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

PERMITTEE:	Montana Department of Fish, Wildlife, and Parks
FACILITY NAME AND ADDRESS:	Jocko River Trout Hatchery 71873 Hatchery Lane Arlee, MT 59821
PERMIT NUMBER:	MT-0030546
RESPONSIBLE OFFICIAL:	Jeff Lammerding, Manager (406) 726-3344 jeff.lammerding@mt.gov
FACILITY CONTACT:	Jeff Lammerding, Manager (406) 726-3344 jeff.lammerding@mt.gov
PERMIT TYPE:	Indian Country, Minor, Renewal, Concentrated Aquatic Animal Production (CAAP) Facility
FACILITY LOCATION:	71873 Hatchery Lane Arlee, MT 59821 47.1695° N, 114.0818° W, Flathead Reservation, Lake County, Montana

1 INTRODUCTION

This statement of basis (SoB) is for the reissuance of a National Pollutant Discharge Elimination System (NPDES) permit (the Permit) to the Montana Department of Fish, Wildlife, and Parks (Permittee) for the Jocko River Trout Hatchery (Facility). The Permit establishes discharge limitations for any discharge of wastewater from the Facility through Outfall 001 to the Jocko 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 Facility is located on the Flathead Reservation. EPA Region 8 is the permitting authority for facilities located in Indian country, as defined in 18 U.S.C. § 1151, located within Region 8 states and implements federal environmental laws in Indian country consistent with the EPA Policy for the Administration of Environmental Programs on Indian Reservations and the federal government's general trust responsibility to federally recognized Indian tribes.

2 MAJOR CHANGES FROM PREVIOUS PERMIT

Major changes from the previous permit include the following:

- Total Kjeldahl Nitrogen (TKN) monitoring requirements have been added. Previously, they were required as part of the Total Nitrogen measurement but not listed out explicitly in the monitoring tables.
- Oil and grease effluent limitations and monitoring requirements have been added.
- Effluent monitoring frequencies for many pollutants (ammonia, nitrate+nitrite, total kjeldahl nitrogen, total phosphorus, total suspended solids, and dissolved oxygen) have been increased from semi-annual to either three times per year or quarterly.
- Quarterly effluent monitoring of temperature has been added.
- Receiving water monitoring requirements for two pollutants (ammonia and dissolved oxygen) have been removed.
- Receiving water monitoring frequencies for many pollutants (nitrate+nitrite, total kjeldahl nitrogen, total phosphorus) have been increased from semi-annual to three times per year.
- Several narrative permit conditions have been removed (see section 6.2.13).
- A nitrogen source identification study has been added as a special condition (see section 8). This includes the addition of two new internal monitoring points (see Table 1).
- An additional best management practice (BMP) has been added (see section 6.1.6).
- Requirements for weekly inspections have been added (see section 10.1).

3 BACKGROUND INFORMATION

The Facility is located along the Jocko River in northwestern Montana near Arlee, Montana at coordinates 47.1695° N, 114.0818° W. The Facility is located within the external boundaries of the Flathead Indian Reservation, which is home to the Confederated Salish and Kootenai Tribes (CSKT or the Tribes). The Facility is owned and operated by the Permittee for the purpose of raising Arlee rainbow trout broodstock for egg production. According to the Permit application, the Facility produces approximately 34,400 pounds of trout per year in its flow-through system

and uses up to 5,351 pounds of non-medicated fish feed per month. The Facility also fertilizes eggs during spawn season from October through December. The Facility produces about 5.5 million rainbow trout eggs every year for other state, federal, and private hatcheries in Montana and around the United States. The Facility also keeps about 400,000 eggs each year and raises them to various planting sizes and plants them mostly in western Montana. The Facility also maintains the Arlee broodstock consisting of four age classes. The Facility uses spring water in its flow-through system. There are applicable federal Effluent Limitation Guidelines (ELGs) at 40 CFR 451, Subpart A. These are further discussed in section 6.1. The Facility has one outfall that discharges used spring water after it has passed through either fish tanks or raceways, along with several internal and receiving water monitoring locations (Table 1). These additional monitoring locations are further discussed in sections 7 and 8.1 of the SoB.

Table 1. Facility Outfall Location and Monitoring Points

Outfall or Monitoring Point	Latitude (° N)	Longitude (° W)	Description	Receiving Water
001	47.1706	114.0860	Outfall: Effluent from the hatchery operation after it leaves settling pond but before it enters Jocko River	Jocko River
001U	At or near 47.1702	At or near 114.0824	Receiving Water Monitoring Location: Jocko River upstream from facility discharge	N/A
IM01	At or near 47.1693	At or near 114.0818	Internal Monitoring Location: Spring water (source water) prior to entering facility	N/A
IM02	At or near 47.1701	At or near 114.0841	Internal Monitoring Location: Combined effluent from the raceways and tanks prior to entering settling pond	N/A

3.1 Facility Process Description

Source water for the Facility comes from underground springs approximately 0.2 and 0.4 miles east of the Facility. The spring water collection system runs downhill and has perforated pipes. There are two separate spring water collection systems – one feeds the tank rooms and upper raceways, while the other feeds the lower raceways. Water flows through the system and then effluent from the raceways and tanks combines and goes to a settling pond prior to discharge to the Jocko River. Water is typically not re-used. The Facility consists of ten indoor tanks for cultivation of trout eggs and fifteen outdoor raceways.

Small fish (juveniles) and eggs are located in the tank room. These tanks are cleaned once per day when fish are present by lowering the water level in the tanks and using a push broom to remove the detritus. The indoor tanks drain to a floor drain. Once fish are approximately two inches in length, they are moved to the upper raceways. These contain three different age

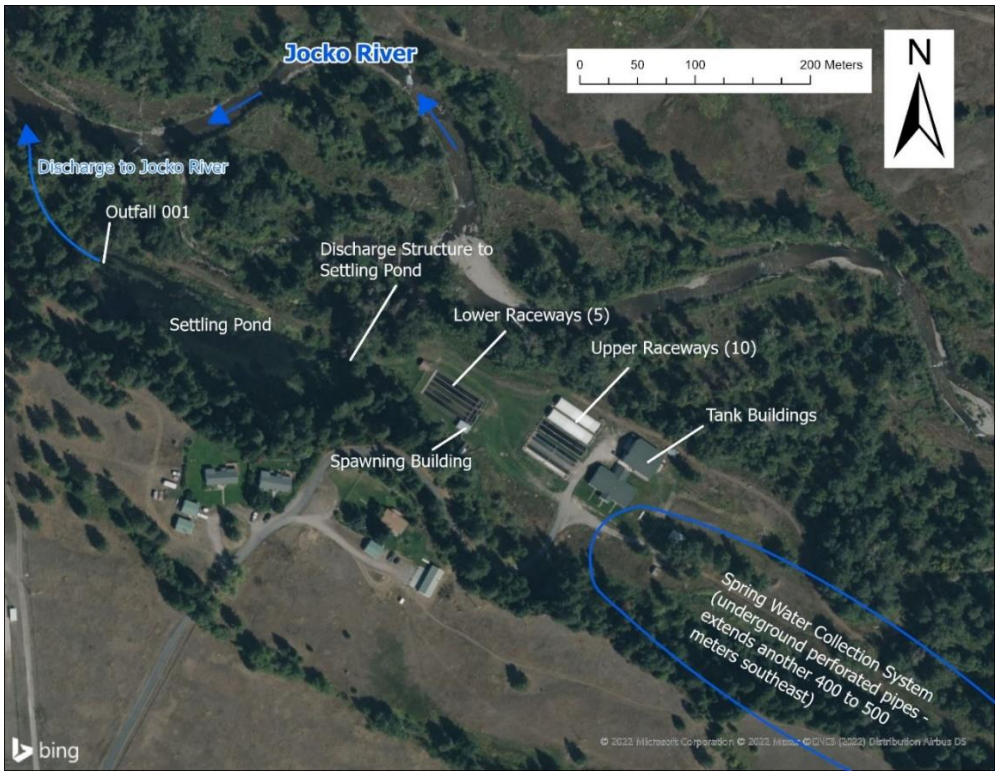
classes and there are tents covering four of the ten raceways to protect fish from direct sunlight and bird predators. One upper raceway is the "display raceway" and has large "retired" trout in it for visitors and classes to observe. The water from the upper raceways can be re-used by diverting it into the lower raceways using gravity. This is typically only done during low flows in the spring months. Detritus is removed from the outdoor raceways approximately two times a week using a push broom and the same process as the indoor tanks. After fish have been removed from a raceway, the raceway is power sprayed with water.

The lower raceways have their own separate water collection system (unless water is being re-used from upper raceways), and contain the older 3-4 year old broodstock. Discharges from all the tanks and raceways are routed to a collection structure just below the lower raceways, which then routes the wastewater into a settling pond, which discharges via Outfall 001 to a channel that flows into the Jocko River. The discharge flow measuring device (a flume/weir) is located at the collection structure prior to the settling pond. Besides flow, all monitoring samples are collected at Outfall 001. The outfall structure is a wooden dam with slats that can be raised or lowered as needed. Water simply flows over the top of it.

Mortalities are always collected and put in a freezer, where they are eventually given to a bird rehab facility or taken to the landfill – they are never discharged into the Jocko River.

