FACT SHEET

NPDES Permit Number: WA-000190-2
Date: June 29, 2006
Public Comment Period Expiration Date: July 31, 2006
Technical Contact: David Ragsdale

The U.S. Environmental Protection Agency (EPA) Proposes to Issue a National Pollutant Discharge Elimination System (NPDES) Permit to:

United States Fish and Wildlife Service
Leavenworth National Fish Hatchery
12790 Fish Hatchery Road
Leavenworth, Washington 98826

NPDES Permit Issuance

EPA proposes to issue a NPDES permit to the Leavenworth National Fish Hatchery (Hatchery) in Leavenworth, Washington. The Hatchery is owned and operated by the United States Fish and Wildlife Service (USFWS). The draft permit places conditions on the discharge of pollutants from the Hatchery to Icicle Creek pursuant to the provisions of the Clean Water Act, 33 U.S.C. § 1251 *et seq.*

This fact sheet includes:

- information on public comment, public hearing and appeal procedures;
- the description of current discharges;
- a listing of tentative effluent limitations and other conditions; and
- detailed technical material supporting the conditions in the draft permit.

State of Washington Certification.

After completion of the public comment period EPA will request that the Washington State Department of Ecology (Ecology) certify the final NPDES permit pursuant to Section 401 of the Clean Water Act, 33 U.S.C. § 1341. EPA may not issue the NPDES permit until the state has granted, denied or waived certification.

Public Comment

Persons wishing to comment on or request a public hearing for the draft permit may do so in writing by the expiration date of the Public Notice. EPA will consider all comments before issuing the final permit. Comments should include a name, address, phone number, and a concise statement of the basis of the comment, as well as relevant facts upon which the comment is based. All written comments should be addressed to the Director of the Office of Water and Watersheds and can be submitted by mail to U.S. EPA, Region 10, 1200 Sixth Avenue (OWW-130), Seattle, WA 98101; alternatively, comments can also be submitted by facsimile at (206) 553-0165; or submitted via e-mail to www.ragsdale.dave@epa.gov.

Requests for Public Hearing

Persons wishing to request a public hearing must do so, in writing, by the expiration date of this public notice. A request for a public hearing must state the nature of the issues to be raised as they relate to the permit, as well as the requester's name, address, and telephone number. Based on the requirements of 40 CFR § 124.12, EPA will hold a public hearing if there is a significant degree of public interest in the proposed permit. All comments and requests for public hearing must be submitted to EPA as described in the "Public Comments" section of the attached public notice.

After the public comment period expires and all significant comments have been considered, EPA's Director of the Office of Water and Watersheds will make a final decision regarding permit issuance. If no comments requesting a change in the draft permit are received, the tentative conditions in the draft permit become final, and the permit will become effective upon issuance. If comments are submitted, EPA will prepare a response to comments and if necessary will make changes to the draft permit. After making any necessary changes, EPA will issue the permit with a response to comments, unless issuance of a new draft permit is warranted pursuant to 40 CFR § 122.14. The permit will become effective thirty-three (33) days after the issuance date, unless the permit is appealed to the Environmental Appeals Board within 30 days pursuant to 40 CFR § 124.19.

Documents Are Available for Review

The draft NPDES permit and related documents can be reviewed or obtained by contacting EPA's Regional Office in Seattle between 8:30 a.m. and 4:00 p.m., Monday through Friday (see address below). The draft permit, fact sheet and public notice can also be found at the Region 10 website at http://yosemite.epa.gov/r10/water.nsf/NPDES+Permits/DraftPermitsORWA. Reference materials cited in the fact sheet are available in electronic format or in hard copy. To request copies and other information, please contact the NPDES Permits Unit at:

United States Environmental Protection Agency, Region 10
1200 Sixth Avenue, OWW-130
Seattle, Washington 98101
(206) 553-0523 or

1-800-484-4372 (within Alaska, Idaho, Oregon and Washington)

The draft permit and fact sheet are also available at:

EPA Washington Operations Office
300 Desmond Drive, S.E.
Olympia, Washington 98504-7600

Table of Contents

I. Background
- A. Applicant
- B. Permit History
- C. Description of Facility Operation and Associated Discharges

II. OUTFALL LOCATIONS
- A. Rearing Pond and Raceway Discharges (Outfalls 001 and 004)
- B. Offline Settling Basin Discharge or Pollution Abatement Pond (Outfall 002)
- C. Fish Screen Return Water (Outfall 003)

III. RECEIVING WATER
- A. Receiving Water
- B. Receiving Water Quality Standards
- C. Pollutants of Concern
- D. Disease Control Chemicals

