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:	Leadville National Fish Hatchery 2846 Highway 300 Leadville, CO 80461
PERMIT NUMBER:	CO-0000582
RESPONSIBLE OFFICIAL:	Josh Homer, Project Leader Phone: 719-486-0189 Email: josh_homer@fws.gov
FACILITY CONTACT:	Same as above
PERMIT TYPE:	Minor, Fish Hatchery, Permit Renewal, Federal Facility
FACILITY LOCATION:	Historic Hatchery Building 2846 Highway 300 Leadville, CO 80461 Lake County, Colorado Latitude: 39.225339^{o} N, Longitude: 106.392275^{o} 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 Leadville National Fish Hatchery (Hatchery). The Permit establishes discharge limitations for any discharge of wastewater from the Hatchery through Outfall 001 to an unnamed tributary to Hunt Gulch which flows into Lake Fork, a tributary to the Arkansas 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 monitoring requirements for total phosphorus, total nitrogen, dissolved oxygen, and receiving water temperature and pH are removed from this Permit because there is no reasonable potential to cause or contribute to an excursion above relevant water quality standards.
- Seasonal temperature monitoring for Maximum Weekly Average Temperature ("MWAT") and Daily Maximum ("DM") have been added.

3 BACKGROUND INFORMATION

3.1 Facility Process Description

Leadville National Fish Hatchery, established in 1889, is the second oldest federally operated fish hatchery in existence today. Leadville National Fish Hatchery was created by Executive Order of President Benjamin Harrison for the purpose of increasing the supply of fish for inland waters. The Hatchery grounds occupy 3,072 acres near the city of Leadville, Colorado, at an elevation of 10,000 feet. The Hatchery's subalpine forest surroundings, with its cold, clean water supply provide the ideal location for trout production.[1]

The Hatchery currently has two water supplies: Turquoise Reservoir and a small spring source. The Hatchery is provided approximately 3,000 gallons per minute (GPM) of surface water from Turquoise Reservoir via the Mt. Elbert Conduit. This water travels down a trunk line to a headbox where water can be directed into Lake 2 or the water treatment plant (see Figure 1).

All water utilized for fish production travels through the water treatment plant where it is filtered to 10 microns and treated with UV light. The filtrate backwash is mechanically removed and is then directed into Lake 3, allowed to settle, and periodically discharged to the

[1] https://www.fws.gov/mountain-prairie/fisheries/leadville.php

effluent ponds. The treated water used for fish production travels from the water treatment plant to the hatchery building, display pond and concrete raceways.

If the Turquoise Reservoir water is turned off, the Hatchery can be operated by diverting water from Lake 1 through the water treatment plant. Otherwise, water from Lake 1 normally travels to Lake 2 and then to Lakes 3 or 4 (See Figure 1).

To meet the trout production demands, the Hatchery has 16 raceways and 20 nursery tanks. The Hatchery produces Snake River cutthroat trout, rainbow trout, and greenback cutthroat trout for stocking into state waters for recreational fisheries as well as producing threatened and endangered trout for stocking into recovery waters. The Hatchery maintains brood stock for the threatened greenback cutthroat trout and acts as a brood stock refugia for Hayden Creek cutthroat trout. Their recreational fish are transferred from another facility at about 5 inches due to the cold water in Leadville not being able to grow catchable fish from eggs in 18 months. A small population (<120) of the endangered Wyoming toad is housed on the station also. The Hatchery has provided between 125,000 and 200,000 fish annually to support fishing in the Fryingpan Arkansas drainage and throughout Colorado. Leadville's efforts also support recovery of the four endangered fishes in the Colorado River.

The Hatchery also has up to 50 GPM of spring water available. Spring water is collected and consolidated in a second water treatment building. It receives mechanical filtration and UV treatment and is for domestic use or as a backup for fish culture in the hatchery building. Excess spring water and backwash water runs through a pipeline to the effluent ponds. There is flow measurement at the spring source water treatment area.

Outfall 001 is located downstream of the effluent ponds, latitude 39.224442° N and longitude 106.385445° W.