Finally, there is a small spawning building located at the southeast corner of the lower raceways. This building is where eggs from females are taken and fertilized. An aerial image overview of the Facility, settling pond, and discharge point is shown below (Figure 1).

Figure 1. Jocko River Trout Hatchery



3.2 Treatment Process

The settling pond is the only treatment used at the Facility. Water runs into the various tanks and raceways directly from the spring water collection system and is mainly used as once-through water before discharging to the outfall structure. Throughout the year, various chemical treatments are given to the trout to reduce disease and kill bacteria and parasites. These are further described in the next section.

3.3 Chemicals Used

The Facility uses several chemicals to help clean the raceways and protect the health of the rainbow trout. These are further discussed below. These are all used in small amounts and only at certain times during the year. It is usually most economical for the Facility to do chemical treatments in the small tanks in the tank room since smaller volumes save money, and the small volumes also make it much easier to mix and apply the appropriate dose, which increases accuracy and overall fish survival. The Facility also uses non-medicated fish feed at the Facility. The maximum reported monthly usage of fish feed was 5,351 pounds.

The Facility does not use any chlorine or chlorine products (like Chloramine-T). They used to use it but it was too hard on equipment so they stopped. Now they just wash, heat, and dry all equipment as part of the cleaning process.

Hydrogen peroxide is used to make standing baths for gill disease. Small fish get sick and this helps them get rid of excess bacteria on gills. The Facility uses it as needed, but typically about once per year during the low flow time of year (March - April). They primarily use it in the tank room in small quantities. Typically, they use approximately 0.5 liters to make a 1-2% solution of hydrogen peroxide in each tank. It is left it in the tank for 30 minutes then discharged to the settling pond. Hydrogen peroxide is very rarely used in larger quantities outside in a raceway if/when a disease outbreak occurs, but this is extremely rare (the Permittee estimated this has been done once in the past 20 years).

Sodium chloride (i.e., table salt) is used as a general fish-cleansing agent to reduce parasites and bacteria on fish. The Facility uses it as needed, but typically about once per month. Table salt makes the fish excrete excess mucus and this flushes off skin parasites. Most of the time this dosing is done in the tank room, but it is done in the raceways occasionally when fish exhibit symptoms. Quantities used in the tank room are very small, but if done in a raceway, the Facility will dump 150-200 lbs of salt into the raceway three days in a row.

Formalin is used in the tank room to treat fish eggs and remove fungus from them. The Facility does this every day during spawn season (October through December). The Facility uses approximately 25 gallons per year total (about 1.25 liters per day during spawning season).

MS-222 is used primarily during spawn season (October through December). It is used in the spawn house as a fish anesthetic on females during spawning. It is mixed with water so that it is easier to measure. The Facility uses a total of approximately 500 grams per year total, and for approximately 26 days per spawn season (about 20 grams/day during spawning season).

They use it sparingly during the rest of the year – approximately one to three times – in very small quantities to take weights and lengths on small samples of fish.

Ovadine or Betadine (manufacturer names – also known as iodone) are buffered iodine solutions and are used during spawn season (October through December) as an egg disinfectant. The Facility uses about one gallon per year total. It is used in the spawn house when transporting eggs from there to the tank room for incubation. The eggs get a 30-minute bath in large 5-gallon water coolers. It is a bactericide used for any bacteria the egg might pick up from the female ovarian fluid or male milt. This chemical is used approximately 11 days per spawn season.

4 PERMIT HISTORY

According to EPA records maintained for the Facility, this renewal is the 4th issuance of this NPDES permit. The previous permit for the Facility became effective on January 1, 2017 and was set to expire on December 31, 2021. The Facility submitted a permit renewal application prior to the permit expiration date, and thus the previous permit was administratively continued.

4.1 Discharge Monitoring Report (DMR) Data

The Facility's discharge data from Outfall 001 is summarized below (Table 2). In the previous permit cycle, the Facility has had two exceedances for their pH violations – one below the minimum allowed pH in December 2020, and one above the maximum allowed pH in December 2017. These may be related to instrument calibration errors or natural fluctuations in the source water, as the pH values for the receiving stream (upstream of the discharge) were similarly low or high at those times (6.8 in December 2020 and 9.6 in December 2017).

Although there were no total suspended solids (TSS) exceedances, the Facility stated that the one or two high TSS values they reported were likely due to animals in the settling pond. There are several beavers that inhabit the pond in the summer, and a couple of hundred geese that spend their days there in the winter. The beavers are constantly trying to dam up the settling pond outfall structure, and as the staff is removing the beaver dam (sometimes almost daily in the summer), they stir up a large amount of TSS. The geese in general agitate the pond and stir up sediment. Because of local laws, the Permittee is unable to do much to deter or get rid of the animals.

Table 2. Summary of the DMR Data (January 2017 through June 2022) for Outfall 001 from EPA Integrated Compliance Information System (ICIS) database (data accessed on November 2, 2022)

Parameter	Permit Limit(s)	Reported Average	Reported Range	Number of Data Points	Number of Exceedances
Discharge Volume, Monthly Average, million gallons per day (mgd)	N/A	5.4	2.3 – 9.0	64	N/A
Discharge Volume, Daily Max, million gallons per day (mgd)	N/A	6.1	2.7 – 10.1	64	N/A
Nitrate, mg/L	N/A	0.76	0.05-1.35	11	N/A
Ammonia, mg/L	N/A	0.08	0.04-0.14	10	N/A
Total Nitrogen (TN), mg/L	N/A	1.63	0.57-2.91	10	N/A
Total Phosphorus (TP), mg/L	N/A	0.014	0.010-0.021	10	N/A
Dissolved Oxygen, mg/L	N/A	10.4	8.7-12.3	11	N/A
pH, standard units	6.5-8.5	7.9 a/	6.2-9.3	19	2
Total Suspended Solids (TSS), 30-Day Average, mg/L	N/A	3	<1-15	9	N/A

4.2 Other Facility History

The Facility has not been inspected in the last permit cycle.

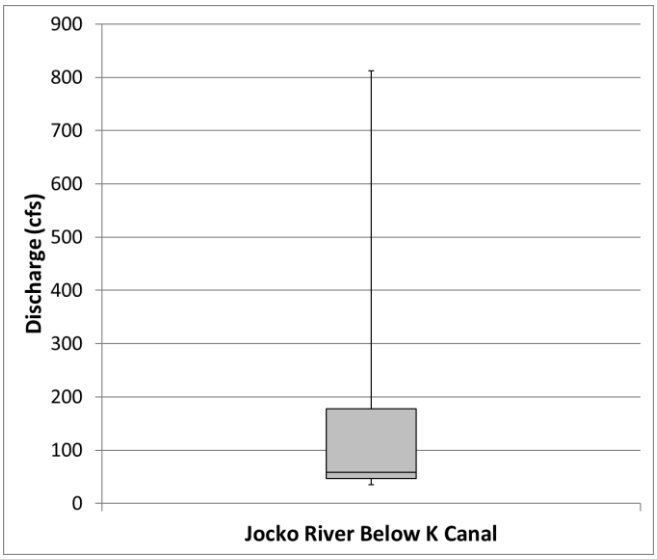
5 DESCRIPTION OF RECEIVING WATER

The Facility discharges into the Jocko River, which is a tributary of the Flathead River (Figure 2). There are no United States Geological Survey (USGS) gauging stations on the Jocko River with streamflow statistics that are representative of stream flows near the Facility. However, the CSKT have a water quality sampling station, JCK-JKC4059 ("Jocko River Below K Canal"), approximately 4.5 miles upstream of the Facility where they have collected flow data, and there are no major tributaries between that site and the Facility. The site is also just below a major irrigation withdrawal; no other known irrigation withdrawals occur between the sampling site and the Facility. According to the USGS StreamStats website, the watershed size at the sampling location and the watershed size at the Facility are nearly identical (149 square miles at the sampling site vs. 153 square miles at the Facility), so flow conditions at this location should be representative of flow conditions at the Facility. Flow measurements were collected 21 times between November 2005 and February 2007. This dataset is not sufficient to calculate statistical low flows such as a 7Q10, but can provide a simple statistical summary (Figure 3). The average reported flow was 136 cubic feet per second (cfs), and the minimum reported flow was 13.6 cfs. However, after careful review EPA discarded the 13.6 cfs observation as an error. It was taken on the same day as several other observations in the stream

downstream and upstream of the site, and none of these were nearly as low as this value. Additionally, the flow at the same location was measured the month before and the month after, and it was significantly higher in both cases. The time of year it was taken (early July) is traditionally a high flow time of year. Finally, no other single flow measurement comes anywhere close to this reported value. Due to these circumstances, EPA believes this value to be an error and is excluding this value from the data set. The next lowest flow measurement is 35 cfs.

Figure 2. Facility Receiving Water

Figure 3. Box and Whisker Plot of Jocko River Flows near the Facility (n=20 samples – one sample was removed)



The previous permit required monitoring of the receiving water upstream of the Facility for nitrate+nitrite, ammonia, TN, TP, temperature, dissolved oxygen (DO), and pH (Table 3).