IV. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
- A. Legal Basis
- B. Technology Based-Effluent Limitations and Permit Requirements
- C. Water Quality-Based Effluent Limitations and Permit Requirements
- D. Standard Permit Conditions

V. Other legal Requirements
- A. Endangered Species Act
- B. State Certification

I. BACKGROUND

A. Applicant

United States Fish and Wildlife Service (USFWS)
Leavenworth National Fish Hatchery
NPDES Permit No.: WA-000190-2
Contact Person: Travis Collier, Acting Hatchery Manager

Facility Mailing Address:

12790 Fish Hatchery Road
Leavenworth, Washington 98826

B. Permit History

The State of Washington Department of Ecology (Ecology) has been delegated partial authority to issue National Pollutant Discharge Elimination System (NPDES) permits in the State of Washington. Ecology, however, has not been delegated the authority to regulate discharges from federal facilities, such as the Leavenworth Fish Hatchery. Accordingly, EPA must issue this NPDES permit.

A NPDES permit was issued by EPA to the USFWS for discharges of wastewater from the Hatchery into Icicle Creek on August 31, 1974. The permit expired on August 31, 1979. USFWS continued to discharge wastewater from the Hatchery subject to the terms and conditions of the expired permit. EPA received an application for reissuance of the permit on November 12, 1980.

In July 2005, Washington Trout, a non-profit environmental organization, filed a lawsuit against EPA concerning the delayed issuance of the NPDES permit for the Hatchery. EPA entered into a settlement agreement with Washington Trout. Among the terms of the settlement agreement, EPA agreed to reissue a proposed draft NPDES permit for public notice by June 30, 2006. An updated permit application was received in November 2005. EPA is proposing to reissue the NPDES permit for discharges from the Leavenworth National Fish Hatchery into Icicle Creek.

Ecology has issued a general permit, the Upland Finfish Hatching and Rearing NPDES General Permit to the many private and state run hatcheries that operate in the State of Washington (hereinafter "Ecology General Permit"). Ecology first issued this general permit in 1990 and has reissued the general permit three times since the initial permit was established. Development of the Ecology General Permit was accomplished with significant input from hatchery operators and environmental interests during the state's public participation process for permit issuance. To achieve regulatory consistency between similar dischargers within Washington, EPA has included many of the same effluent limitations, monitoring and reporting requirements that were specified in the Ecology General Permit where applicable to the discharge and operation of the Leavenworth Hatchery. EPA is also utilizing much of the same technical and legal basis for proposed permit conditions that was provided by Ecology in their

fact sheet for the Ecology General Permit. Both the fact sheet and the Ecology General Permit are part of the administrative record for EPA's proposed permitting action and may be accessed online from the Ecology Water quality Program website: www.ecy.wa.gov/programs/wq/permits/permit_pdfs/upland_fin_fish/FinFishHatchery_Factsheet.pdf.

Criteria of Appendix C of 40 CFR Part 122 EPA establish that a hatchery, fish farm or other facility is a concentrated aquatic animal production facility if it contains, grows, or holds more than 20,000 pounds of aquatic animals in ponds, raceways, or other similar structures which discharge at least 30 days per year. About 90,300 pounds of fish are produced at the Leavenworth Hatchery each year with an additional 46,700 pounds of fish are held for acclimation during the months of March and April. Therefore, this hatchery is a Concentrated Aquatic Animal Production Facility for which a NPDES permit is necessary to authorize discharges of wastewater.

C. Description of Facility Operation and Associated Discharges

The Fish and Wildlife Service maintains a website (http://www.fws.gov/leavenworth/lvisit.htm) which contains significant information about the history, mission and operation of this hatchery and about the Leavenworth National Fish Hatchery Complex (Complex). The following information is excerpted from this website.

The Leavenworth National Fish Hatchery Complex was authorized by the Grand Coulee Fish Maintenance Project on April 3, 1937 and re-authorized by the Mitchell Act (52 Stat. 345) on May 11, 1938. The Complex consists of three mid-Columbia River anadromous fish hatcheries constructed by the Bureau of Reclamation as fish mitigation facilities for the construction of Grand Coulee Dam (Columbia Basin Project). Although re-authorized by the Mitchell Act, funding was provided through a transfer of funds from the Bureau of Reclamation to the USFWS until 1945 when the USFWS assumed full responsibility for funding, operations and maintenance of these facilities. The Bureau of Reclamation reassumed funding in 1994; however, the USFWS continues to operate and maintain the Complex.

