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United States Government **Department of Energy**

Bonneville Power Administration

memorandum

DATE: October 2, 2003

REPLY TO ATTN OF: KEC-4

SUBJECT: Colville Resident Trout Hatchery Project Supplement Analysis (DOE/EA-0307-SA-01)

TO: Greg Baesler
Project Manager – KEWU-4

Proposed Action: Colville Resident Trout Hatchery Project—Modifications to original proposal

Project No.: 1985-038-00

Location: Colville Indian Reservation, Okanogan County, Washington

Proposed by: Bonneville Power Administration (BPA)

Introduction: The Bonneville Power Administration prepared an Environmental Assessment (DOE/EA-0307) for the Colville Resident Hatchery Project (Project) and published a Finding of No Significant Impact (FONSI) in the Federal Register on September 8, 1986 (Vol. 51, No.173). The Project involved the design, site selection, construction, operation and maintenance of a resident trout hatchery on the Colville Indian Reservation to partially mitigate for anadromours and other fish losses resulting from the the construction and operation of the Chief Joseph Dam and Grand Coulee Dam hydroelectric projects.

Since the hatchery was constructed, ongoing Operation and Maintenance (O&M) and Monitoring and Evaluation (M&E) activities have been funded by BPA. The O&M and M&E activities examined in the EA were very general in nature due to the fact the project was in the conceptual stage. Since that time the hatchery has refined the need for specific O&M and M&E activities, proposed for fiscal year 2004, (funding for projects runs from October 2003 to September 2004). The purpose of this Supplement Analysis (SA) is to determine if a supplemental EA is needed to analyze the environmental impacts that would result from the specific O&M and M&E activities proposed for fiscal year 2004.

Description of Action and Analysis: The proposed O&M and M&E activities for fiscal year 2004 are listed in the attached SA, which also contains an analysis of their environmental impacts.

Findings: As documented in this Supplement Analysis, there are no substantial changes to the proposal or significant new circumstances or information relevant to environmental concerns compared to the information presented and circumstances described in the 1986 Colville Resident Trout Hatchery Project Environment Assessment (DOE/EA-0307) and FONSI. The proposed changes to the project are similar to the kind described in the 1986 EA and would not raise the level of the environmental impacts to a significant level. Therefore, a supplemental EA is not needed.

/s/ Kimberly St. Hilaire
Kimberly R. St.Hilaire
Environmental Protection Specialist– KEC

CONCUR: */s/ James Kehoe for* DATE: *October 2, 2003*
Thomas C. McKinney
NEPA Compliance Officer

Attachment:
Colville Resident Trout Hatchery Project Supplement Analysis (DOE/EA-0307-SA-01)

cc: (w/attachment)
Dan Fairbank, Fish Biologist II, PO Box 150, Nespelem, WA 99155

Colville Resident Trout Hatchery Project
Supplement Analysis

DOE/EA-0307-SA-01

Prepared by the Bonneville Power Administration

October 2003

Colville Resident Trout Hatchery Project

Supplement Analysis

October 2003

1. Introduction

The Colville Confederated Tribes own and operate the Colville Tribal Hatchery (CTH) and Bonneville Power Administration (BPA) provides the funding. The resident trout hatchery program partially satisfies BPA's fish and wildlife responsibilities pursuant to Section 4 (b) (10) (A) of the Pacific Northwest Electric Power Planning and Conservation Act and other legislation. The goal of the CTH is to provide artificial production of fish that will help support and enhance tribal subsistence fisheries and non-tribal recreational sport fisheries within the Colville Indian Reservation, including its boundary waters.

The CTH project was proposed in 1984. In 1986, BPA completed an Environmental Assessment (DOE/EA-0307) for the Colville Resident Hatchery Project (Project). This Environmental Assessment (EA) is referred to as the "1986 EA" in this Supplement Analysis (SA). The Project involved the design, site selection, construction, operation, and maintenance of a resident trout hatchery on the Colville Indian Reservation to partially mitigate for anadromous and other fish losses resulting from the construction and operation of the Chief Joseph Dam and Grand Coulee Dam hydroelectric projects, which blocked upstream fish passage. A Finding of No Significant Impact (FONSI) was published in the Federal Register on September 8, 1986 (Vol. 51, No. 173).

In the years since the hatchery was constructed, BPA has funded ongoing Operation and Maintenance (O&M) and Monitoring and Evaluation (M&E) activities. The O&M and M&E activities examined in the 1986 EA were described in very general terms due to the fact the project was in the conceptual stage. Since the 1986 EA, the hatchery has refined the need for specific O&M and M&E activities, proposed for fiscal year 2004 (funding for projects runs from October 2003 to September 2004). Some of the proposed activities would not be completed in one year, so would extend into the future. The purpose of this SA is to determine if a Supplemental EA is needed to analyze the environmental impacts of the specific O&M and M&E activities proposed for fiscal year 2004 and subsequent years. A Supplemental EA is needed if there are substantial changes to the proposal or significant new circumstances or information relevant to environmental concerns (10 CFR Part 1021.314 (a)).