Table 3. Summary of the DMR Data (January 2017 through June 2022) for Outfall 001U (Jocko River upstream from facility) from EPA Integrated Compliance Information System (ICIS) database (data accessed on November 2, 2022)

Parameter	Reported Average	Reported Range	Number of Data Points
Nitrate+Nitrite, mg/L	0.27	0.03-0.89	11
Ammonia, mg/L	0.06	0.02-0.11	11
Total Nitrogen (TN), mg/L	0.36	0.10-0.72	10
Total Phosphorus (TP), mg/L	0.004	0.002-0.005	9
Temperature, °C	7.97	2.8-14.3 a/	20
Dissolved Oxygen, mg/L	11.0	9.1-12.7	11
pH, standard units	8.40 b/	6.8-9.6	19

a/ Two temperature values were reported in units of Fahrenheit, as verified by the Permittee (39 in March 2019, and 57 in June 2019). These were converted to Celsius and included in the summary.

b/ median pH

6 PERMIT LIMITATIONS

6.1 Technology Based Effluent Limitations (TBELs)

TBELs are national effluent limitations developed by EPA for certain industries. They are industry-specific and intended to represent the greatest pollutant reductions that are

economically achievable for an industry. 40 CFR Part 451 establishes effluent limitations for the Concentrated Aquatic Animal Production Point Source Category, which includes fish hatcheries. Permittees subject to 40 CFR § 451 do not have numeric TBELs but are required to develop a best management practices (BMP) Plan detailing how the Permittee will address solids control, materials storage, structural maintenance, record-keeping, and training.

Subpart A of this section applies to discharges of pollutants from facilities that produce 100,000 pounds or more of aquatic animals per year in a flow-through or recirculating system. The Facility produces approximately 40,000 pounds of trout per year. However, because the BMP Plan requirements associated with 40 CFR Part 451 are an effective control for TSS and other pollutants associated with fish hatcheries, and because they are economical to implement, EPA has applied these controls to the Facility in the past and will continue to use professional judgment (PJ) to apply these requirements to the Facility. The requirements at 40 CFR § 451.11 for the BMP Plan are presented below.

6.1.1 Solids Control. The Permittee must:

1. 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 United States.

2. In order to minimize the discharge of accumulated solids from settling ponds and basins and production systems, 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.

3. Remove and dispose of aquatic animal mortalities properly on a regular basis to prevent discharge to waters of the United States, except in cases where the permitting authority authorizes such discharge in order to benefit the aquatic environment.

6.1.2 Materials Storage. The Permittee must:

1. 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 United States.

2. Implement procedures for properly containing, cleaning, and disposing of any spilled material.

6.1.3 Structural maintenance. The Permittee must:

1. Inspect the production system and the wastewater treatment system on a routine basis in order to identify and promptly repair any damage.

2. Conduct regular maintenance of the production system and the wastewater treatment system in order to ensure that they are properly functioning.

6.1.4 Recordkeeping. The Permittee must:

1. In order to calculate representative feed conversion ratios, maintain records for aquatic animal rearing units documenting the feed amounts and estimates of the numbers and weight of aquatic animals.

2. Keep records of documenting the frequency of cleaning, inspections, maintenance and repairs.

6.1.5 Training. The Permittee must:

1. In order to ensure the proper clean-up and disposal of spilled material adequately train all relevant facility personnel in spill prevention and how to respond in the event of a spill.

2. Train staff on the proper operation and cleaning of production and wastewater treatment systems including training in feeding procedures and proper use of equipment.

Requirements 6.1.1 through 6.1.5 above are directly from the regulations in 40 CFR § 451.11. Because they are being applied on a PJ basis, and to clarify the expectations of the BMP Plan, the following requirements will also be included in the BMP Plan requirements for the Permit. A *Drug and Chemical Management* section will also be a required element of the BMP Plan. It will require proper usage of all chemicals and drugs and for the BMP Plan to include or reference the Facility's Standard Operating Procedures (SOPs) for storage and usage of all drugs, chemicals, and pesticides used at the Facility. As the Facility is already conducting facility inspections on a weekly basis, the inspection requirement associated with the *Structural Maintenance* section will be specified as weekly. The Facility will be required to maintain documentation on-site regarding average daily and total annual feed usage annually. Additionally, the training element will include a requirement to document the participants, date, and topics covered for staff training. This *Drug and Chemical Management* plan was included in the previous permit and will be retained in this permit.

6.1.6 Additional BMPs

During permit development, the Permittee mentioned that they had been performing a two-point calibration of their pH meter with a buffered solution of pH 4 and pH 7. The median value for reported pH in both the effluent and the receiving stream was at or above 8.0. Additionally, several pH values that the Permittee reported for both the effluent and the receiving water seemed unusually high – well above 9.0 on several occasions (Table 2 and Table 3).

When performing a two-point calibration, it is generally a best management practice to calibrate to both a "neutral" buffer with a pH of 7, and a second buffer that brackets the expected sample pH. In this particular case, it would be more appropriate to use a second calibration standard with a pH of 10 for a two-point calibration of the pH meter. This will better ensure that measured pH values are accurate and minimize meter drift that can occur when measured values are not bracketed by calibration points. This BMP will be included in the Permit.

Since the BMP Plan is a requirement of the previous permit and only very minor additions (see section 6.1.6) are being proposed, the Facility will be required to comply with BMP Plan requirements upon the effective date of the permit. The plan must be 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 and the CSKT upon request.

6.1.7 Additional TSS Considerations

In the 1970s, EPA Region 8 developed a protocol for fish farming facilities. This protocol derived a load-based TSS limit based on the monthly food mass used at the Facility, but did not consider flows. This approach became problematic when applied to a facility such as this one that has high discharge flows but uses relatively low amounts of food. Facilities with high flows have higher TSS loads, even when they are discharging at low TSS concentrations.

For example, the Facility's previous load-limit – converted to a concentration (based on max monthly flows) – was just over one mg/L TSS. The Facility's discharge is low in TSS – regularly at or near non-detection levels (Table 2) – yet they were frequently exceeding their protocol-based load limit.

Since the low TSS concentrations in the effluent demonstrate the success of the existing ELGs found in 40 CFR 451 (i.e., a BMP Plan and the Facility's solids controls plan), EPA Region 8 removed this protocol from consideration during the last permit reissuance. We will continue this approach moving forward and rely on the ELGs to manage TSS in the Permit.

6.2 Water Quality Based Effluent Limitations (WQBELs)

WQBELs are based on water quality standards and must be established for any parameters where TBELs are not sufficient to ensure water quality standards will be attained in the receiving water (40 CFR 122.44(d)). The parameters that must be limited are those that are or may be discharged at a level that will cause, or have the reasonable potential to cause, or contribute to an excursion above any water quality standard. The purpose of this section is to provide a basis and rationale for establishing WQBELs based on the applicable water quality standards of the receiving water.

Within the *Technical Development Document for the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category* (EPA 2004)[1], effluent data from state, federal, and large commercial flow-through and recirculating facilities with NPDES permits was analyzed to identify the pollutants of concern from hatcheries. The primary pollutants generated by hatcheries that may be harmful to water quality are conventional pollutants such as biological material (measured by BOD_5), TSS, oil & grease, dissolved oxygen (DO), and pH; and non-conventional pollutants such as total residual chlorine (TRC), ammonia (NH_3), nitrate (NO_3),

[1] EPA. Technical Development Document for the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category, EPA-821-R-04-012, August 2004.

total nitrogen (TN), and total phosphorus (TP), metals, and bacteria (EPA 2004). Typically, flow-through systems have low pollutant concentrations because of the high flow volume, and the highest concentrations are generated during feeding and cleaning. The reasonable potential analysis is based on a combination of findings discussed in the *Technical Development Document* and monitoring data from the Facility.

The Facility discharges to the Jocko River. The receiving water is within the Flathead Reservation, and thus the CSKT's water quality standards (WQS) apply. The CSKT published the latest revision of their WQS in October 2018, and these updated WQS became CWA-effective when EPA approved them in April 2019[2]. EPA considered these during the development of effluent limitations for the Permit.

From the Facility's discharge, the Jocko River flows approximately 20 miles into the Flathead River, which flows approximately 23 miles from the confluence with the Jocko River before it reaches the Reservation boundary with the state of Montana. Based on the flow distance and the dilution provided by both the Jocko River and the Flathead River, EPA does not consider there to be any potential to cause or contribute to a violation of Montana's WQS, and they were not considered in the development of the Permit.

According to Section 1.3.7 of the CSKT WQS, the Jocko River is classified as a B-1 stream ("Flathead River and its tributaries downstream of the highway bridge at Polson…"). Waters classified as B-1 must be "*maintained suitable for drinking and culinary and food processing purposes after conventional treatment; bathing, swimming and recreation; wildlife (birds, mammals, amphibians and reptiles); the growth and propagation of salmonid fishes and associated aquatic life; and agricultural and industrial water supply purposes.*"

The CSKT have adopted designated uses, numeric and narrative water quality criteria, and antidegradation requirements as part of their WQS. The Permit will not allow any pollutants and/or pollution to be discharged which, either alone or in combination with other pollutants and/or pollution, will cause exceedances of any WQS.

Although the CSKT have adopted WQS that have been approved by EPA, they have not listed water bodies as impaired, nor developed a 303(d) list to require Total Maximum Daily Loads (TMDLs) developed for impaired water bodies. Thus, there are no TMDLs to consider for the Permit at this time. The Permit contains a reopener provision that would allow the Permit to be reopened to include any applicable Waste Load Allocation developed and approved by the CSKT and EPA.

The following pollutants were identified as pollutants of concern and were further analyzed to determine whether they would need to be limited in the Permit.