Construction of the Leavenworth National Fish Hatchery occurred between 1938 and 1940. Spring Chinook salmon and steelhead trout were identified as the primary mitigation species, and the initial operating plan for the Complex called for adult spring Chinook salmon and summer steelhead to be trapped at Rock Island Dam and transported to the Leavenworth hatchery for spawning. From the early 1940's, fish reared and released from the Leavenworth hatchery included rainbow trout, steelhead trout, sockeye salmon, coho and Chinook salmon. Of these species, the spring Chinook salmon have traditionally made the greatest contribution to the Columbia Basin and ocean fisheries. The spring Chinook is the species currently reared at Leavenworth NFH. Spring Chinook salmon destined for the Leavenworth facility must travel 498 miles and negotiate through seven Columbia River Dams. Leavenworth NFH has the capacity to incubate 2.1 million salmon eggs and rears 1.625 million smolts in 61 rearing ponds. Adult spring Chinook salmon start migrating into the Columbia River in March. Adult fish arrive May through June into Icicle Creek. Spawning begins about the second week in August. About 500 females are needed to produce 1.6 million eggs--the hatchery's annual production goal. The

fish are reared for sixteen months and all are released in April from the hatchery into Icicle Creek, a tributary of the Wenatchee River. From this point, the fish travel a challenging 500 miles, past 7 dams and numerous obstacles until they reach the Pacific Ocean.

The water supply for the Hatchery is obtained from three sources. A diversion in Icicle Creek one and one half miles upstream of the hatchery routes most of the stream flow to the hatchery. Seven (7) cfs of this diverted water is provided to the Cascade Irrigation District to satisfy a senior water right. During the warm, low-flow summer and fall months the amount of water available from Icicle Creek is insufficient for the Hatchery and irrigation district needs. During these times, additional water is obtained from a pipeline plumbed into the bottom of Snow Lake which routes cold water into Icicle Creek upstream of the Hatchery/irrigation district diversion. The Hatchery also has seven wells from which groundwater may be pumped to augment the amount of water from Icicle Creek. Water pumped from the wells and the water routed Snow Lake are much cooler than the upstream waters of Icicle Creek during the warm, low-flow months of summer.

II. OUTFALL LOCATIONS

A. Rearing Pond and Raceway Discharges (Outfalls 001 and 004)

During normal operation, water flowing through the 88 raceways at the Hatchery is discharged directly into Icicle Creek via outfall 001. Daily average volume of the total Hatchery water discharged is approximately 26 million gallons/day.

When fish are ready for release they are moved from the raceways into two adult holding ponds. These ponds are operated for about two weeks each year during April. About 5.8 million gallons/day of the raceway water is diverted to the adult ponds. A pipe (outfall 004) from the adult holding ponds discharges this water to Icicle Creek adjacent to outfall 001.

The adult pond and raceway wastewater contains some organic solid wastes that consist of uneaten food and fecal material. The quantity of these wastes depends upon the volume of fish food being fed, the pounds of fish, pond design, cleaning techniques, and the amount of waste that settles out of the water prior to its discharge. Fish are hand fed at the Hatchery.

B. Offline Settling Basin Discharge or Pollution Abatement Pond (Outfall 002)

Water flowing through raceways during cleaning operations is routed to the pollution abatement pond, also called the offline settling basin. Overflow from the pollution abatement pond is discharged into Icicle Creek adjacent to the hatchery via outfall 002. The purpose of the pollution abatement pond is to allow solid particles (e.g., fish wastes) to settle prior to discharge into Icicle Creek. The offline settling basin wastewater contains re-suspended organic solids created when the bottom of the rearing ponds are cleaned by sweeping to a bottom drain system. Cleaning of the adult holding ponds is typically accomplished by vacuuming. The organic solids consist of fish food, fecal material, and other debris which settled out from the facility's water source. The average discharge volume from the pollution abatement pond is 288,000 gallons per day. The maximum discharge volume is about 8.6 million gallon/day.

C. Fish Screen Return Water (Outfall 003)

Another discharge (designated as outfall 003) is used to return fish screened from entering the hatchery water supply back to Icicle Creek. The maximum volume of this discharge is 288,000 gallons/day (average 144,000 gallons/day). No fish food or cleaning wastes are added to this return water.

III. RECEIVING WATER

A. Receiving Water

Effluent from the Hatchery will be discharged from outfalls 001, 002, 003, and 004 to Icicle Creek. Icicle Creek is a tributary to the Wenatchee River at river mile 48.

B. Receiving Water Quality Standards

Applicable water quality standards that apply in the vicinity of the Hatchery discharge are established in Chapter 173-201A WAC, Water Quality Standards for Surface Waters (WQS) of the State of Washington, as "Class A". Characteristic water uses established in the state's WQS for these waters include: water supply; stock watering; fish migration, rearing and harvesting; wildlife habitat; recreation; and commerce and navigation.