Figure 1. Aerial Image – Leadville National Fish Hatchery

3.2 Treatment Process

Since the discovery of whirling disease in 1995, the Hatchery has undergone numerous renovations. All earthen bottom ponds are no longer used for trout production due to contamination from whirling disease. To make up for lost production capacity eight new concrete raceways were built for trout rearing. A water treatment plant was also built in 2004 to further combat whirling disease. The plant houses two drum filters, two disc filters, and four UV radiators which remove any whirling disease from the water source. Since 2006, the Hatchery has been certified whirling disease free.

Filter backwash for the drum and disc filters is done mechanically and no chemicals are used to clean the membranes.

Flow calculations for the Hatchery are determined by combining flow readings from the water treatment plant, the spring water treatment house, and the Parshall flume from Lake 3. This flow measurement accounts for all of the water used by the Hatchery.

All water from the Hatchery operations flows to the effluent ponds, where some settling occurs, prior to discharge through Outfall 001.

3.3 Chemicals Used

Fish tanks and raceways are broomed down weekly with plastic or stainless steel brushes to remove algae and to facilitate removal of fish waste.

Occasionally equipment/gear is disinfected using a chlorine bath. The neutralized "bath" water is not dumped into drains that lead to surface discharge. When the "bath" water is no longer needed for cleaning, the chlorine is neutralized with sodium thiosulfate and disposed of via the domestic waste septic system. There are two septic tanks and fields to handle domestic (restroom, household) wastewater.

The Hatchery uses salts and other approved aquaculture chemicals for the control of disease in the fish populations. Disease control chemicals (including some pesticides) and drugs approved for use in the aquaculture industry are regulated by the U.S. Food and Drug Administration (FDA) or under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). Use of vaccines, bacterins, test kits, antitoxins, and immuno stimulants are under the scope of the U.S. Department of Agriculture. Pesticides are regulated by EPA. These agencies have developed regulations for the use of these compounds.

The requirement to utilize best management practices (BMPs) is included to this Permit. BMPs will provide EPA with information on Hatchery practices and will require the Hatchery to conform to any and all applicable regulations and dosage/usage requirements for drugs and chemicals. These chemicals, properly administered, are not expected to cause toxicity in the unnamed tributary to Hunt Gulch, Hunt Gulch, or Lake Fork. Specific monitoring for drugs and chemicals used at the Hatchery will not be required as there are no established or approved analytical methods for these compounds and dosing requirements are specified via the above mentioned methods.

4 PERMIT HISTORY

According to EPA records maintained for the Hatchery, this renewal is at least the 4th issuance of this NPDES permit. The previous permit for the Facility became effective on 1/1/2017 and was set to expire on 12/31/2021. 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 001 from January 2017 – June 2021. It shows there were no effluent limitation violations for any of the permit parameters.

Table 1. Summary of the DMR Data (January 2017 to June 2021) for Outfall 001 from EPA Integrated Compliance Information System (ICIS) database (date accessed 10/28/2021)

Parameter	Permit Limit(s)	Reported Average	Reported Range	Number of Data Points	Number of Violations
Discharge Volume, million gallons per day (mgd)	N/A	4.08	3.27 - 4.8	54	N/A
Total Suspended Solids (TSS), 30-Day Average, mg/L	20	1.6	0 - 5.4	18	0
TSS, Daily Maximum, mg/L	30	1.6	0 - 5.4	18	0
TSS, 30-Day Average, lbs/day	480	46.7	0 - 182	18	0
TSS, Daily Maximum, lbs/day	720	46.7	0 - 182	18	0
Oil and Grease (O&G), Daily Maximum, mg/L	10	0	0	54	0
pH, units	6.5 - 9	7.06	6.9 - 7.8	53	0
Temperature, Effluent, 30-Day Average, °C	N/A	5.3	1.0 - 9.4	54	N/A
Temperature, Effluent, Daily Maximum, °C	N/A	8.0	1.6 - 12.6	54	N/A
Temperature, Receiving water, 30-Day Average, °C	N/A	10.5	8.9 -12.4	8	N/A
Temperature, Receiving water, Daily Maximum, °C	N/A	10.5	8.9 -12.4	8	N/A
pH, Receiving water	N/A	7.0	6.9 -7.2	8	N/A
Dissolved Oxygen (DO), mg/L	N/A	8.43	6.98 - 10.4	54	N/A
Total Residual Chlorine, mg/L	N/A	0	0	8	N/A
Total Ammonia Nitrogen (as N), mg/L	N/A	0	0	8	N/A
Total Nitrogen (N), mg/L	N/A	0	0	8	N/A
Total Phosphorus (P), mg/L	N/A	0.023	0.017 - 0.024	8	N/A

