UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 WYNKOOP STREET
DENVER, COLORADO 80202
http://www.epa.gov/region8

STATEMENT OF BASIS

PERMITTEE:	Montana Department of Fish, Wildlife, and Parks Jocko River Trout Hatchery Flathead Reservation
CONTACT:	George Kirsch, Manager 206 Hatchery Lane Arlee, MT 59821 (406)726-3344
PERMIT NUMBER:	MT0030546
RECEIVING WATERS:	Jocko River
LOCATION:	T16N, R20W, Section 12 47°10'8"N, 114°04'56"W

A. Permit Status

The current National Pollutant Discharge Elimination System (NPDES) permit for the Jocko River Trout Hatchery (Hatchery) became effective on February 1, 2005 and expired on December 31, 2009. In April, 2009, the Montana Department of Fish, Wildlife, and Parks (DFWP) submitted an application for renewal. The 2005 issued permit has been administratively extended until the permit is renewed.

B. Facility Description

The Hatchery is located on the Jocko River on the Flathead Reservation in northwestern Montana near Arlee, Montana. The Hatchery is operated by the Montana DFWP for the purpose of raising Arlee rainbow trout broodstock for egg production. The eggs are provided to other DFWP hatcheries, and the trout are distributed to Montana waters. The Hatchery consists of ten indoor tanks for cultivation of trout eggs and fifteen outdoor raceways.

Source water for the Hatchery is an underground spring. The indoor raceways are cleaned once per day by lowering the water level in the raceway and using a push broom to push the detritus out. The raceways drain to a floor drain. The outdoor raceways are cleaned three times a week using a push broom. After fish have been removed from a raceway, the raceway is power sprayed with water. Flow from all of the raceways is collected at a sump where sand settles out. The sump is cleaned out once per year. Wastewater from the sump flows into a settling pond which discharges to the Jocko River.

C. Discharge Data

Table 1: Discharge Data, 2005-2009

Parameter	30-Day Average	Daily Maximum	2005 Permit Limit
Flow, million gallons per day	5.1	6.7	--
Total Suspended Solids, lbs/day	30	40	73/109[(1)]
Total Residual Chlorine, mg/L	--	Not detected	0.10[(2)]
Oil and Grease, mg/L	--	Not detected	10[(2)]

[(1)] 30 Day Average/Daily Maximum
[(2)] Daily Maximum

D. Feed Use

The 2005 permit required yearly reporting of the total and daily average feed use. Table 2 shows the feed usage at the Hatchery over the last five years.

Table 2: Feed Usage 2005-2009

Time Period	Total Feed (lbs)	Daily Average (lbs)
7/1/04-6/30/05	38,589	106
7/1/05-6/30/06	48,876	134
7/1/06-6/30/07	42,111	115
7/1/07-6/30/08	43,322	119
7/1/08-6/30/09	44,437	122
Average	43,467	119

E. Compliance

A review of the Discharge Monitoring Reports (DMRs) submitted since 2005 showed one violation of the Total Suspended Solids Limit (TSS) limitation for the sampling period of January 1, 2009 through March 31, 2009. The thirty day average was 92 lbs/day (limitation is 73 pounds per day).

EPA conducted an inspection at the Hatchery in August 2006. Several items were noted which needed corrective action, including personnel not being able to locate all records and storage of chemicals near floor drains. Following the inspection, the Hatchery corrected these items.

F. Technology Based Effluent Limitations

BMP Plan

40 CFR Part 451 establishes effluent limitations for the Concentrated Aquatic Animal Production Point Source Category. 40 CFR Part 451 applies only to discharges from facilities that produce 100,000 pounds or more or aquatic animals per year in a flow-through, recirculating, net pen or submerged cage system. The Hatchery produces approximately 34,000 pounds per year in a flow through system.

Permittees subject to 40 CFR Part 451 are required to develop a Best Management Practices (BMP) plan addressing how the permittee will meet the following requirements:

1. Solids Control. The permittee must:

    a. Employee 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.
    b. In order to minimize the discharge of accumulated solids from settling ponds and basins and production systems, identify and implement procedures to minimize any discharge of accumulated solids during the inventorying, grading, and harvesting aquatic animals in the production system.
    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.
    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. 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.

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

5. Training. The permitte must:

    a. 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.

    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.

During the comment period on a draft of the 2005 permit, the Confederated Salish and Kootenai Tribes requested that monitoring requirements be added for antibiotics and chemicals. However there are no established or approved analytical methods for these compounds. Although the maximum yearly production of the Hatchery is less than 100,000 lbs/year, EPA will use Best Professional Judgment (BPJ) to require the permittee to develop a BMP Plan that addresses the above five items to satisfy the concerns of the Tribes and to make the permit requirements implementable by the permittee. The 2005 permit included a requirement to develop a BMP plan, and this permit will maintain that requirement.