Receiving water quality criteria to protect these uses are contained in WAC 173-201A-030(2), 040, 050, and 130(21); EPA's Toxics Rule, 40 CFR Part 131 (57 FR 60848 December 22, 1992); EPA Quality Criteria for Water 1986 (the Gold Book) as amended; and/or other criteria published by EPA. This is also in accordance with WAC 173-201A-040(5) which specifies that "Concentrations of toxic, and other substances with toxic propensities not listed in subsection (1) of this section shall be determined in consideration of USEPA Quality Criteria for Water, 1986, and as revised, and other relevant information as appropriate." Receiving water quality criteria for protection of human health are also contained in the Toxics Rule.

The discharge of wastewater from current Hatchery operations has the potential to affect dissolved oxygen, pH and temperature in the receiving waters. Pollutants in the discharges were evaluated to determine whether there was a reasonable potential to cause or contribute to violations of these water quality criteria. Class A waters typically exhibit exceptional water quality that meets or exceeds the requirements for all or substantially all uses. The applicable WQS are as follows:

- The current water quality standards temperature criteria for Class A water are as follows:

  "Temperature shall not exceed 18°C… due to human activities. When natural conditions exceed 18°C …, no temperature increases will be allowed which will raise the receiving water temperature by greater than 0.3°C."

During critical periods, natural conditions may exceed the numeric temperature criteria mandated by the water quality standards. In these cases, the antidegradation provisions of those standards apply:

"Whenever the natural conditions of said waters are of a lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria."

- "pH shall be within the range of 6.5 to 8.5 (freshwater)... with a human-caused variation within the above range of 0.5 units."
- "Dissolved oxygen: (A) Freshwater – dissolved oxygen shall exceed 8.0 mg/l.
- Washington State water quality standards do not have numeric nutrient (nitrogen and phosphorus) criteria for streams. However, Chapter 173-201A contains a narrative criterion that applies to nitrogen and phosphorous. This criterion states:

"Toxic, radioactive, or deleterious material concentrations shall be below those which have the potential either singularly or cumulatively to adversely affect characteristic water uses, cause acute or chronic conditions to the most sensitive biota dependent upon those waters, or adversely affect public health, as determined by the department."

Ecology identified various portions of Icicle Creek as not meeting water quality standards for dissolved oxygen, instream flow, pH and temperature on the Washington State 2004 Clean Water Act 303(d) list. Therefore, the WQS discussed above were considered in developing applicable effluent limitations for the Hatchery.

C. Pollutants of Concern

Pollutants of concern in hatchery and rearing pond wastewater are the waste food and feces. The chemical constituents of concern in the waste food and feces are primarily nitrogen and phosphorus. These pollutants are present in the discharge from the raceways and rearing ponds at hatcheries and acclimation ponds in low concentrations, but in higher concentrations in the smaller volume discharged from the pollution abatement pond. The Wenatchee River watershed and Icicle Creek are also subject to water quality concerns about dissolved oxygen, pH and temperature. Therefore, the pollutants of concern in the Hatchery's discharge are nitrogen, phosphorous, TSS, SS, dissolved oxygen, pH, and temperature.

1. Dissolved Oxygen, pH, and Phosphorous

Ecology recently published the results of a water quality monitoring and modeling study that included Icicle Creek (Wenatchee River Basin Dissolved Oxygen, pH, and Phosphorus Total Maximum Daily Load Study, April 2006). The study documented that pH at the mouth of Icicle Creek was outside the criteria range for Class A waters. This study also determined from observed data and model simulations that dissolved oxygen and pH exceedances in the lower Wenatchee River and Icicle Creek (Class A reaches) were caused by periphyton (attached algae)

growth. Phosphorus is the most limiting nutrient that controls periphyton growth and biomass in streams within the Wenatchee River watershed.

Discussion and conclusions of this study that are relevant to this permit reissuance include:

- Nitrogen and phosphorus are essential nutrients for plant growth and aquatic community health. However, when there is an overabundance of nutrients, aquatic plant growth can become overstimulated, a process called eutrophication. If natural reaeration processes cannot compensate for plant respiration and production in areas affected by eutrophication, dissolved oxygen becomes under-saturated at night and over-saturated during the day, and hydrogen ion (pH) concentrations become over-saturated at night and under-saturated during the day. These diel (i.e., day to night) swings can be harmful to macroinvertebrates and fish.

- The Wenatchee River and Icicle Creek are very sensitive to the addition of nutrients. Although inorganic phosphorus levels are relatively low (less than 20 ug/L) compared to other Washington State streams, they are currently too high in the lower reaches to comply with the pH water quality standards.

- Large reductions of phosphorus are needed from both point and nonpoint sources in the lower Wenatchee River and Icicle Creek.