4.2 Other Facility History

The last EPA NPDES inspection was performed at the Hatchery in September 2014. The inspection found that the Hatchery was unable to flow proportion its samples, and the permit at the time required TSS to be composite samples that are flow proportioned. In the 2014 inspection report, EPA requested the Hatchery submit a standard operating procedure to adequately flow weight the samples collected for compositing. This Permit continues to require TSS samples to be flow proportioned (see Section 1 of the Permit for the definition of Composite).

5 DESCRIPTION OF RECEIVING WATER

Wastewater from the raceways, Lake 3 and the spring water overflow are captured in one of two effluent settling ponds (effluent pond 1 and 2 - see Figure 1 above). The discharge pipes from these settling ponds join and discharge through Outfall 001 to an unnamed tributary to Hunt Gulch and into Lake Fork, a tributary to the Upper Arkansas River. The main stem of Lake Fork resides on private property.

Colorado Department of Public Health and Environment (CDPHE) Water Quality Standards for the appropriate segment (segment 5a - COARUA05A) are provided in Table 2 below. This segment has been classified by CDPHE, Water Quality Control Commission, 5 CCR 1002-32, Regulation No. 32 Classifications and Numeric Standards for Arkansas River Basin with the following uses: Agriculture, Aquatic Life Cold Class 1, Recreation E, and Water Supply.

The portion of "Lake Fork below Sugarloaf Dam to the confluence with the Arkansas River" includes some analytes for monitoring and evaluation (M&E) and 303(d) in Colorado Regulation 93 for this segment. However, there is 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 parameters of concern based on TMDLs developed for this segment. The Permit may be reopened to include limitations based on a finalized TMDL.

Table 2. Water Quality Standards for segment 5a (COARUA05A) (CO Regulation 32)

REGULATION #32 STREAM CLASSIFICATIONS and WATER QUALITY STANDARDS
Upper Arkansas River Basin

5a. All tributaries to the Arkansas River, including wetlands, from the source to immediately below the confluence with Brown's Creek, except for specific listings in segments 5b through 12b.

COARUA05A	Classifications
Designation	Agriculture
Reviewable	Aq Life Cold 1
	Recreation E
	Water Supply
Qualifiers:	

Other:

Temporary Modification(s):

Arsenic(chronic) = hybrid

Expiration Date of 12/31/2024

*chlorophyll a (mg/m^2)(chronic) = applies only above the facilities listed at 32.5(4).
*Phosphorus(chronic) = applies only above the facilities listed at 32.5(4).
*Uranium(acute) = See 32.5(3) for details.
*Uranium(chronic) = See 32.5(3) for details.

Physical and Biological	DM	MWAT
Temperature °C	CS-I	CS-I
	acute	chronic
D.O. (mg/L)	---	6.0
D.O. (spawning)	---	7.0
pH	6.5 - 9.0	---
chlorophyll a (mg/m^2)	---	150*
E. Coli (per 100 mL)	---	126

Inorganic (mg/L)	acute	chronic
Ammonia	TVS	TVS
Boron	---	0.75
Chloride	---	250
Chlorine	0.019	0.011
Cyanide	0.005	---
Nitrate	10	---
Nitrite	0.05	---
Phosphorus	---	0.11*
Sulfate	---	WS
Sulfide	---	0.002

Metals (ug/L)	acute	chronic
Arsenic	340	---
Arsenic(T)	---	0.02
Cadmium	TVS	TVS
Cadmium(T)	5.0	---
Chromium III	---	TVS
Chromium III(T)	50	---
Chromium VI	TVS	TVS
Copper	TVS	TVS
Iron	---	WS
Iron(T)	---	1000
Lead	TVS	TVS
Lead(T)	50	---
Manganese	TVS	TVS/WS
Mercury(T)	---	0.01
Molybdenum(T)	---	150
Nickel	TVS	TVS
Nickel(T)	---	100
Selenium	TVS	TVS
Silver	TVS	TVS(tr)
Uranium	varies*	varies*
Zinc	TVS	TVS

