikely. Therefore, this Permit does not require WET testing.

6.3 Final Effluent Limitations

Applicable TBELs and WQBELs were compared, and the most stringent of the two was selected for the following effluent limits (Table 3).

Table 3. Final Effluent Limitations for Outfall 002 and 004

Effluent Characteristic	30-Day Average Effluent Limitations a/	7-Day Average Effluent Limitations a/	Daily Maximum Effluent Limitations a/	Limit Basis b/
Flow, mgd c/	Report only	N/A	Report only	N/A
Total Suspended Solids (TSS), mg/L d/	20	N/A	30	TBEL, PP
Total Suspended Solids (TSS), lbs/day d/	801	N/A	1,201	TBEL, PP
Total Residual Chlorine (TRC), mg/L e/	0.011	N/A	0.019	WQBEL
Oil and Grease (O&G), mg/L	N/A	N/A	10	PJ, PP
pH	Must remain in the range of 6.5 to 9.0 <i>at all times</i>			CO Reg. 32, WQBEL
There shall be no discharge of floating solids or visible foam in other than trace amounts. A daily inspection shall be made.				PP
Colorado River Salinity Control Program: the concentration of TDS in the effluent from either Outfall 002 or 004 shall not be more than 100 mg/L greater than the TDS concentration of the raw water supply at Outfall 001-I (Influent water supply before treatment). f/				Colorado River Salinity Control Program

a/ See section 1 of the Permit for definition of terms.

b/ WQBEL = Limitation based on water quality-based effluent limit; TBEL = Limitation based on technology based effluent limit; PJ = professional judgement; PP = Limitation based on previous permit.

c/ Flow measurement of effluent volume for Outfall 002 will be based on weir flow..

- Flow measurements of effluent volume for Outfall 004 shall be made in such a manner that the Permittee can affirmatively demonstrate that representative values are being obtained.
- d/ The sample for TSS shall be a flow weighted composite sample taken from Outfall 002 during normal operation and Outfall 004 when it is in used.
 - e/ The analysis for TRC must be done with an approved analytical method that has a method detection limit of no greater than 0.050 mg/L. In the calculation of average TRC concentrations, those analytical results that are less than 0.050 mg/L shall be considered to be zero for calculation purposes. If all individual analytical results that would be used in the calculations are less than 0.050 mg/L, then “less than 0.050 mg/L” shall be reported on the discharge monitoring report form. Otherwise, report the maximum value and the calculated average value. A representative sample shall be collected at the anticipated time of travel of residual chlorine to this outfall. Based on the Hatchery operator experience, it takes about 1.5 to 2.5 hours for the total residual chlorine to make its way through the facility to effluent Outfall 002 and 004.
 - f/ Colorado River Salinity Control Program: TDS shall be monitored in the raw water source as well as the effluent by grab sample. The yearly sample shall be taken at the time of year during which the fish population is greatest. The concentration of TDS in the effluent from Outfalls 002 and 004 shall not be more than 100 mg/L greater than the TDS concentration of the raw water supply (water supply before treatment). If the monitoring data for a calendar year show an incremental increase in TDS concentration greater than 100 mg/L, the Permittee may develop the TDS waiver request in accordance with Colorado Regulation 61.8(2)(1)(iv)(A).

6.4 Antidegradation

Discharges from the Hatchery are existing, and no changes to effluent quality are proposed. The Permit prohibits exceedances of numeric or narrative standards will be allowed in the Permit. An antidegradation review is not necessary per Colorado’s Antidegradation Policy, because there is no new or increased water quality impacts.

6.5 Anti-Backsliding

Federal regulations at 40 CFR Part 122.44(l)(1) require that when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit unless the circumstances on which the previous permit were based have materially and substantially changed since the time the Permit was issued and would constitute cause for permit modification or revocation and reissuance under 40 CFR Part 122.62.

This permit renewal complies with anti-backsliding regulatory requirements. All effluent limitations, standards, and conditions in the Permit are either equal to or more stringent than those in the previous permit.

7 MONITORING REQUIREMENTS

7.1 Self-Monitoring Requirements

Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, as required in 40 CFR Part 122.41(j), unless another method is required under 40 CFR subchapters N or O. Only commercially produced fish feed shall be used (no unprocessed offal or other animal byproduct). No sanitary wastes shall be introduced into this discharge. The Permittee must select a test procedure that is Sufficiently Sensitive for all monitoring conducted in accordance with this Permit.