- During the warm, low-flow period of the year (critical period) that typically occurs in late summer, most of Icicle Creek flow originates from the Hatchery outflow. Most of the Hatchery outflow is water from their upstream Icicle Creek diversion; however, the Hatchery augments the Icicle Creek water diversion with water from a well-field to provide adequate flow for the facility. The ability to augment flow presumably creates consistent year-to-year flow conditions at the mouth.

- The September 2002 flow was assumed to represent 7Q10 conditions. Meteorological conditions from September 2002 were used in the model. The meteorology for 2002 was close to a median year representation.

- The September 2002 loads from the Hatchery main outflow and abatement pond discharge, as well as the calculated diffuse loads in lower Icicle Creek, were used in the model. They represent the best available data for these sources.

The critical period for pH problems in the receiving waters is from about July 1 through October 30. All historical data indicate that the season of concern for pH and dissolved oxygen is during the periphyton growing season from March through October, when biomass and growth are greatest. This season is interrupted from May through July due to spring runoff. There were a few pH excursions extending into the winter months of November and December. These are most likely due to periphyton biomass accumulation through the summer and fall growing season; biomass control during the growing season will likely mitigate winter-time excursions.

EPA used Ecology's 2006 water quality evaluation to assist with making permitting decisions prior to completion of the TMDL. It should be noted that final determinations for wasteload and load allocations for the Wenatchee River system will be established in an approved TMDL. The recommendations for pollutant loading that were included in the state's technical report are anticipated to change as part of this process. Therefore, EPA is proposing water quality-based limitations for total phosphorus which will require the Hatchery operator to reduce the amount of phosphorus in the discharge. These proposed limitations may be modified after completion of the TMDL to incorporate wasteload allocations into the NPDES permit or may be included in the next reissuance of this permit.

2. Temperature

Ecology also conducted an evaluation of temperature in streams within the watershed (Wenatchee River Temperature Total Maximum Daily Load Study, August 2005) which determined (page 73 of this study) that the Hatchery discharge water is colder than the stream (above the Hatchery diversion) during the critical period. Because almost all of the water in Icicle Creek above the Hatchery is diverted into the Hatchery during the critical warm summer months, outflow from the Hatchery constitutes the stream flow below the discharge point. Depending on the discharge flow and temperature, the Hatchery effluent can cool the lower reaches of Icicle Creek. The study identified (in Table 14) a maximum allowable discharge temperature (wasteload allocation) of 18.3°C for the Hatchery. Discharges at or below this temperature will not cause or contribute to violation of current temperature criteria in Icicle Creek during critical (low stream flow, warm weather) conditions.

3. Polychlorinated biphenyls (PCBs)

Ecology identified that PCBs were present in the tissue of fish from the Wenatchee River and Icicle Creek. The USFWS subsequently conducted an evaluation (Leavenworth National Fish Hatchery PCB and Pesticide Investigation, November 22, 2005) to determine if there were PCB sources within the Hatchery that were being discharged in the Hatchery effluent. This evaluation determined there was no statistical difference between PCB concentrations in stream sediment upstream and downstream of the Hatchery discharge. The study also stated that "[t]he source of PCB in the hatchery settling pond is likely from hatchery fish food since most fish food contains ocean by-catch fish as a protein source in the food (Meador, 2000). Paint used in raceways at the Hatchery contained Aroclor 1254 (David Schneider letter and analysis report to Dan Davies, December 10, 2004), but the only detected Aroclors in Hatchery settling pond sediment were Aroclor 1242 and 1260. The source of PCB contamination in the Hatchery settling pond is not likely from PCB-contaminated paint. The level of PCB contamination in fish food appears to be declining over the past two decades (Meador, 2000), and Ecology did not find detectable PCB in the batch of fish food analyzed in their investigation (David Schneider letter and analysis report to Dan Davies, December 10, 2004). The low level of PCB contamination in the settling pond is consistent with recent observations of PCB contamination in fish food (Meador, 2000; David Schneider letter and analysis report to Dan Davies, December 10, 2004)."

The Hatchery is currently arranging to clean sediment from the pollution abatement pond and to properly dispose of removed solids. No effluent limitations are proposed for PCBs since there appears to be no potential this pollutant is present in the discharge at levels that threaten to cause or contribute to violations of water quality standards.