6 PERMIT LIMITATIONS

6.1 Technology Based Effluent Limitations (TBELs)

40 CFR § 451 establishes effluent limitations for the Concentrated Aquatic Animal Production (CAAP) Point Source Category, which includes fish hatcheries. 40 CFR § 451 is not applicable to facilities that produce less than 100,000 pounds of aquatic animals per year, such as the Hatchery, which produces approximately 82,000 pounds per year. Permittees subject to 40 CFR § 451 do not have numeric TBELs but are required to develop a Best Management Practices (BMPs) Plan detailing how the Permittee will address solids control, materials storage, structural maintenance, record-keeping, and training.

With this permit renewal, EPA has determined, based on professional judgment (PJ) that the 40 CFR § 451 ELGs appear to be an effective control for TSS and other pollutants associated with solids, and is applying BMP requirements to the Hatchery. The requirements at 40 CFR § 451.11 for the BMP Plan are presented below.

A. 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.

6. Drug and Chemical Management. The Permittee must:
   a. Only use drugs and chemicals deemed acceptable for use in waters that will or may be discharged to State waters in accordance with all applicable regulations, including, but not limited to requirements contained in the labeling of pesticide products approved under the Federal Insecticide Fungicide, and Rodenticide Act (FIFRA), and dosage and

usage requirements established by FDA and in strict accordance with the manufacturer's site-specific instructions.

b. Document all drug and chemical use, including Investigational New Animal Drugs, in the BMP Plan, and include or reference the Standard Operating Procedures for their storage and usage. Additionally, records must be maintained on-site that include the date of the treatment, the number of fish treated, the drug used, dosage, duration, type of treatment (static bath or flow), disease treated, estimated concentration at discharge, and the method of disposal.

All documentation for the BMP Plan is required to be maintained on-site and available for inspection.

The primary pollutants of concern in hatchery and rearing pond wastewater are the waste food and feces, as they affect water quality. Hatchery settling 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 0.024 mg/L and reported range was 0.017 – 0.024 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, there were no detected concentrations of total nitrogen. These values are well below the conservative annual median total inorganic nitrogen (TIN) 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. EPA 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 TSS concentration limitations for Outfall 001established in this Permit are more stringent than the state of Colorado's effluent limitation Regulation 62 limitation of 30 mg/L (30-day average) and 45 mg/L (daily maximum). The TSS mass limitations (480 lbs/day, 30-day average; 720 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 Rules as provided by Clean Water Act Section 402(o).

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 (7000 pounds during the maximum month of feeding per permit application) figures provided by the facility, would result in a TSS limit of 140 pounds TSS/day for 30 day average (calculated by 7000*2% or 7000/30*0.75*80%). Daily maximum limit equals to 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 the permit application. However, because 1) current Effluent Guidelines require only a BMP-based permit, and 2) anti-backsliding rules prevent relaxing previously established limits, this Permit will maintain the limits as established in the previous permit.

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.

EPA also considers the disease control chemicals used at these facilities as pollutants of concern. Fish hatching and rearing facilities use these chemicals to treat both internal and external fish diseases and to prevent the spread of disease at or between facilities.

All disease control chemicals must be used in accordance with label instructions. The Permit also prohibits the discharge of these chemicals in concentrations that would exceed federal or state water quality standards and requires the Hatchery to use BMPs to minimize the concentration of these chemicals in the discharge.

This Permit will require the facility to maintain a Chemical Operational Log, including chemical, dosage, duration, method of application, amount used, type of treatment (static bath or flow) estimated concentration at discharge and method of disposal information.

Only commercially produced fish feed shall be used (no unprocessed offal or other animal byproduct). No sanitary wastes shall be introduced into this discharge.

6.2 Water Quality Based Effluent Limitations (WQBELs)

The Hatchery discharges to an unnamed tributary to Hunt Gulch and into Lake Fork, a tributary to the Upper Arkansas River. 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.