6.2.1 TSS and Biochemical Oxygen Demand (BOD_5)

The CSKT do not have any numeric WQS for TSS or BOD_5, but several of their narrative and numeric criteria address suspended sediments, turbidity, emulsions and sludge, etc.

[2] Confederated Salish and Kootenai Tribes of the Flathead Reservation, Surface Water Quality Standards and Antidegradation Policy, October 2018.

Implementation of the BMPs in section 6.1, along with the Facility's current management of solids and the settling pond effluent (which average 3 mg/L TSS – see Table 2) will protect the CSKT's numeric criterion for turbidity (see Section 1.3.7(3)(d)), as well as their narrative criteria which states Tribal waters must be free from substances that may or will *settle to form objectionable sludge deposits or emulsions beneath the surface of the water or upon adjoining shorelines* (CSKT WQS, Section 1.3.13(1)(a)). Controlling the discharge of suspended solids also means that the organic matter causing BOD_5 will be controlled as well. The high DO levels present in the wastewater discharge (see Table 2) also attest to low BOD_5 in the Facility discharge. For these reasons, there is no reasonable potential to cause or contribute to an exceedance of these narrative standards, and no WQBELs for TSS or BOD_5 will be included in the Permit.

6.2.2 Oil and Grease

The CSKT WQS include a narrative criterion, which states Tribal waters must be free from substances that may or will *create floating debris, scum, a visible oil film (or be present in concentrations at or above 10 mg/L) or globules of grease or other floating materials* (CSKT WQS, Section 1.3.13(1)(b)). EPA Region 8 has developed a protocol for limiting oil and grease that aligns very closely with the CSKT WQS. EPA's protocol uses a dual approach: frequent visual observations of the discharge, looking for a visible sheen or floating oil, and when either of those is observed, a sample must be immediately taken and analyzed for oil and grease with an effluent limitation of 10 mg/L.

Oil and grease is a pollutant of concern at the Facility because fish feeds commonly contain oil. The previous permit removed the 10 mg/L effluent limit and daily visual observation based on a determination of no reasonable potential. However, because fish feed does contain oils and this is a relatively easy permit limit to implement (i.e., as long as there is no observed oil and grease, all it requires is visual observations with no reporting requirements), EPA is reinstating the oil and grease effluent limit.

Additionally, the previous permit contained a narrative prohibition against floating solids and visible foam. This narrative prohibition is commonly used in many NPDES permits throughout the country and Region 8 to protect against pollutants that would cause or contribute to exceedances of narrative criteria such as the one discussed above. EPA will retain this narrative prohibition based on professional judgment.

6.2.3 pH

The Tribal WQS for B-1 classified waters for pH is that *induced variation of pH within the range of 6.5 to 8.5 must be less than 0.5 pH unit. Natural pH outside this range must be maintained without change, and natural pH above 7.0 must be maintained above 7.0.* This standard is difficult to implement without detailed knowledge of the receiving water flows and pH at any given time, so EPA has simplified implementation by requiring the Facility to discharge within the stated range (i.e., 6.5 to 8.5) at all times. This effluent limit was applied in the previous permit, and will be maintained in the Permit. This limit is more stringent than the CSKT Human Health WQS of 5.0 to 9.0.

6.2.4 Fecal coliform and *E. coli*

While the CSKT have numeric WQS for both of these organisms, fecal coliform and *E. coli* are a specific class of bacteria that generally inhabit the intestines of warm-blooded animals. The fish raised at the Facility are not a likely source of these types of bacteria. Based on this, EPA has determined that there is no reasonable potential to cause or contribute to an exceedance of these numeric standards, and fecal coliform and *E. coli* effluent limitations and monitoring will not be included in the Permit.

6.2.5 Temperature

The CSKT temperature water quality criteria allow a slight increase or decrease in naturally occurring water temperatures. In this case, the Facility is a fish hatchery that uses natural underground spring water as once-flow through in its facilities. The Facility uses groundwater in a flow-through system. Groundwater tends to moderate surface water temperatures year-round. Additionally, the Facility raises trout, and trout require relatively low water temperatures to thrive and survive. Based on these factors, EPA has determined that there is no reasonable potential to cause or contribute to an exceedance of this standard, and temperature effluent limitations will not be included in the Permit.

6.2.6 Ammonia

CSKT ammonia WQS are pH and temperature dependent. As pH and temperature in the receiving water increase, the toxicity of ammonia to aquatic life increases. At high pH values, ammonia is much more likely to be present in its toxic (un-ionized) form, while higher temperatures are generally more stressful for many types of aquatic life.

Ammonia is a pollutant of concern in fish hatcheries such as this one. Fish create ammonia in their waste products. Based on the monitoring data from Table 2, the Facility has reported discharge values of between 0.05 and 0.14 mg/L total ammonia. These are low values and the dataset shows a relatively low variability. Ammonia concentrations this low are unlikely to exceed any potential water quality standards for ammonia. However, EPA also reviewed the available monitoring data in the Jocko River (Table 3). The Facility collected 19 pH samples and 20 temperature samples in the past five years.

While the CSKT WQS do not specify the 'critical conditions' to use when applying ammonia criteria, EPA used the 80th percentile of pH and temperature data to implement chronic ammonia criteria on the Flathead Reservation. The 80th percentiles of the Facility's receiving stream data were a pH of 8.64 and a temperature of 13.0 °C. For the chronic values, EPA defaults to the "Fish Early Life Stages Present" table unless site-specific data indicates otherwise. According to the table on page 67 of the CSKT WQS, the 80th percentiles above (rounded up to the next available table value of 8.7 and 14 °C [slightly more conservative]) equate to a chronic water quality criterion of 0.778 mg/L. For the acute value, EPA used the 'Salmonids Present' column on page 66 of the CSKT WQS, since the stream is listed as a B-1 stream, which includes the "*growth and propagation of salmonid fishes*." The smallest value in this entire column is 0.885 mg/L, which is higher than the

calculated chronic criteria. This indicates that the chronic criteria is the appropriate driver behind the reasonable potential calculation.

EPA also notes that there was some discussion about the high pH values obtained by the Facility during monitoring. The reported ambient upstream pH values were well above 9 on several occasions. The Facility mentioned that they had been calibrating their pH meter to a pH 4 and pH 7 standard, rather than using a pH 10 standard as well. This may have affected their pH readings at the high end. If these pH readings were in error, the resulting ammonia criteria would be overly conservative.

Regardless, a comparison of the Facility's effluent data and the appropriate ammonia water quality criteria show that, even discounting dilution and potential errors in the pH measurements that would increase the perceived toxicity of ammonia, there is no reasonable potential for the Facility to cause or contribute to an exceedance of the ammonia water quality standard. Based on this, EPA has determined that ammonia effluent limitations will not be included in the Permit.

6.2.7 Total Residual Chlorine (TRC)

The Facility previously used chlorine bleach occasionally to disinfect equipment, but stopped using it many years ago because it was too hard on equipment. They now just wash, heat, and dry all equipment with fans in lieu of chemical disinfection. The Facility does not use Chloramine-T (a common fish disinfectant) either. Since there is no chlorine use at the Facility, there is no reasonable potential for the Facility to cause or contribute to an exceedance of the Tribe's TRC standard, and no effluent limitations or monitoring requirements will be included in the Permit. The Permit does contain requirements for the Permittee to notify EPA when new chemicals are used; if chlorine is introduced to the process, the Permit could be modified to include chlorine limits and monitoring.

6.2.8 Dissolved Oxygen (DO)

The relevant CSKT criteria for DO is that it must not be reduced below the applicable values from the *Freshwater Aquatic Life Standards for Dissolved Oxygen* table (CSKT WQS, page 65). The chart ranges in value from 4.0 mg/L to 9.5 mg/L, depending on the criteria and the presence of early life stages of fish. Flow-through systems typically maintain high DO levels (EPA 2004). The Facility discharge data (Table 2) indicates that the discharge's DO ranges from 8.7 to 12.2 mg/L. Even discounting dilution, these high DO values indicate that there is no reasonable potential for the Facility's discharge to cause or contribute to an exceedance of the in-stream DO water quality standard, and DO effluent limitations will not be included in the Permit.

6.2.9 Metals

Metals are present in many products used at fish hatcheries including cleaning materials, disinfectants, and feed. However, the Facility does not use cleaning products such as copper sulfate, nor any other products known to contain metals. Trout are extremely sensitive to metal contamination in water, and the success of the Facility is one factor that suggests that metals are not present in high quantities in the water. Additionally, the BMP Plan focuses on

solids control and minimizing addition of solids in the water column. For these reasons, EPA has determined that there is no reasonable potential for the Facility's discharge to cause or contribute to an exceedance of tribal metals WQS, and effluent limitations or monitoring requirements for metals will not be included in the Permit.

6.2.10 Aquaculture Drugs and Chemicals

Several drugs and chemicals are used at the Facility to aid in fish growth and control the occurrence and spread of disease (see section 3.3). These are all used in very small amounts and only periodically throughout a typical season. Analysis of the quantity of chemical used versus the daily discharge flows shows that most of the chemicals are so diluted as to be almost non-detectable (e.g., even using 200 lbs of sodium chloride per day [see section 3.3] would equate to an increase in TDS of about 4 mg/L for that day). The Facility's BMPs (see section 6.1) include measures designed to minimize the risk of introducing excess drugs into the system. Thus, if the Facility follows BMPs and adheres to all applicable regulations and dosage/usage requirements for drugs and chemicals, these pollutants will not cause toxicity in the Jocko River and will meet the narrative and numeric CSKT water quality standards. Monitoring for drugs and chemicals used at the Facility will not be required as there are no established or approved analytical methods for many of these compounds.