D. Disease Control Chemicals

The Ecology General Permit identified disease control chemicals that may be used at hatcheries which are also considered to be pollutants of concern. These chemicals are used to treat both internal and external fish diseases and to prevent the spread of disease at or between facilities. The Ecology General Permit limits the use of these chemicals to only those approved for hatchery use and used in accordance with label instructions. The Ecology General Permit also prohibits the discharge of these chemicals in concentrations which would exceed federal or state water quality standards and requires that BMPs be used to minimize the concentration of these chemicals in the facilities' discharge. These chemicals include the following:

Internal Control	**External Control**	**Disinfectants/Other**
Amoxicillin	Acetic Acid	Chlorine
Terramycin (OTC)	Buffered Iodophor	Iodophor
Epsom Salts	Chloramine-T	MS-222
Erythromycin	Formalin	Quaternary Ammonia
Romet 30	Hydrogen Peroxide	Sodium Thiosulfate
Florfenicol	Potassium Permanganate	Aquashade
Penicillin	Sodium Chloride (Salt)	LLMO
Lincomycin	Diquat	Chlorhexidine
Albuterol	Citric Acid	Lime Type-S
Clindamycin	Copper Sulfate	Carbon Dioxide (gas)
Vibrio Vaccine		Ozone (gas)
Trimethoprim-sulfadiazine		
Chlortetracycline		
Tylosin		
Fumagillin		
Cephalexin		
Benzocaine		
Sulfamethoxazole (Albon)		
GnRH=gonadotropin releasing hormone		
Isoeugenol (Aqui-S)		
Calcein		
BKD Vaccine		
Flavobacterium Columnare B Vaccine		

These disease-control chemicals may be administered at known concentrations by fish hatchery operators for their therapeutic or disease prevention effect. The Hatchery reported using formalin (on fish eggs) and iodine (water hardening and disinfection) as necessary in small amounts.

There are situations where extra-label disease control drug and chemical use could occur with little reasonable potential to impact water quality. EPA also recognizes that an epizootic disease outbreak may require extraordinary measures to save the fish. Epizootic disease outbreaks may require the extra-label use of a drug or chemical or the use of a drug or chemical that is not approved by the FDA or EPA . Therefore, EPA is requiring 24-hour prior notification for emergency drug and chemical use. EPA is also requiring that a detailed account of quantity of disposed disease control drugs and chemicals is maintained of such use (NPDES permit part III. C.).

IV. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

A. Legal Basis

Section 301(a) of the Clean Water Act, 33 U.S.C. § 1311(a), prohibits the discharge of pollutants to waters of the United States unless authorized pursuant to a NPDES permit. Clean Water Act Section 402, 33 U.S.C. § 1342, authorizes EPA to issue NPDES permits authorizing discharges subject to limitations and requirements imposed pursuant to Clean Water Act Sections 301, 302, 303, 304, 306, 401, and 403, 33 U.S.C. §§ 1311, 1312, 1313, 1314, 1316, 1341, and 1343.

Pursuant to these statutory provisions, NPDES permits must include effluent limitations that require the discharger to (1) meet standards reflecting levels of technological capability, (2) comply with EPA-approved State water quality standards, (3) comply with other State requirements adopted pursuant to Clean Water Act Section 510, 33 U.S.C. § 1370, and (4) cause no unreasonable degradation to the territorial seas, contiguous zone, or oceans.

For conventional pollutants (*i.e.,* pH, biochemical oxygen demand (BOD), oil and grease, TSS, and fecal coliform), Clean Water Action Section 301(b)(1)(E), 33 U.S.C. § 1311(b)(1)(E), requires the imposition of effluent limitations based on best conventional pollutant control technology (BCT). For nonconventional and toxic pollutants, CWA Section 301(b)(2)(A), (C), and (D), 33 U.S.C. § 1311(b)(2)(A), (C), and (D), require the imposition of effluent limitations based on best available technology economically achievable (BAT). These regulations are the basis of limitations in the proposed permit.

Where effluent guidelines have not been promulgated by EPA, the Clean Water Act and NPDES regulations at 40 CFR § 125.3 require the permit writer to establish best practicable control technology currently available (BPT), BCT, or BAT effluent limits on a case-by-case basis based on Best Professional Judgment (BPJ). As mentioned above, Ecology has developed the Ecology General Permit for fish hatchery operations. EPA believes that the Ecology General Permit identifies effluent limitations and best management practices that are representative of BPT, BCT and BAT for pollutants that may be contained in this discharge. Therefore, based on BPJ, EPA has included these effluent limits in the proposed permit, as discussed below. The Ecology general permit for fish rearing operations also includes certain prohibitions which apply to all facility covered under the State's NPDES permit. EPA included these prohibitions (permit part I. B. 5.) based on the State's determination that such conditions are appropriate to control pollutants that might be contained in the Hatchery discharge.