6.2.1 Pollutants of Concern

Dissolved Oxygen

The previous permit required monthly monitoring for dissolved oxygen at the Hatchery in order to evaluate whether permit conditions would be needed to meet the water quality based requirements. A review of the dissolved oxygen analytical DMR results (see Table 2 above) showed that during the previous permit term, the lowest detected concentrations of dissolved oxygen was 6.98 mg/L and reported range was 6.98 – 10.4 mg/L. These values are well above the minimum chronic water quality standard of 6 mg/L as provided in Colorado Regulation 32 (see Table 1 above). EPA has determined that continued monitoring for dissolved oxygen at this Hatchery is not otherwise subject to Colorado Regulation 32 and is not required to meet water quality based requirements. Requirements for dissolved oxygen data collection have been removed from this Permit.

Temperature

Per Colorado Regulation 32 (see Table 2 above), there are two types of temperature criteria applicable to this Hatchery: Maximum Weekly Average Temperature ("MWAT") and Daily Maximum ("DM"). The MWAT provides protection against sublethal effects on metabolism, growth, and reproduction. The MWAT is defined as the maximum of 7-day rolling averages that are calculated using at least three equally spaced temperature readings in a 24 hour day (at least every eight hours for a total of 21 data points). The DM provides protection against lethal effects that elevated temperature can cause. The DM is defined as the maximum two hour average, with a minimum of 12 equally spaced measurements throughout the day (See definitions in CO regulation 31).

Seasonal temperature water quality standards are as follows:

Effluent Characteristic	**MWAT**	**DM**
Temperature, June-Sept.,°C (Cold Stream Tier 1 (CS 1))	17.0	21.7
Temperature, Oct.-May,°C	9.0	13.0

The temperature monitoring for the receiving water is removed from this Permit because they are not needed for reasonable potential determination for end of pipe limitations. A review of the temperature DMR results (see Table 1 above) showed that the current temperature monitoring data is not sufficient to include seasonal temperature data to determine MWAT and DM. This Permit requires the Permittee to monitor MWAT and DM for temperatures. The Permittee shall install continuous temperature monitoring equipment to collect data to calculate MWAT and DM. This webpage provides information how to monitor temperatures: https://cdphe.colorado.gov/water-quality/clean-water/rivers-lakes-and-streams/clean-water-temperature-monitoring.

Total residual chlorine (TRC)

The requirement to monitor TRC during the administration of Chloramine-T for fish disease treatment and chlorine is being used for cleaning and treatment.

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 very 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 001

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/	480	N/A	720	TBEL, PP
Oil and Grease (O&G), mg/L	N/A	N/A	10	PJ, PP
Temperature, MWAT, °C (Cold Stream Tier 1 (CS 1)) e/	N/A	Report only	N/A	CO Reg. 32, WQBEL
Temperature, DM, °C e/	N/A	N/A	Report only	CO Reg. 32, WQBEL
Total Residual Chlorine (TRC), mg/L f/	Report only	N/A	Report only	N/A
pH	Must remain in the range of 6.5 to 9.0 *at all times*			CO Reg. 32, WQBEL

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, MWAT=Maximum Weekly Average Temperature, DM=Daily Maximum Temperature.

c/ Flow shall be based on the combined flow measurements from Turquoise Reservoir at the water treatment plant, the effluent flow from Lake 3 at the parshall flume weir, and the flow measurements from the water treatment house at the natural spring.

d/ The sample for TSS shall be a flow weighted composite sample taken from Outfall 001.

e/ The Permittee shall install continuous temperature monitoring equipment to collect data to calculate MWAT and DM. MWAT is defined as the maximum of 7-day rolling averages that are calculated using at least three equally spaced temperature readings in a 24 hour day (at least every eight hours for a total of 21 data points). DM is defined as the maximum two hour average, with a minimum of 12 equally spaced measurements throughout the day.

f/ Monitor TRC only when Chloramine-T and chlorine is being used.

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.