TSS

The limits for TSS are based on Region 8 professional judgment dating to the 1970's. TSS waste production resulting from feed was found to be 75% of the food weight (step 1). Conventional treatment removes and average 20% of the TSS, leaving 80% as a discharge allowance (step 2). EPA used a long-term high average feed rate for the calculation of an appropriate mass limit.

Step 1) 119 lbs food/day x 0.75 TSS production = 89.3 lbs/day TSS produced from feed

Step 2) 89.3 lbs TSS/day x 0.80 TSS uncontrolled = 71.4 lbs/day discharge allowance
= **71.0 lbs/day 30-day discharge limit**

The daily maximum limit historically has been 1.5 times the 30-day average or, in this case, 106 lbs/day.

Table 4. Technology Based Effluent Limitations		
Effluent Characteristic	**30-Day Average Limitation**	**Daily Maximum Limitation**
Total Suspended Solids, lbs/day	71.0	106.0

In addition to the numeric technology based effluent limitations in Table 4, a BMP Plan will be required.

G. Water Quality Based Effluent Limitations

The Jocko River is designated B-1 by the Tribal Water Quality Standards. B-1 waters are to be suitable for drinking, culinary and food processing purposes after conventional treatment; bathing, swimming and recreation; growth and propagation of salmonid fishes and associated aquatic life; waterfowl and furbearers; and agricultural and industrial water supply.

The following mass balance equation is used to determine the reasonable potential for a pollutant present in the effluent to cause an exceedance of water quality standards in the receiving stream

$Q_dC_d + Q_sC_s = Q_rC_r$

Where:

Q_d = Discharge flow
C_d = Discharge concentration
Q_s = Upstream river flow available for dilution
C_s = Upstream concentration
Q_r = Downstream flow
C_r = Downstream concentration

Ammonia

The permittee collected five quarterly discharge samples for ammonia nitrogen. The concentrations in the discharge ranged from 0.09 mg/L to 0.9 mg/L ammonia nitrogen. The United States Geological Survey (USGS) maintains two gauging stations on the Jocko River. The gauge upstream of the Hatchery is located on one of the three forks of the Jocko River, and the other station is located a considerable distance downstream after numerous side streams have entered the river. However neither station is representative of the flow in the vicinity of the discharge.

The Tribes have collected flow data at various sampling stations as part of their assessment of Water Quality conditions in the Jocko River watershed (CSKT, 2009). One of the

stations sampled is upstream of the Hatchery below where the major forks of the river join. There is insufficient data to calculate a 7Q10 or a 1Q10. The minimum flow reported at this station, 13.6 cfs, will be used. Ammonia nitrogen at this station was measured as less than 0.01 mg/L.

The mass balance equation may be rearranged to calculate the concentration of a pollutant in the receiving body downstream of the discharge:

$$C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$$

C_r may then be compared to the applicable water quality standard to determine if a permit limitation is needed.

Using highest discharge (6.7 mgd or 10.4 cfs), highest concentration of ammonia in the discharge (0.9 mg/L), the lowest flow reported (13.6 cfs) and no background ammonia N, the above equation yields a C_r of 0.69 mg/L. Using 90 percentile of pH (8.0) and 75th percentile of temperature (4.56), applicable ammonia standards are: acute (salmonids present) = 5.62 mg/l and chronic (early life stages present) = 2.43 mg/L. The predicted concentration of ammonia downstream, 0.69 mg/L, does not exceed either standard. There will be no ammonia limits in this permit.

Oil and Grease

The limitation for oil and grease is based on tribal narrative water quality standards. The standard for B-1 waterbodies state that no increases are allowed above natural concentrations of oils that create or are likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, welfare, livestock, fish, or other wildlife. Based on best professional judgment, the daily maximum limit for oil and grease will be set at 10 mg/L.

pH

The limitation for pH is based on tribal water quality standards. The standards for B-1 waterbodies state that variation of hydrogen ion concentration must be within the range of 6.5 to 8.5 and that a discharge shall not cause the receiving water to change more than 0.5 pH units. The water quality standard forms the basis of the pH limitation of no less than 6.5 and no greater than 8.5.

Residual Chlorine

Clorox is occasionally used as a disinfectant. Prior to use, it is held in an open container for twenty four hours. Breakdown products include chlorine. To protect aquatic life, a limitation for chlorine has been included in the permit. The limitation for residual chlorine is based on the acute numeric tribal water quality standards of 19 µg/L. 19 µg/L is below the detection limit of two commonly used analytical methods of residual chlorine. EPA method 330.1 has a detection limit of 50 µg/L but is a laboratory method. EPA method 330.5 has a detection limit of 100 µg/L and is available for field use. Since residual chlorine must be measured within 15 minutes of

collection to obtain accurate results, the field method must be used. EPA is setting the residual chlorine limit of 19 µg/L. Any residual chlorine measured at less than the detection limit of 100 µg/L will be considered in compliance with the limitation.