Table 4. Monitoring requirements for Outfall 002, 004, and 001-I. Outfall 004 only requires to collect samples during each discharge

Outfall	Effluent Characteristic	Monitoring Frequency	Samples Type a/	Data Value Reported on DMR b/
002, 004	Flow, mgd c/	Weekly	Instantaneous	Daily Max. 30-Day Avg.
002, 004	TSS, mg/L d/	Quarterly	Composite (flow proportional)	Daily Max. 30-Day Avg.
002, 004	TRC, mg/L e/	Quarterly	Grab	Daily Max.
002, 004	O&G, visual f/	Weekly	Visual	Narrative
002, 004	O&G, mg/L f/	Immediately if visual sheen detected	Grab	Daily Max.
002, 004	pH, units	Quarterly	Grab	Instantaneous Min. Instantaneous Max.
002, 004	TDS, mg/L	Quarterly	Grab	Effluent Concentration
001-I	TDS, mg/L g/	Yearly	Grab	Difference for Influent and Effluent Concentration

Note: The Hatchery will log when discharge is occurring from Outfall 004. At least one monitoring sample must be collect during each discharge from Outfall 004. If Outfall 004 discharges for a long period of time, it must meet the monitoring frequency as outlined in Table 4 above. During normal operation, it shall be assumed that discharge will be continuously occurring from Outfall 002.

a/ See section 1 of the Permit for definition of terms.

b/ *Daily Max.* – Report the highest daily maximum value for the DMR period.

30-Day Avg. – Calculate and report the 30-Day average for each calendar month.

Maximum and Minimum – Report the extreme high and low measurements for the reporting period. If only one sample was collected during the reporting period, this will be the same value for both.

Narrative – For visual observations, report “Yes” if the parameter was ever detected during the reporting period; report “No” if the parameter was never detected during the reporting period.

- c/ Flow measurement of effluent volume for Outfall 002 will be based on weir flow. Flow measurements of effluent volume for Outfall 004 shall be made in such a manner that the Permittee can affirmatively demonstrate that representative values are being obtained.
- d/ The sample for TSS shall be a flow weighted composite sample taken from Outfall 002 during normal operation and Outfall 004 when it is in used.
- e/ The analysis for TRC must be done with an approved analytical method that has a method detection limit of no greater than 0.050 mg/L. In the calculation of average TRC concentrations, those analytical results that are less than 0.050 mg/L shall be considered to be zero for calculation purposes. If all individual analytical results that would be used in the calculations are less than 0.050 mg/L, then “less than 0.050 mg/L” shall be reported on the discharge monitoring report form. Otherwise, report the maximum value and the calculated average value. A representative sample shall be collected at the anticipated time of travel of residual chlorine to this outfall. Based on the Hatchery operator experience, it takes about 1.5 to 2.5 hours for the total residual chlorine to make its way through the facility to effluent Outfall 002.
- f/ If a sheen is observed a grab sample must be taken and analyzed immediately for Oil and Grease.
- g/ Samples of raw water intake (influent) at Outfall 001-I shall be collected and analyzed for TDS on a yearly basis.

8 SPECIAL CONDITIONS

N/A

9 REPORTING REQUIREMENTS

Reporting requirements are based on requirements in 40 CFR §§ 122.44, 122.48, and Parts 3 and 127. A discharge monitoring report (DMR) frequency of electronically report monthly DMRs with quarterly DMR submittal was chosen, because the Hatchery typically discharges continuously.

10 COMPLIANCE RESPONSIBILITIES AND GENERAL REQUIREMENTS

10.1 Inspection Requirements

On at least a weekly basis, unless otherwise approved by the Permit issuing authority, the Permittee shall inspect its wastewater treatment facility, effluent ponds, and Outfalls. The permittee shall document the inspection information obtained during the weekly inspections to ensure proper operation and maintenance.

10.2 Operation and Maintenance

40 CFR § 122.41(e) requires permittees to properly operate and maintain at all times, all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. In addition to an operation and maintenance plan, regular facility inspections, an asset management plan,

and consideration of staff and funding resources are important aspects of proper operation and maintenance. Asset management planning provides a framework for setting and operating quality assurance procedures and helps to ensure the permittee has sufficient financial and technical resources to continually maintain a targeted level of service. Consideration of staff and funding provide the permittee with the necessary resources to operate and maintain a well-functioning facility. These requirements have been established in section 6.3.3 of the Permit to help ensure compliance with the provisions of 40 CFR 122.41(e).

11 ENDANGERED SPECIES CONSIDERATIONS

The Endangered Species Act of 1973 requires all Federal Agencies to ensure, in consultation with the U.S. Fish and Wildlife Service (FWS), that any Federal action carried out by the Agency is not likely to jeopardize the continued existence of any endangered species or threatened species (together, “listed” species), or result in the adverse modification or destruction of habitat of such species that is designated by the FWS as critical (“critical habitat”). See 16 U.S.C. § 1536(a)(2), 50 CFR Part 402. When a Federal agency’s action “may affect” a protected species, that agency is required to consult with the FWS (formal or informal) (50 CFR § 402.14(a)).