Table 4. Monitoring requirements for Outfall 001

Effluent Characteristic	**Monitoring Frequency**	**Samples Type a/**	**Data Value Reported on DMR b/**
Flow, mgd c/	Monthly	Instantaneous	Daily Max. 30-Day Avg.
TSS, mg/L d/	Quarterly	Composite	Daily Max. 30-Day Avg.
O&G, visual e/	Daily	Visual	Narrative
O&G, mg/L e/	Immediately if visual sheen detected	Grab	Daily Max.
Temperature, MWAT, June-Sept.°C (Cold Stream Tier 1 (CS 1)) f/	Continuous	Continuous	MWAT
Temperature, MWAT, Oct.-May,°C f/	Continuous	Continuous	MWAT
Temperature, DM, June-Sept.°C f/	Continuous	Continuous	DM
Temperature, DM, Oct.-May,°C f/	Continuous	Continuous	DM
Total Residual Chlorine, mg/L g/	Daily	Grab	Daily Max. 30-Day Avg.
pH, units	Monthly	Grab	Instantaneous Min. Instantaneous Max.

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 measurements of effluent volume shall be made by reading the metered incoming water from Turquoise Reservoir at the water treatment plant, adding in the measured effluent flow from Lake 3, and adding the weir measurement from the natural spring. The average flow rate (in million gallons per day) during the reporting period and the maximum flow rate observed (in mgd) shall be reported.

d/ The sample for TSS shall be a flow weighted composite sample taken from Outfall 001.

e/ If a sheen is observed a grab sample must be taken and analyzed immediately for Oil and Grease.

f/ MWAT is defined as the maximum of 7-day rolling averages that are calculated using at least three equally spaced temperature readings in a 24-hour day (at least every eight hours for a total of 21 data points). DM is defined as the maximum two-hour average, with a minimum of 12 equally spaced measurements throughout the day.

g/ Monitor TRC only when Chloramine-T and chlorine is being used.

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

This Permit maintains a monthly inspection of their effluent ponds on the request of the Hatchery due to the high altitude and impacts of snowfall which create access issues. The Hatchery is required to inspect the effluent pond Outfall 001 on a quarterly basis because of the consistent nature of the discharges and the good compliance history from the Hatchery. Unless otherwise modified in writing by EPA, the Permittee shall inspect its water treatment plants on a weekly basis. The permittee shall document the inspection information obtained during the weekly, monthly, and quarterly inspections.

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 sections 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 December 1, 2021 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 of 6,140.69 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
Canada Lynx	*Lynx canadensis*	Threatened	There is final critical habitat for this species (published in the Federal Register on September 12, 2014).	No effect (Not aquatic dependent species)
Mexican Spotted Owl	*Strix occidentalis lucida*	Threatened	There is final critical habitat for this species (published in the Federal Register on August 31, 2004).	No effect (Not aquatic dependent species)

Species	Scientific Name	Species Status	Designated Critical Habitat	Determination
Greenback Cutthroat Trout	*Oncorhynchus clarkii stomias*	Threatened	No critical habitat has been designated for this species.	No effect (Candidate species does not need consultation. No critical habitat)
Monarch Butterfly	*Danaus plexippus*	Candidate	No critical habitat has been designated for this species.	No effect (Candidate species does not need consultation. No critical habitat)
Uncompahgre Fritillary Butterfly	*Boloria acrocnema*	Endangered	No critical habitat has been designated for this species.	No effect (no critical habitat)

11.1 Biological Evaluation

This Hatchery discharges to an unnamed tributary to Hunt Gulch and into Lake Fork, a tributary to the Upper Arkansas River. 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 determines this Permit is "No effect" for the Greenback Cutthroat Trout listed by the U.S. Fish and Wildlife Service under the Endangered Species Act. The Greenback Cutthroat Trout is not known to Lake Fork stream and Brown Trouts will out compete Greenback Cutthroat Trouts in the area. EPA also determines "No effect" for Canada Lynx, Mexican Spotted Owl, Monarch Butterfly, and Uncompahgre Fritillary Butterfly. The justification to support the "No effect" determination are as follows: This is a renewal permit. 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.

In addition, 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 the species as described in the table above. Since a "No effect" determination was made, no formal consultation with USFWS is required.

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, December 2021.

ADDENDUM

AGENCY CONSULTATIONS

EPA sent a 401 certification request letter to Colorado on February 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 February 25, 2022. The public notice period closed on March 28, 2022. EPA did not receive any comments.