6.2.11 Whole Effluent Toxicity (WET)

The CSKT WQS include a narrative criterion, which states Tribal waters must be free from substances that may or will *create concentrations or combinations of materials that are toxic or harmful to human, animal or plant life* (CSKT WQS, Section 1.3.13(1)(d)). 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.

Discharge data from the Facility indicates that the effluent is chemically consistent, and the Facility very rarely uses small amounts of chemicals to clean equipment. These chemicals are typically not discharged from the Facility. The Facility raises trout for broodstock. Trout are in many cases the aquatic life form that water quality standards are based on. Similar to metals, it is unlikely that there are any toxics in the Facility discharge that would cause harm to sensitive aquatic species (e.g., trout). For these reasons, EPA believes the chemical-specific effluent limitations are sufficient to attain and maintain any applicable water quality criteria and prevent toxicity in the receiving water. Therefore, WET effluent limitations and monitoring will not be required. The Permit contains a reopener provision if the need for WET effluent limitations or monitoring is determined at a future date.

6.2.12 Nutrients

The CSKT have not adopted numeric nutrient criteria, but their WQS include a narrative criterion which states Tribal waters must be free from substances that may or will *create*

conditions that produce undesirable aquatic life (CSKT WQS, Section 1.3.13(1)(e)). The CSKT have not developed a numeric translator for implementing their narrative criterion at this time.

A primary driver of undesirable aquatic life is nutrient enrichment (i.e., nitrogen and phosphorus enrichment) of streams, and discharges from fish hatcheries can be high in nutrients. Additionally, an assessment of the Jocko River watershed in 2009 (CSKT, 2009)[3] noted an increase in nitrogen concentrations in the Jocko River segment containing the Facility. For these reasons, EPA considers both nitrogen and phosphorus to be pollutants of concern.

In April 2022, EPA issued a memo reiterating EPA's commitment to nutrient pollution reductions throughout the country[4]. Some of the topics discussed in the memo include "strongly encouraging states to rely on numeric targets for…NPDES permitting" and an expectation that states will "commit to use numeric targets to implement applicable narrative criteria statements." EPA is committed to partnering with Tribes to collect more comprehensive nutrient data and better define the relationship between nutrient levels and narrative criteria in Tribal waters.

As part of this effort, EPA Region 8 created a simple mixing/mass balance model using nitrogen and phosphorus data to calculate an in-stream (mixed) value, and compared that value to historical nutrient concentration ranges (EPA, 2000, Appendix B)[5]. The 'critical conditions' used in the mass balance/mixing model are median percentiles of both upstream and effluent concentrations and flows.

Results of this analysis indicated that for nitrogen, the resulting in-stream (mixed) value of 0.43 mg/L is within the interquartile range of historical nutrient concentrations of 0.20 to 0.86 mg/L for Ecoregion 15, Northern Rockies (Figure 4), suggesting there are no exceedances of the historical values and no effluent limitations for nitrogen will be established at this time. However, because this value is above the bottom of the interquartile range, EPA is recommending additional nutrient monitoring and that the facility evaluate BMPs to determine when and how the Facility is discharging nitrogen to the stream and to improve solids control, which is a potential source of nutrients.

For phosphorus, the resulting in-stream (mixed) value of 6 µg/L is below the interquartile range of historical nutrient concentrations of 8 to 43 µg/L for Ecoregion 15, Northern Rockies (Figure 4). Based on this, no effluent limitations for phosphorus will be established at this time but EPA is recommending continued monitoring.

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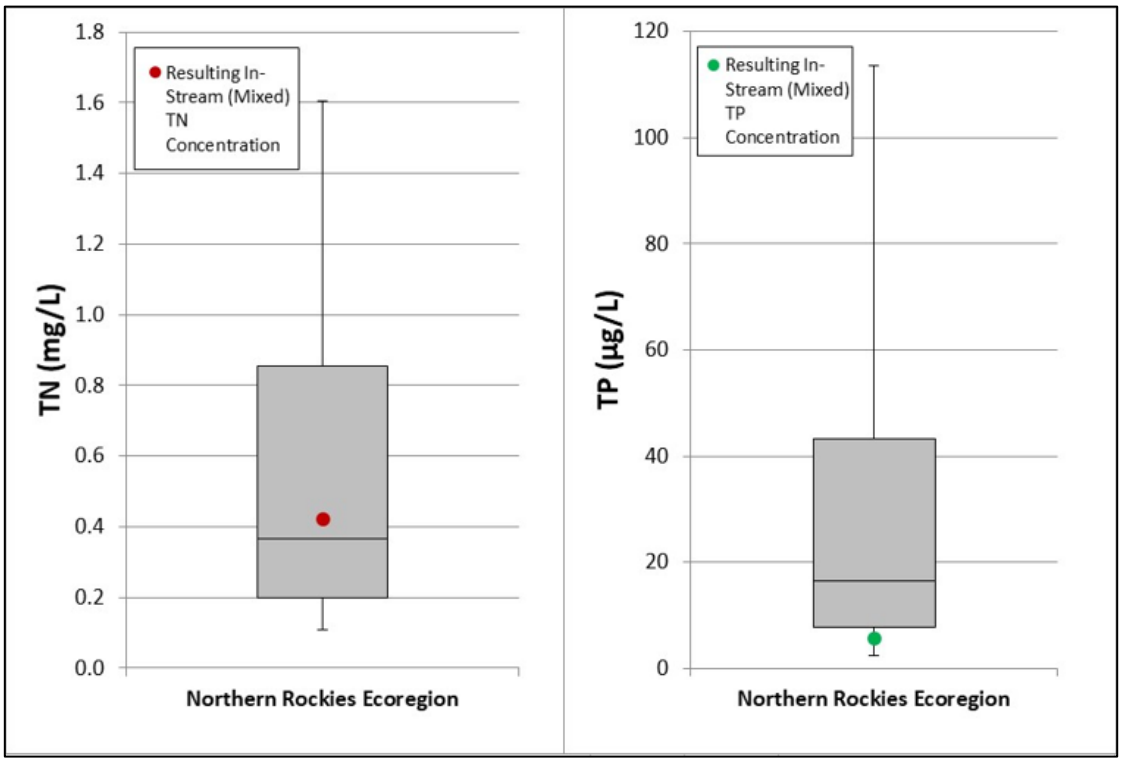
[3] Confederated Salish and Kootenai Tribes Natural Resources Department. Assessment of Water Quality Conditions in the Jocko River Watershed, Flathead Indian Reservation, Montana, March 2009.

[4] EPA, Assistant Administrator Radhika Fox to States and Tribes, April 5, 2022. Accelerating Nutrient Pollution Reductions in the Nation's Waters, EPA Office of Water, https://www.epa.gov/nutrient-policy-data/2022-epa-nutrient-reduction-memorandum

[5] EPA, Ambient Water Quality Criteria Recommendations – Information Supporting the Development of State and Tribal Nutrient Criteria – Rivers and Streams in Nutrient Ecoregion II. EPA-822-B-00-013, December 2000.

Figure 4. Resulting TN and TP Concentrations in Jocko River after mixing, compared to historical nutrient concentrations in the Northern Rockies ecoregion



Nutrient data collected by the Permittee in the receiving stream shows that the ratio of total nitrogen to total phosphorus in the stream averages around 90:1 (Table 3), and has ranged from 32:1 to 265:1. See the Self-Monitoring Discussion (section 7.1) and Special Conditions (section 8.2) for more information on nutrient monitoring requirements in the Permit.

6.2.13 Previous Discharge Prohibitions

The previous permit listed a number of discharge prohibitions as narrative conditions in section 1.3.1.2 of the previous permit (conditions 1 and 2a through 2i). EPA Region 8 typically ensures that all relevant water quality standards are considered and analyzed during permit development so that it is not necessary to simply list out all the narrative conditions in the permit. When listed out in the permit, these narrative conditions can be hard to objectively quantify. In this case, after careful analysis of all CSKT WQS, these narrative conditions are either unnecessary to protect WQS or redundant to other more specific permit conditions, and will be largely removed in the Permit. Below, each narrative permit condition is briefly listed and the reasoning behind removing it is discussed. Anti-backsliding concerns related to removal of permit limitations is further discussed in section 6.5.

1. Discharges from the hatchery must not cause or contribute to a violation of CSKT Water Quality Standards.

- During permit development, EPA analyzes the CSKT WQS and ensures that a permit as written will protect them. In this case, the permit record and fact sheet demonstrate that the hatchery will not cause or contribute to a violation of CSKT WQS. See section 6.2. This narrative condition will be removed from the Permit.