H. Final Permit Limitations

Table 5: Final Permit Limitations

Effluent Characteristic	Effluent Limitation	
	30-Day Average	Daily Maximum
Total Suspended Solids, lbs/day	71	106
Total Residual Chlorine, µg/L	NA	19
Oil and Grease, mg/L	NA	10
The pH of the discharge shall not be less than 6.5 or greater than 8.5 at any time.		

I. Self-Monitoring Requirements

Outfall 001 shall be sampled at the point of discharge from the settling pond. Quarterly self-monitoring reports must be postmarked by the 28th day of the month following the end of the calendar quarter by July 28, October 18, January 28, and April 28.

Table 5: Self-Monitoring Requirements		
Effluent Characteristic	**Frequency**	**Sample Type [1]**
Flow, million gallons per day	Daily	Instantaneous
Feed, lbs/day	Daily[2]	
Total Suspended Solids, mg/L influent	Quarterly	Composite[3]
Total Suspended Solids, mg/L effluent	Quarterly, During raceway cleaning event	Composite[3]
pH	Quarterly, During raceway cleaning event	Grab[4]
Oil and Grease, visual	Daily	Visual[5]
Total Residual Chlorine, mg/L	Quarterly, During Raceway cleaning event,	Grab[4]
Total Suspended Solids, lbs/day	Quarterly, during raceway cleaning event	Calculated [6]

[1]See definitions in permit

[2] Data on the total, hatchery-wide feed rate shall be kept daily (lbs/day) and shall be reported once each year by July 28.

[3] Composite samples shall be composed of four equal aliquots collected at evenly spaced times during the raceway cleaning event.

[4] Analyses of pH and TRC samples must be performed within 15 minutes of sample collection

[5]A daily visual observation is required. If a visible sheen is detected, a grab sample shall be taken and analyzed immediately.

[6]Total Suspended Solids (TSS) (lbs/day) shall be calculated as follows for comparison with the discharge limit:

Lbs/day of TSS = TSS concentration (mg/L) x Flow x 8.34

J. Endangered Species Act (ESA) Requirements

Section 7(a) of the Endangered Species Act requires federal agencies to insure that any actions authorized, funded, or carried out by an Agency are not likely to jeopardize the continued existence of any federally-listed endangered or threatened species or adversely modify or destroy critical habitat of such species.

According to the U.S. Fish and Wildlife Service, Montana Field Office, internet site at http://www.fws.gov/mountain-prairie/mt.html, Table 6 lists the federally listed threatened, endangered and candidate species and proposed and designated critical habitat found on the Flathead Reservation in Montana.

Table 6. Threatened, Endangered, and Candidate Species on the Flathead Reservation

Common Name	Scientific Name	Status	Habitat
Bull Trout	*Salvelinus confluentus*	Threatened; Proposed Critical habitat	Clark Fork, Flathead, Kootenai, St. Mary, and Belly river basins; cold water rivers and lakes.
Grizzly Bear	*Ursus arctos horribilis*	Threatened	Resident, transient; Alpine/subalpine coniferous forest
Canada Lynx	*Lynx canadensis*	Threatened	Resident: western Montana – Montana spruce/fir forest
Spalding's ' Campion (or "catchfly")	*Silence spaldingii*	Threatened	Upper Flathead River Fisher River drainages; Tobacco Valley – open grasslands with rough fescue or bluebunch wheat grass
Water Howellia	*Howellia aquatilis*	Threatened	Wetlands; Swan Valley, Lake and Missoua Counties

EPA finds this permit is Not Likely to Adversely Affect any of the species listed by the US Fish and Wildlife Service under the Endangered Species Act. This facility discharges to the Jocko River. There is one listed aquatic species, the bull trout. The renewal of this permit does not allow any increase in effluent limitations over the previous permit.

K. National Historic Preservation Act (NHPS) 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. EPA has evaluated its planned reissuance of the NPDES permit for the Jocko Trout Hatchery to assess this action's potential effects on any listed /eligible historic properties or cultural resources. EPA does not anticipate any impacts on listed/eligible historic properties or cultural

resources because this permit is a renewal and will not be associated with any new ground disturbance or changes to the volume or point of discharge

J. Total Maximum Daily Load

On June 21, 2000 and September 21, 2000, U.S. District Judge Donald W. Molloy issued orders stating that until all necessary total maximum daily loads (TMDLs) under Section 303(d) of the Clean Water Act are established for a particular water quality limited segment, the EPA is prohibited from issuing new permits or from increasing already permitted discharges under the NPDES program. (Friends of the Wild Swan, et al., v. U.S. EPA, CV 97-35-M-DWM, District of Montana, Missoula Division.).

EPA finds that the issuance of this permit does not conflict with the order because the receiving water is in Indian Country and is not on an approved list of waters requiring TMDLs under Section 303(d) of the Clean Water Act.

Prepared by Rosemary Rowe
June 9, 2010