B. Technology Based-Effluent Limitations and Permit Requirements

The technology based-effluent limitations EPA is proposing are consistent with those included in the general NPDES permit issued by Ecology to state and private hatcheries operating in Washington. As stated above, the basis for these requirements are discussed in detail in the fact sheet for the Ecology general permit. The state documents in the fact sheet that fish rearing facilities can reasonably and consistently meet these limitations by following appropriate operation and maintenance procedures. The technology-based limitations established for the Hatchery discharges are identified below:

Rearing Pond Discharges	Limit
Instantaneous Maximum Total Suspended Solids	15 mg/L
Average Monthly Total Suspended Solids Concentration	5 mg/L
Average Monthly Settleable Solids Concentration	0.1 ml/L

Offline Settling Basin and Rearing Pond Drawdown for Fish Release Discharges	
Instantaneous Maximum Total Suspended Solids	100 mg/L
Instantaneous Maximum Settleable Solids	1.0 ml/L

The proposed permit limits the use of drugs, medications, and chemicals (disease control chemicals) to those approved for aquaculture use by the United States Food and Drug Administration (FDA) or the US Environmental Protection Agency (EPA). The proposed permit also requires that the permittee maintain a record of the use of drugs, medications, or chemicals used in the hatchery (NPDES permit part III. C.).

C. Water Quality-Based Effluent Limitations and Permit Requirements

1. Phosphorous Limits

As discussed above, Ecology recently published a report which determined that the amount of phosphorus entering the Wenatchee River Watershed must be reduced to improve dissolved oxygen and pH conditions. Ecology assumed pollutant discharges from point and nonpoint sources, stream flow and temperature conditions that represent critical "worse case" conditions in determining the pollutant loading capacity that will not cause violations of water quality standards. A concentration-based target for discharges of dissolved inorganic phosphorus from the Hatchery was identified in this study. This target was developed based on predictions of a computer model for water quality in the Wenatchee watershed by applying certain assumed critical conditions and current hatchery discharges.

The Total Maximum Daily Load (TMDL) for dissolved oxygen and pH currently being developed by Ecology will establish wasteload allocations for this hatchery, as well as for the other sources of phosphorus loading in the Wenatchee watershed. NPDES requirements specify that water quality-based effluent limitations must be established for pollutants that cause or contribute to exceedence of water quality standards, regardless of whether a TMDL has been completed. *See* 40 C.F.R. §122.44(d). In advance of Ecology completing this TMDL, EPA is

proposing limitations which are based on the best available information and which EPA believes will be protective of water quality. These limitations may be changed by permit reissuance or modification if necessary to incorporate wasteload allocations of the approved TMDL.

Ecology's study (2006 report) of temperature, pH and dissolved oxygen documented pH changes in Icicle Creek beginning downstream of the Hatchery discharge. A maximum change in pH was observed at the creek mouth that exceeded (was higher than) the state water quality criteria of 8.5 units. Ecology identified that nutrient loading to Icicle Creek stimulated periphyton growth which in turn affected pH. Icicle Creek is very susceptible to changes in pH because these waters have a low natural alkalinity, which might otherwise buffer or moderate changes in pH. Phosphorus in the dissolved inorganic form is the nutrient that most readily degrades water quality in this situation. Dissolved inorganic phosphorus is a portion of the total phosphorus that is discharged in the hatchery effluent.

To reduce loading of phosphorus to Icicle Creek such that the Hatchery discharge does not cause or contribute to violation of the pH criteria, EPA is proposing a monthly average limitation of 0.01 mg/l for total phosphorus from the combined, flow-proportioned Hatchery discharge through outfalls 001 and 002 (NPDES permit part I.B.). Total phosphorus limits will apply seasonally from July 1st through September 30th of each year which is the period when the Hatchery discharge has a reasonable potential to affect the quality of receiving waters. This limitation is expected to not exceed the assimilative capacity Ecology identified for this pollutant. The Hatchery is currently conducting monitoring to better determine the sources and fate of phosphorus within the hatchery. This information will be used to help develop an approach for achieving compliance with this permit limitation. A compliance schedule of four years from the date of permit issuance is established in the proposed permit (NPDES permit part VII) for the Hatchery to achieve the new water quality-based effluent limitation for total phosphorus.

A concentration-based limitation is being proposed for total phosphorus, rather than a mass-based limitation, because water quality problems downstream of the Hatchery may be partially resolved by increasing flow in Icicle Creek during the critical period. The Hatchery already augments stream flow during the warm, low-flow summer months by routing cold water from Snow Lake into Icicle Creek and by adding water pumped from wells to the Hatchery intake. Increasing critical season flow in Icicle Creek and reducing phosphorus loading from the Hatchery is anticipated not only to resolve violations of pH criteria but to also significantly improve water quality and habitat conditions in the Wenatchee River. If augmenting stream flow during the critical period is subsequently determined not to be a viable option, the proposed permit limitations may be revised if necessary to protect water quality. Other efforts to address water quality problems in the Icicle Creek watershed, such as reducing the water diverted for irrigation from Icicle Creek above the Hatchery, may also improve water quality and habitat conditions.