2. The hatchery must not discharge to waters of the reservation:

a. Any floating solids or visible foam in other than trace amounts on the surface of the receiving water

- This is a common narrative condition that EPA feels protects against aesthetic qualities like floating solids and visible foam that may not be protected by numeric or other controls. Therefore, this standard condition is being retained in the Permit.

b. Any hazardous materials in concentrations found to be of public health significance or to impair designated beneficial uses

- The permit record and SoB analyzed all chemicals and processes used at the Facility and determined that they will not exceed CSKT WQS. See section 6.2. The *Drug and Chemical Management* BMPs also require the Facility to only use chemicals that are acceptable for discharge to reservation waters. See section 6.1. This narrative condition will be removed from the Permit.

c. Any sludge, grit and accumulated solid residues

- The SoB has already analyzed considerations of this narrative criteria along with TSS and BOD considerations and determined that they will not exceed any CSKT WQS. See section 6.2. In addition, the standard condition in section 8.2 of the Permit requires removed substances to be buried or disposed in a manner consistent with all applicable federal, state, tribal, or local regulations. This narrative condition will be removed from the Permit.

d. Any untreated cleaning wastewater (e.g., obtained from a vacuum or standpipe bottom drain system or rearing/holding unit disinfection)

- The Facility discharges all effluent (including cleaning wastewater) from its settling (i.e., treatment) pond. There is no potential for them to discharge untreated wastewater due to this physical control. Additionally, the Permit only allows the discharge from Outfall 001, which is defined as "[e]ffluent from the hatchery operation after it leaves settling pond but before it enters Jocko River." See Table 1 of the Permit. This narrative condition will be removed from the Permit.

e. Any floating, suspended or submerged matter, including dead fish, in amounts causing nuisance or objectionable condition or that may impair designated beneficial uses in the receiving water

- The TSS controls, *Solids Control* BMPs and the remaining narrative prohibition against floating solids already protect this narrative. Fish mortalities are always collected and put in a freezer, where they are eventually given to a bird rehab facility or taken to the landfill – they are never discharged into the Jocko River. The Facility's discharge is also screened so that fish cannot physically pass either way through the discharge structure. This narrative condition will be removed from the Permit.

f. Any toxic substances, including drugs, pesticides, or other chemicals, in concentrations that impair designated uses

- The permit record and SoB analyzed all chemicals and processes used at the Facility, and determined that they will not violate CSKT WQS. See section 6.2. The *Drug and Chemical Management* BMPs also require the Facility to only use chemicals that are acceptable for discharge to reservation waters. See section 6.1. This narrative condition will be removed from the Permit.

g. Any deleterious materials in concentrations that impair designated beneficial uses.

- The permit record and SoB analyzed all chemicals and processes used at the Facility, and determined that they will not violate CSKT WQS. See section 6.2. The *Drug and Chemical Management* BMPs also require the Facility to only use chemicals that are acceptable for discharge to reservation waters. See section 6.1. This narrative condition will be removed from the Permit.

h. Any oxygen-demanding materials in concentrations that would result in an anaerobic water condition.

- The Facility's DMR data shows that it does not discharge oxygen-demanding materials in concentrations that would result in an anaerobic water condition. See the dissolved oxygen discussion in section 6.2.8. The Facility is required to monitor for dissolved oxygen in its effluent (see section 7.1.8). This narrative condition will be removed from the Permit.

i. Sanitary wastes or untreated wastewater.

- The Facility does not discharge sanitary wastes of any kind. The Facility discharges all effluent (including wastewater generated from cleaning tanks) from the settling (i.e., treatment) pond. There is no potential for them to discharge untreated wastewater due to this physical control. Additionally, the Permit only allows the discharge from Outfall 001, which is defined as "[e]ffluent from the hatchery operation after it leaves settling pond but before it

enters Jocko River." See Table 1 of the Permit. This narrative condition will be removed from the Permit.

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 4).

Table 4. 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/**
Oil and Grease, mg/L	N/A	N/A	10	TBEL/WQBEL
pH, standard units	Must remain in the range of 6.5 to 8.5 *at all times*			WQBEL
Floating solids/visible foam	Discharge of any floating solids or visible foam in other than trace amounts, or substances that cause a visible oil sheen, is prohibited.			WQBEL

a/ See section 1 of the Permit for definition of terms.
b/ WQBEL = Water quality-based effluent limit; TBEL = Technology based effluent limit

Additionally, the Facility must comply with the Best Management Plan (BMP) elements discussed in section 6.1. These will be listed out in the Special Conditions section of the Permit.

6.4 Antidegradation

CSKT WQS include antidegradation provisions (CSKT WQS, Section 1.4). All surface waters within the Flathead Reservation are subject to Tier 1 (existing use) protection. Segments may qualify for Tier 2 protection based on available information regarding the overall quality and value of the segment, and whether the existing quality is better than necessary to support fishable/swimmable uses. Based on the high quality and assimilative capacity of the receiving stream, EPA has made a preliminary determination that it qualifies for Tier 2 protection. Tier 3 (outstanding tribal resource) protection is reserved for waters of exceptional quality, or waters of ecological, recreational, or cultural significance. EPA believes this receiving stream is not subject to Tier 3 protection.

For Tier 2, if the proposed activity will not result in significant degradation for each parameter, review is terminated. This renewal is not permitting a new or expanded discharge - discharges from the Facility are existing and do not show any increasing trends in either flows or pollutant loadings. Additionally, no degradation of existing effluent quality is proposed. No exceedances of numeric or narrative criteria will be allowed in the Permit. EPA believes renewal of the Permit satisfies CSKT antidegradation requirements for both Tier 1 and Tier 2 protection. The CSKT will review this permit during the Clean Water Act Section 401

certification process and may provide feedback on EPA's antidegradation determination at that time.

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. A number of narrative permit conditions were removed in the Permit; however, the existing controls in the Permit protect against any exceedances of these narrative permit conditions, and so they were either unnecessary or redundant. A discussion of why the removal of these statements does not affect the protections provided in the Permit can be found in section 6.2.13.

7 MONITORING REQUIREMENTS

7.1 Self-Monitoring Discussion

This section lays out the basis for assigning monitoring frequencies and types to the various pollutants in the Permit. The monitoring frequency should be sufficient to characterize the effluent quality and to detect events of noncompliance, considering the need for data and, as appropriate, the potential cost to the Permittee.

7.1.1 Flow monitoring

The previous permit required the Facility to monitor effluent flow on a daily frequency using an instantaneous measurement. This frequency and sample type will be retained in the Permit. Daily flow measurements are appropriate for a high discharge volume facility such as the Facility. According to the Permittee, they observe and record the flow meter every day and average these measurements out to report their flow on a monthly basis (30-Day Average and Daily Maximum).

7.1.2 Total Suspended Solids (TSS)

The previous permit required the Facility to monitor effluent TSS on a semi-annual frequency using a composite sample. The sampling frequency will increase to quarterly, and the composite sample type will be retained in the Permit. A quarterly sampling frequency is more appropriate for a facility with a high discharge volume, and will better capture seasonal variations in the discharge. A quarterly sampling frequency is also in-line with requirements at other fish hatcheries permitted by EPA in Region 8. A composite sample is

appropriate for a holding pond with a short retention time where effluent quality could vary over the course of a day.

7.1.3 pH

The previous permit required the Facility to monitor effluent pH on a quarterly frequency using an instantaneous grab sample. A quarterly frequency and grab sample are appropriate for a holding pond at a fish hatchery. This frequency and sample type will be retained in the Permit.

The previous permit also required the Facility to monitor upstream receiving stream pH on a quarterly frequency using an instantaneous grab sample. Collection of upstream pH data allows EPA to re-assess and refine the appropriate ammonia criteria each permit term. A quarterly frequency and grab sample are appropriate for collecting receiving stream data that may vary across seasons. This frequency and sample type will be retained in the Permit.

Note that pH samples must be analyzed within 15 minutes of collection. For this reason, most facilities use an *in situ* meter, such as a calibrated pH meter, to measure it directly in the field.

7.1.4 Oil and Grease

EPA has added oil and grease effluent limitations to the Permit. EPA is requiring the Facility to monitor effluent for oil and grease on a weekly basis using a visual inspection, followed by an immediate grab sample if any oil and grease are observed. A visual inspection is part of basic operation and maintenance of a facility such as this (see section 6.2 of the Permit, which requires weekly inspections of the outfall), and a weekly visual assessment is in line with other fish hatchery permits issued by EPA in Region 8.

7.1.5 Ammonia

The previous permit required the Facility to monitor effluent ammonia on a semi-annual frequency using a composite sample. EPA is increasing the monitoring frequency to quarterly in this renewal, and retaining the composite sample type. A quarterly sampling frequency is more appropriate for a facility with a high discharge volume, and will better capture seasonal variations in the discharge. A quarterly sampling frequency is also in-line with requirements at other fish hatcheries permitted by EPA in Region 8. A composite sample is appropriate for a holding pond with a short retention time where effluent quality could vary over the course of a day.

The previous permit also required the Facility to monitor upstream receiving stream ammonia on a semi-annual frequency using a composite sample. This data demonstrated both that the upstream receiving stream contains almost no ammonia (Table 3), and that there is no reasonable potential for the Facility to cause or contribute to an ammonia exceedance in the stream (see section 6.2.6). Therefore, ammonia monitoring in the upstream receiving water will be discontinued.

7.1.6 Temperature

The previous permit did not contain any temperature monitoring requirements for the effluent. To verify the determination of "no RP", temperature monitoring of the effluent is necessary and the Permit is implementing a quarterly effluent temperature monitoring requirement. The sample type will be a grab sample. A quarterly frequency and grab sample are appropriate for a facility with a high discharge volume, and will better capture seasonal variations in the discharge.