The U.S. Fish and Wildlife Information for Planning and Conservation (IPaC) website (<https://ecos.fws.gov/ipac/>) was accessed on April 12, 2022 to determine federally-listed Endangered, Threatened, Proposed and Candidate Species for the area near the Hatchery. The IPaC Trust Resource Report findings are provided below. The designated area utilized was identified in the IPaC search and covers the entire National Fish Hatchery site acreage about 600 acres and the immediate outfall area of the receiving water.

Table 5. IPaC Federally listed Threatened and Endangered Species

Species	Scientific Name	Species Status	Designated Critical Habitat	Determination
Gray Wolf	<i>Canis lupus</i>	Endangered	There is final critical habitat for this species (published in the Federal Register on March 9, 1978).	No effect
Gunnison Sage-grouse	<i>Centrocercus minimus</i>	Threatened	There is final critical habitat for this species (published in the Federal Register on November 20, 2014).	No effect
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Threatened	There is final critical habitat for this species (published in the Federal Register on April 21, 2021).	No effect
Bonytail	<i>Gila elegans</i>	Endangered	There is final critical habitat for this species (published in the Federal Register on March 21, 1994).	No effect

Species	Scientific Name	Species Status	Designated Critical Habitat	Determination
Colorado Pikeminnow	<i>Ptychocheilus lucius</i>	Endangered	There is final critical habitat for this species (published in the Federal Register on March 21, 1994).	No effect
Humpback Chub	<i>Gila cypha</i>	Threatened	There is final critical habitat for this species (published in the Federal Register on March 21, 1994).	No effect
Razorback Sucker	<i>Xyrauchen texanus</i>	Endangered	There is final critical habitat for this species (published in the Federal Register on March 21, 1994).	No effect
Monarch Butterfly	<i>Danaus plexippus</i>	Candidate	No critical habitat has been designated	Candidate species does not need consultation. No critical habitat.
Clay-loving Wild Buckwheat	<i>Eriogonum pelinophilum</i>	Endangered	There is final critical habitat for this species (published in the Federal Register on July 13, 1984).	No effect
Colorado Hookless Cactus	<i>Sclerocactus glaucus</i>	Threatened	No critical habitat has been designated	No effect

11.1 Biological Evaluation

This Hatchery discharges to the North Fork of the Gunnison River of the Gunnison River Basin. Limits established in this Permit are protective of aquatic life. TSS resulting from fish waste and uneaten food is anticipated to be settled in ponds before discharging.

EPA had several informal consultation phone calls and emails with USFWS regarding this project. Based on the IPaC information and informal consultation with USFWS, EPA determines this Permit is “no effect” to any of the species listed by the U.S. Fish and Wildlife Service under the Endangered Species Act (see table 5 above). Since a “No effect” determination was made, no formal consultation with USFWS is required.

There will be no expected changes in water quality in the receiving water and no new construction for this facility. Any water discharged will have been treated to applicable water quality standards, criteria, and requirements; therefore, there are no expected changes or impacts to downstream habitats.

The additional justification to support the “no effect” determinations are as follows:

Gray Wolf – It is not an aquatic dependent species. This species only needs to be considered for environmental review if activity includes a predator management program.

Gunnison Sage-grouse – It is not an aquatic dependent species. There is no sage brush present in project area. Per current range map on Species Profile page: range map does not include the river or its riparian area (ECOS Species profile page: <https://ecos.fws.gov/ecp/species/6040>). Permit area is not within designated critical habitat for this species.

Yellow-billed Cuckoo - ECOS Species profile page: <https://ecos.fws.gov/ecp/species/3911> identifies that this species may occur in the permit area (Hatchery and downstream). However, the permit area is not within designated critical habitat for this species and it is very close to upstream of the fish hatchery (maybe about a mile). In the west, this species is rare and restricted to the cottonwood-dominated forests that line larger rivers running through arid country.

Bonytail – The discharge from this Hatchery travels a long distance (at least 5 river miles) to the mainstem of Gunnison River with plenty of mixing. There is no water depletion at the project area. Any water discharged will have been treated to applicable water quality standards, criteria, and requirements. There will be no adverse affect to this species in the river.

Colorado Pikeminnow – The discharge from this Hatchery travels a long distance (at least 5 river miles) to the mainstem of Gunnison river with plenty of mixing. There is no water depletion at the project area. Any water discharged will have been treated to applicable water quality standards, criteria, and requirements. There will be no adverse affect to this species in the river.