2. Temperature

As mentioned previously, the Hatchery discharge constitutes the stream flow of Icicle Creek downstream of the Hatchery. The temperature of the Hatchery discharge is cooler than the

natural stream temperatures measured in Icicle Creek above the Hatchery's Snow Lake diversion during the critical period. In the Wenatchee River Watershed Temperature TMDL Ecology has proposed a wasteload allocation of 18.3° C for the Hatchery discharge.

Results of the most recent monitoring of Icicle Creek and the Hatchery discharge were presented in a report entitled Progress Report, Icicle Creek Water Temperatures: July 16, 2005 – November 9, 2005. (Prepared By: Barbara Kelly Ringel, Mid-Columbia River Fishery Resource Office, U.S. Fish and Wildlife Service, Leavenworth, WA Final June 14, 2006). This monitoring documents that the water temperature of Icicle Creek downstream of the Hatchery discharge is cooler during the critical period than that upstream of inflow from Snow Creek. There is no reasonable potential for the discharge to violate the existing Class A water quality criteria of 18°C and therefore no limitations are being proposed for this parameter. The permit does require the Hatchery continue to monitor and report the temperature of intake and discharge waters, as well of ambient waters downstream of the discharge (NPDES pemit part II. A.4.). If the state's water quality criteria for temperature are changed, this permit may be modified or reissued to incorporate limitations determined necessary to protect water quality.

3. Operational and Monitoring Plans

The Hatchery is required to operate the facility in a manner that minimizes the amount of wastes discharged into receiving waters by developing and implementing hatchery specific best management practices (BMPs) (NPDES permit part III. B.). A plan for managing solids wastes must also be developed and implemented. Monitoring of the discharge and receiving waters are to be conducted according to EPA approved methodologies according to a Quality Assurance Plan. These requirements are similar to those established in the Ecology General Permit.

4. Limits to Protect Human Health

The only pollutants known to have the potential to impact human health are the disease control chemicals. Because the fish are raised for eventual human consumption, the FDA also regulates the use of these chemicals. The proposed permit allows the Hatchery to use FDA-approved disease control chemicals only if they are used according to the product label (NPDES permit part III. C.). The proposed permit also prohibits the discharge of these chemicals in concentrations which would exceed federal or state water quality standards and requires that BMPs be used to minimize the concentration of these chemicals in the facilities discharge.

D. Standard Permit Conditions

Sections (NPDES permit parts VII and VIII) of the proposed permit contain standard regulatory language that must be included in all NPDES permits, consistent with 40 CFR § 122.41. Because they are regulations, they cannot be challenged in the context of an NPDES permit action. This standard regulatory language covers requirements such as monitoring, recording, reporting, compliance responsibilities and other general requirements.

V. OTHER LEGAL REQUIREMENTS

A. Endangered Species Act

Section 7 of the Endangered Species Act (ESA) of 1973 requires federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) to ensure that any federal action, such as resissuance of this NPDES permit, jeopardize the continued existence of any endangered or threatened species or adversely affect its critical habitat. NPDES regulations at 40 CFR Part 122.49(c) also require this showing for the issuance of NPDES permits.

The United States Fish and Wildlife Service maintains a Threatened and Endangered Species website from which EPA identified the species identified below as potentially being present in the vicinity of the Leavenworth Hatchery discharge into Icicle Creek.

Listing Status	Species
T	Steelhead (Oncorhynchus (=Salmo) mykiss)
E	Salmon, chinook spring upper Columbia R. (Oncorhynchus (=Salmo) tshawytscha)
T	Bald Eagle (Haliaeetus leucocephalus)
T	Trout, Bull (Salvelinus confluentus)

T = threatened, E = endangered

EPA believes that discharges in compliance with the proposed effluent limitations and monitoring requirements shall not cause any violation of water quality standards established for the protection of aquatic life nor affect any listed, threatened or endangered species. Nevertheless, EPA is providing copies of the proposed permit and fact sheet to these agencies for their review. Based on comments received from these agencies, EPA may engage in formal conference and consultation processes for ESA Section 7 considerations (per 50 CFR Part 402).

B. State Certification

Section 401 of the Clean Water Act, 33 U.S.C. § 1341, requires EPA to seek state certification before issuing a final permit. A copy of the proposed permit and fact sheet and a request for 401 certification were submitted to the Washington Department of Ecology, Central Regional Office at the initiation of the public notice period for this permit.