The previous permit also required the Facility to monitor upstream receiving stream temperature on a quarterly frequency using an instantaneous grab sample. Collection of upstream temperature data allows EPA to re-assess and refine the appropriate ammonia criteria each permit term. A quarterly frequency and grab sample are appropriate for collecting receiving stream data that may vary across seasons. This frequency and sample type will be retained in the Permit.

Note that temperature samples must be analyzed within 15 minutes of collection. For this reason, most facilities use an *in situ* meter, such as a calibrated thermometer, to measure it directly in the field.

7.1.7 Nutrients

The previous permit required the Facility to monitor the effluent for nutrients (including nitrate/nitrite, total kjeldahl nitrogen, total nitrogen [calculated], and total phosphorus) semi-annually (twice during the summer months) using a composite sample. The composite sample type will be retained in the Permit and is appropriate for a holding pond with a short retention time where effluent quality could vary over the course of a day. However, the semi-annual requirement will be increased to monthly between July and September (i.e., three total samples per year). The summer season is the most likely to exhibit algal growth in the receiving stream due to warm temperatures, abundant sunlight, clear water, and shallow, slow flowing conditions. While the definition of 'summer' or times of year that characterize these conditions can vary, it is common throughout Region 8 to consider these three months as some part of the baseline summer season.

The previous permit also required the Facility to monitor upstream receiving stream nutrients on a semi-annual frequency using a grab sample. Collection of upstream nutrient data allows EPA to determine what (if any) effects the facility's discharge is having on the receiving water. The semi-annual requirement will be changed to match the effluent sampling requirements – monthly during July, August, and September. A monthly sampling frequency is appropriate for a facility with a high discharge volume and a medium priority concern regarding nitrogen impacts to the receiving stream.

7.1.8 Dissolved Oxygen (DO)

The previous permit required the Facility to monitor for dissolved oxygen in both the effluent and the upstream receiving water on a semi-annual frequency using a grab sample. Monitoring data indicates that both the effluent and receiving water maintain high DO levels (Tables 2 and 3). Because DO is a good trouble-shooting indicator of other issues involving

nutrients and BOD, EPA will continue to require DO sampling of the effluent. EPA will no longer require DO monitoring of the upstream receiving water. EPA is increasing the monitoring frequency of the effluent to quarterly in this renewal, and retaining the grab sample type. A quarterly sampling frequency is appropriate for a facility with a high discharge volume, and will better capture seasonal variations in the discharge. A quarterly sampling frequency is also in-line with requirements at other fish hatcheries permitted by EPA in Region 8. Note that dissolved oxygen samples must be analyzed within 15 minutes of collection. For this reason, most facilities use an *in situ* meter to measure it directly in the field.

7.2 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. This section includes monitoring requirements for both the effluent (Table 5) and the receiving water (Table 6).

Table 5. Monitoring requirements for Outfall 001

Effluent Characteristic	**Monitoring Frequency**	**Samples Type a/**	**Data Reported on DMR b/**
Flow, mgd c/	Daily	Grab	Daily Max. 30-Day Avg.
TSS, mg/L	Quarterly	Composite	Daily Max. 30-Day Avg.
Dissolved Oxygen, mg/L	Quarterly	Grab d/	Daily Min. 30-Day Avg.
Temperature, °C	Quarterly	Grab d/	Daily Max. 30-Day Avg.
pH, standard units	Quarterly	Grab d/	Min. Max.
Oil and Grease, visual	Weekly	Visual	Narrative
Oil and Grease, mg/L	Immediately if visual sheen is detected e/	Grab	Daily Max.
Total Ammonia Nitrogen (as N), mg/L	Quarterly	Composite	Daily Max. 30-Day Avg.
Total Kjeldahl Nitrogen (TKN) (as N), mg/L	Monthly f/	Composite	Daily Max. 30-Day Avg.
Nitrate+Nitrite (as N), mg/L	Monthly f/	Composite	Daily Max. 30-Day Avg.
Total Nitrogen, mg/L	Monthly f/	Calculated g/	Daily Max. 30-Day Avg.
Total Phosphorus, mg/L	Monthly f/	Composite	Daily Max. 30-Day Avg.

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

b/ Refer to the Permit for requirements regarding how to report date on the DMR.
c/ Flow measurements of effluent volume shall be made in such a manner that the Permittee can affirmatively demonstrate that representative values are being obtained. The average flow rate in million gallons per day (mgd) during the reporting period and the maximum flow rate observed, in mgd, shall be reported.
d/ This sample must be analyzed within 15 minutes of collection per 40 CFR Part 136. Typically, these samples are measured *in situ* using a meter that records an instantaneous measurement.
e/ If a visible sheen or floating oil is observed in the discharge, a grab sample shall be taken immediately, analyzed and recorded in accordance with the requirements of 40 CFR Part 136. The concentration of oil and grease shall not exceed 10 mg/L in any sample.
f/ Sampling is only required during the summer months of July, August, and September (i.e., three samples per year).
g/ For the purposes of this Permit, the term "Total Nitrogen (TN)" is defined as the calculated sum of analytical results from "Total Kjeldahl Nitrogen (TKN)" plus "Nitrate+Nitrite."

Table 6. Monitoring requirements for Outfall 001U (Upstream Location on Jocko River)

Upstream Characteristic	Monitoring Frequency	Samples Type a/	Data Reported on DMR b/
Temperature, °C	Quarterly c/	Grab d/	Daily Max. 30-Day Avg.
pH, standard units	Quarterly c/	Grab d/	Min. Max.
Total Kjeldahl Nitrogen (TKN) (as N), mg/L	Monthly e/	Grab	Daily Max. 30-Day Avg.
Nitrate+Nitrite (as N), mg/L	Monthly e/	Grab	Daily Max. 30-Day Avg.
Total Nitrogen, mg/L	Monthly e/	Calculated f/	Daily Max. 30-Day Avg.
Total Phosphorus, mg/L	Monthly e/	Grab	Daily Max. 30-Day Avg.

a/ See section 1 of the Permit for definition of terms.
b/ Refer to the Permit for requirements regarding how to report data on the DMR.
c/ Receiving water temperature and pH at Outfall 001U must be taken on the same day and as close in time as feasible with the effluent ammonia, pH, and temperature samples at Outfall 001 (Table 5).
d/ This sample must be analyzed within 15 minutes of collection per 40 CFR Part 136. Typically, these samples are measured *in situ* using a meter that records an instantaneous measurement.
e/ Sampling is only required during the summer months of July, August, and September (i.e., three samples per year).
f/ For the purposes of this Permit, the term "Total Nitrogen (TN)" is defined as the calculated sum of analytical results from "Total Kjeldahl Nitrogen (TKN)" plus "Nitrate+Nitrite."

8 SPECIAL CONDITIONS

The Permit contains requirements for the Permittee to perform an additional monitoring study, as well as implement several BMPs. Additional monitoring requirements (beyond those required under the effluent limitations section of the Permit) and special studies are useful for collecting data that can be used to supplement numeric effluent limitations or support future permit development activities. Additional BMPs are useful to both implement the effluent limitation guidelines, and provide additional controls on the discharge of pollutants or monitoring and reporting accuracy.

8.1 Best Management Practices for the Jocko River Fish Hatchery

The BMPs discussed in section 6.1 will be implemented as a special condition in section 5 of the Permit.

8.2 Nitrogen Source Identification Study

The additional monitoring study is a nitrogen source identification study. As identified in section 6.2.12, nitrogen has been identified as a medium priority pollutant. Based on rough loading calculations, the Facility effectively doubles the nitrogen load (not the nitrogen concentration) in the Jocko River – the Facility averages around 65 pounds per day of nitrogen discharge, while using in-stream summer nitrogen measurements and typical summer flow values in the Jocko River calculates approximately 65 pounds per day of nitrogen in the Jocko River upstream of the Facility.

EPA and the CSKT are in the process of determining how to better address the Tribe's narrative criteria. To better evaluate options and potential permitting flexibilities, it is important to better understand the sources of nitrogen at the Facility. The Facility's source water is spring water (groundwater) from a heavily agriculturalized area. The Facility raises fish which contribute to nitrogen effluent concentrations through excess feed and excreta. And the Facility has a large settling pond which is inhabited by beavers and geese throughout much of the year and may be an additional source of nitrogen. Having a better understanding of the source fractions of nitrogen in the discharge will help the Facility better evaluate options for potentially reducing their nitrogen load, and also allow EPA and the CSKT to better evaluate options for future permit controls. EPA may discontinue this study in the next permit cycle.

The study's goal is to identify nitrogen contributions during the summer months when narrative criteria are most likely to be exceeded (see section 6.2.12). A small number of samples spread across the Permit term should suffice to adequately identify nitrogen sources during the summer months. Therefore, an annual sampling frequency is appropriate for this study. This study will require a grab sample type for all parameters.

The Permittee must develop and implement a nitrogen source identification study. To do this, the following specific steps are required:

1) The Permittee must establish monitoring locations for the sampling of the source spring water (IM01), and the combined effluent from the raceways and tanks prior to

entering the settling pond (IM02). Monitoring locations must be located to obtain a representative sample of the effluent as described in Table 1. EPA has provided an initial description and approximate latitude/longitude for each of these two locations in Table 1. Within 30 days of the effective date of the Permit, the Permittee must verify that the information provided by EPA for IM01 and IM02 in Table 1 is accurate and that these represent feasible sampling locations, or discuss alternative options. The Permittee can reach out to the permit writer listed in the notification letter, or write to EPA at the address in section 9.12 of the Permit.