Humpback Chub – The discharge from this Hatchery travels a long distance (at least 5 river miles) to the mainstem of Gunnison river with plenty of mixing. There is no water depletion at the project area. Any water discharged will have been treated to applicable water quality standards, criteria, and requirements. There will be no adverse affect to this species in the river.

Razorback Sucker – The discharge from this Hatchery travels a long distance (at least 5 river miles) to the mainstem of Gunnison river with plenty of mixing. There is no water depletion at the project area. Any water discharged will have been treated to applicable water quality standards, criteria, and requirements. There will be no adverse affect to this species in the river.

Monarch Butterfly – This is a candidate species and not yet listed or proposed for listing. Consultation with U.S. Fish and Wildlife Service under section 7 of the Endangered Species Act is not required for candidate species.

Clay-loving Wild Buckwheat – ECOS Species profile page: <https://ecos.fws.gov/ecp/species/3348> identifies the permit area as not within the designated critical habitat for this species. The permit area (riparian/river) is not habitat required for this species. Clay-loving wild buckwheat is endemic to the rolling clay (adobe) hills and flats immediately adjacent to the communities of Delta and Montrose, Colorado. These white alkaline clay barrens are derived from the Mancos Shale Formation, deposits from an ancient inland sea. These barrens are inhospitable to only but the most adapted species. Species found in association with the clay-loving wild buckwheat include mat salt brush, black sagebrush,

shadscale, and Adobe Hills beardtongue, another local endemic. The unique soils that support clay-loving wild buckwheat populations are limited in their distribution. This means that the clay-loving wild buckwheat is also limited in habitat.

Colorado Hookless Cactus - ECOS Species profile page:

<https://ecos.fws.gov/ecp/species/2280> identifies the permit area (riparian/river) is not being habitat required for this species. There is no critical habitat has been designated for this species.

Habitat Requirements - Populations of Colorado hookless cacti occur primarily on alluvial benches (soils deposited by water) along the Colorado and Gunnison Rivers and their tributaries. Colorado hookless cacti generally occur on gravelly or rocky surfaces on river terrace deposits and lower mesa slopes. Exposures vary, but Colorado hookless cacti are more abundant on south-facing slopes (Colorado Natural Heritage Program. Soils are usually coarse, gravelly river alluvium above the river flood plains, usually consisting of Mancos shale with volcanic cobbles and pebbles on the surface. Elevations range from 3,900 to 6,000 feet (ft) (1,400 to 2,000 meters (m)) (Heil and Porter 2004). Associated desert shrubland vegetation includes shadscale (*Atriplex confertifolia*), galleta grass (*Pleuraphis jamesii*), black-sage (*Artemisia nova*), and Indian rice grass (*Achnatherum hymenoides*). Populations also exist in big sagebrush (*Artemisia tridentata*) dominated sites and in the transition zone from sagebrush to pinyon-juniper (*Pinus edulis* and *Juniperus osteosperma*) communities.

There are two population centers of the Colorado hookless cactus: (1) on alluvial river terraces of the Gunnison River from near Delta, Colorado, to southern Mesa County, Colorado; and (2) on alluvial river terraces of the Colorado River and in the Plateau and Roan Creek drainages in the vicinity of DeBeque, Colorado.

12 NATIONAL HISTORIC PRESERVATION ACT REQUIREMENTS

Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. § 470(f) requires that federal agencies consider the effects of federal undertakings on historic properties. The first step in this analysis is to consider whether the undertaking has the potential to affect historic properties, if any are present. See 36 CFR 800.3(a)(1). Permit renewals where there is no new construction are generally not the type of action with the potential to cause effects on historic properties.

13 401 CERTIFICATION CONDITIONS

The state of Colorado is the Clean Water Act (CWA) Section 401 certifying authority for the Permit, and a CWA Section 401 certification will be requested prior to Permit finalization.

14 MISCELLANEOUS

The effective date of the Permit and the Permit expiration date will be determined upon issuance of the Permit. The intention is to issue the Permit for a period not to exceed 5 years.

Permit drafted by Qian Zhang. P.E., U.S. EPA, 303-312-6267, June 2022.

ADDENDUM

AGENCY CONSULTATIONS

EPA sent a CWA Section 401 certification request letter to Colorado on September 23, 2022. As stated in the letter, consistent with 40 CFR § 124.53(c)(3), failure to issue or deny certification within a specified reasonable time, not to exceed 60 days of the receipt of the letter, will be considered by EPA to be a waiver of the certification requirement. It has been more than 60 days since the receipt of the letter, and no certification has been received. As such, the 401 certification is waived.

PUBLIC NOTICE AND RESPONSE TO COMMENTS

The Permit and statement of basis, including the CWA Section 401 certification, were public noticed on EPA's website on September 23, 2022. The public notice period closed on October 24, 2022. EPA did not receive any comments.