2) The Permittee must perform an annual monitoring event of multiple forms of nitrogen – total kjeldahl nitrogen and nitrate-nitrite – at each of these two locations (Table 7) during the month of August. The annual monitoring shall occur at or near the same time as the August effluent nitrogen sampling at Outfall 001 (Table 5) so that additional comparisons can be made.
3) All monitoring results shall be recorded in a log devoted to this particular study. The log shall record the monitoring records required by section 7.8 of the Permit and any weather/field conditions that may have affected sampling, as well as any other pertinent information. Any operational changes, alterations, events, or construction at the Facility that occurred during that year and to which areas they occurred shall also be recorded. The Permittee must maintain this log at the Facility, and the log must be made available to EPA upon request.
4) The Permittee shall submit the required monitoring data each year on a DMR due on October 28. A separate DMR will be established for each monitoring point in this nitrogen source identification study. Additionally, the Permittee will calculate total nitrogen (as the sum of nitrate-nitrite plus total kjeldahl nitrogen) and report this along with the monitoring data (Table 7).
5) The Permittee shall submit a report each year as an attachment to the DMR due on October 28 summarizing the results from this study, including the date and time that the samples were collected, identifying any changes to system operation that occurred during the year, and discussing conclusions about nitrogen sourcing based on the results of the study. The report should also include the effluent nitrogen sampling event as part of the comparison.

Table 7. Internal Monitoring requirements at IM01 and IM02

Internal Monitoring Characteristic	Monitoring Locations	Monitoring Frequency	Sample Type a/	Data Reported on DMR b/
Total Kjeldahl Nitrogen (TKN) (as N), mg/L	IM01, IM02	Annually c/	Grab	Daily Max. 30-Day Avg.
Nitrate+Nitrite (as N), mg/L	IM01, IM02	Annually c/	Grab	Daily Max. 30-Day Avg.
Total Nitrogen, mg/L	IM01, IM02	Annually	Calculated d/	Daily Max. 30-Day Avg.

a/ See section 1 of the Permit for definition of terms.
b/ Refer to the Permit for requirements regarding how to report data on the DMR.
c/ Samples at IM01 and IM02 must be taken on the same day and as close in time as feasible with the August effluent Nitrate+Nitrite and Total Kjeldahl Nitrogen samples at Outfall 001 (see Table 5).

d/ For the purposes of this Permit, the term "Total Nitrogen (TN)" is defined as the calculated sum of analytical results from "Total Kjeldahl Nitrogen (TKN)" plus "Nitrate+Nitrite."

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 quarterly was chosen, because the Facility discharges continuously and has a large flow volume, and most of the Facility's monitoring requirements are quarterly.

10 COMPLIANCE RESPONSIBILITIES AND GENERAL REQUIREMENTS

10.1 Inspection Requirements

On a weekly basis, unless otherwise modified in writing by EPA, the Permittee shall inspect its facility. The Permittee shall document the inspection, as required by the Permit. Inspections are required to ensure proper O&M in accordance with 40 CFR 122.41(e). This requirement has been established in section 6.2 of the Permit.

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 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, 2022 to determine federally-listed

Endangered, Threatened, Proposed and Candidate Species for the area near the Facility. The IPaC Trust Resource Report findings are provided below (Table 8). The designated area utilized was identified in the IPaC search and covers the entire Facility and the Jocko River and riparian areas downstream from the Facility's discharge to its confluence with the Flathead River (approximate action area 15 square miles).

Table 8. IPaC Federally listed Threatened and Endangered Species

Species	Scientific Name	Species Status	Designated Critical Habitat (CH)
Canada Lynx	*Lynx canadensis*	Threatened	Action area does not overlap known CH
Grizzly Bear	*Ursus arctos horribilis*	Threatened	Action area does not overlap known CH
North American Wolverine	*Gulo luscus*	Proposed Threatened	Action area does not overlap known CH
Yellow-billed Cuckoo	*Coccyzus americanus*	Threatened	Action area does not overlap known CH
Bull Trout	*Salvelinus confluentus*	Threatened	Action area overlaps known CH
Spalding's Catchfly	*Silene spaldingii*	Threatened	Action area does not overlap known CH
Monarch Butterfly	*Danaus plexippus*	Candidate	Not applicable

11.1 Biological Evaluation

The proposed action is renewal of an existing discharge permit at a fish hatchery. The listed species have not changed since the last permit renewal (although a 'proposed threatened' and 'candidate' species have been included in this analysis), when the FWS concurred that this action was *not likely to adversely affect* the listed species. This renewal does not allow for any increases in volumetric discharges or pollutant loads, and effluent limitations are protective of water quality. Furthermore, IPaC determined that with the exception of bull trout, there was no other critical habitat in the action area. A brief biological evaluation for each species listed in Table 8 is provided below.

Canada lynx, *Lynx canadensis* – This species inhabits subalpine forests of the western United States, specifically locations that receive deep snow and have high populations of snowshoe hares, which are their principal prey. The action area for the proposed action comprises mainly lower elevation riparian area, and is likely not primary habitat for this species. Regardless of whether Canada lynx are found in this area, the permit reissuance will not authorize new ground disturbance or substantial changes in flows or pollutant loadings, and permit limits are protective of all water quality standards. Therefore, EPA finds that this proposed permit action is *not likely to adversely affect* this species.

Grizzly bear, *Ursus arctos horribilis* – This species can be found throughout the Northern Continental Divide ecosystem of Montana, although they typically avoid areas with human population. The action area for the proposed action comprises mainly lower elevation riparian

area, and is likely not primary habitat for this species. Regardless of whether grizzly bear are found in this area, the permit reissuance will not authorize new ground disturbance or substantial changes in flows or pollutant loadings, and permit limits are protective of all water quality standards. Therefore, EPA finds that this proposed permit action is *not likely to adversely affect* this species.

North American wolverine, *Gulo luscus* – This species can be found throughout the Northern Continental Divide ecosystem of Montana, although they are typically found in remote reaches of alpine forests and tundra and tend to avoid areas with human population. The action area for the proposed action comprises mainly lower elevation riparian area, and is likely not primary habitat for this species. Regardless of whether wolverine are found in this area, the permit reissuance will not authorize new ground disturbance or substantial changes in flows or pollutant loadings, and permit limits are protective of all water quality standards. Therefore, EPA finds that this proposed permit action is *not likely to adversely affect* this species.

Yellow-billed cuckoo, *Coccyzus americanus* – This species inhabits wooded areas with dense cover and water nearby, including woodlands with low, scrubby vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes. It is possible that this species is found in the action area. However, the permit reissuance will not authorize new ground disturbance or substantial changes in flows or pollutant loadings, and permit limits are protective of all water quality standards. Therefore, EPA finds that this proposed permit action is *not likely to adversely affect* this species.

Spalding's Catchfly, *Silene spaldingii* – Spalding's catchfly is an herbaceous perennial that is found primarily in grasslands and sagebrush-steppe, and occasionally in open-canopy pine stands. Based on the preferred habitat for this species, it is unlikely to be found in the action area (which is the Jocko River and riparian areas along the Jocko River). Regardless of whether this species is found in the action area, the permit reissuance will not authorize new ground disturbance or substantial changes in flows or pollutant loadings, and permit limits are protective of all water quality standards. Therefore, EPA finds that this proposed permit action is *not likely to adversely affect* this species.

Bull Trout, *Salvelinus confluentus* – This species is listed as threatened, and the action area for this permit includes critical habitat for this species. The entire Jocko River is listed as critical habitat for this species. It is likely that this species is found in the action area. However, the permit reissuance will not authorize new ground disturbance or substantial changes in flows or pollutant loadings, and permit limits are protective of all water quality standards. The Facility discharges spring water that is relatively low in temperature year-round and the Facility does not have a significant consumptive use of water. Therefore, EPA finds that this proposed permit action is *not likely to adversely affect* this species.

Monarch butterfly, *Danaus plexippus* – This species is currently listed as a candidate species. There are generally no section 7 requirements for candidate species. However, EPA believes permit reissuance will have minimal impact on this species for the same reasons provided for other species above.

Based on the IPaC information, EPA determined the permitting action *may affect, but is not likely to adversely affect* one or more of the species listed above. A copy of the draft Permit and this Statement of Basis was sent to the FWS requesting concurrence with EPA's finding that reissuance of this NPDES Permit "may affect, but is not likely to adversely affect" the species listed as threatened or endangered in the action area, or their critical habitat.

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 CSKT are 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 Erik Makus, U.S. EPA, (406) 457-5017, December 2022

ADDENDUM

AGENCY CONSULTATIONS

On March 28, 2023, the FWS concurred with EPA's preliminary conclusion that the Permit reissuance is not likely to adversely affect listed species.

The CSKT's Tribal Historic Preservation Office was notified during public notice, but did not comment on EPA's preliminary determination that the Permit reissuance will not impact any historic properties.

On March 20, 2023, EPA sent a sent a CWA Section 401 certification request to the CSKT. On April 11, 2023, the CSKT certified without Section 401 requirements.

PUBLIC NOTICE AND RESPONSE TO COMMENTS

The Permit and statement of basis were public noticed on EPA's website and in the *Missoulian* on March 19, 2023. Public comment was open for a period of 30 days. No comments were received.