2. NEPA Analysis to Date

The 1986 EA analyzed the impacts of constructing and operating the hatchery at two alternative sites, and the impacts of operating and maintaining the hatchery. The impacts to various resources were analyzed, including geology and soils, water resources, fisheries, vegetation and wildlife, recreation resources, land use, cultural resources, air quality, noise, traffic, solid waste, and aesthetics. Based on the analysis in the EA, BPA determined that the proposed action is not a major Federal action significantly affecting

the quality of the human environment, within the meaning of the National Environmental Policy Act (NEPA) of 1969. Therefore, the preparation of an Environmental Impact Statement (EIS) was not required, and BPA issued a FONSI on September 8, 1986.

3. Description of the Proposed Action in 1986 EA

The CTH program description in the 1986 EA covered the following activities in Section 1.3, where they are described in more detail:

1.3.1 Hatchery Facilities

1.3.2 Waste Management

1.3.3 Egg and Sperm Acquisition

1.3.4 Incubation and Rearing

1.3.5 Off-station Plantings

1.3.6 Support Services (includes food supply, chemical supplies, access and utilities, and solid waste)

4. Activities Proposed for Fiscal Year 2004 and Subsequent Years

The activities proposed for fiscal year 2004 may require more than one year to complete. They are listed below as a series of eight objectives. These eight objectives include O&M and M&E activities. The O&M portion assures continuous, cost effective and prudent operation of the CTH. The M&E portion helps address concerns about the effects of Colville Reservation fisheries and provides information for adaptive management of these fisheries to improve yield. The M&E component provides information about new potential fisheries, integrates new ideas and technology into the hatchery program and assists with other projects to improve information about, and assess the effects of, the hatchery program on native biota.

Objective 1. Integrate triploiding technology and knowledge into CTH yet still maintain a 50,000 lb. minimum production of resident salmonids to be planted into reservation waters. The tasks within this object include both fish culture and distribution and egg acquisition and incubation.

- Hatch, rear and stock a minimum of 50,000 lbs. of trout to include 10,000 lbs of jumbo trout, 20,000 lbs. of yearling triploid rainbow trout, 12,000 lbs. of sub-yearling triploid rainbow trout, 8,000 lbs. of yearling triploid brook trout, 10,000 lbs. of sub-yearling eastern brook trout of which up to 6,100 lbs. should be triploid, and 2,595 lbs. of sub-yearling or yearling Lahontan cutthroat trout depending on space availability.
- Hatch, rear, and stock 4,480 lbs of redband rainbow trout (also known as wild redband trout and native redband), a native species, from 5,000 redband rainbow trout acquired from WDFW and from a small number (<200) of pure redband rainbow trout obtained from an on-reservation population.
- Provide monthly fish health monitoring for all stocks.

- Develop the techical expertise and equipment necessary to triploid 500,000 eggs taken at WDFW Goldendale hatchery and other sources, possible including Mt. Whitney stock from Eels Springs Hatchery(WDFW).
- Annually, obtain 800,000 eastern brook trout eggs from Owhi Lake brood stock and triploid 400,000 of these eggs using a pressure cylinder.
- Determine age structure and growth of spawning populations utilizing lengths and otoliths.
- Annually obtain 100,000 eggs from Omak Lake broodstock to produce 65,000 Lahontan cutthroat trout for stocking back into Omak Lake.
- Obtain and rear 100,000 westslope cutthroat eyed eggs and 26,000 fry from a WDFW hatchery located at Lake Chelan, every two years, due to the small number of lakes that are typically stocked and space limitations.

Objective 2. Maintain return to creel (lbs harvested/lbs stocked) percentages between 50% and 66% on a per acre basis, and determine the contribution to subsistence and recreational fisheries of naturally produced fish, and hatchery origin fingerling, sub-yearling and legal size fish by developing a marking program for 100% of production for creeled lakes (a lake where a creel clerk is present and monitors harvest). A marking plan will be developed and implemented for hatchery origin fish (approximately 605,000 fish). The program proposes to adipose clip 100% of fish produced and inject subcutaneous elastometer marks into 100% of the sub-catchable and catchable component of the hatchery production to be released into reservation waters. Voluntary and roving creel census surveys will be conducted on Colville Reservation lakes, including hours fished, angler catch rate, mean length, mean weight, % marked, relative weight for each fish, % return to creel/acre, % returned to catch/acre (lbs caught/lbs stocked), and % caught and released. Creel census data will be collected using procedures compatible with WDFW to improve data sharing opportunities.

Objective 3. Potential sources of redband rainbow trout will be identified for utilization as a production source or development of a captive brood stock program to support harvest of native species and reduce reliance upon non-native stocks of rainbow trout. Surveys will be conducted on all streams flowing into lakes to determine if natural reproduction is occurring and to attempt to measure success of natural spawners. Genetic evaluation of redband rainbow trout will be accomplished by collecting samples in accordance with the protocol described by WDFW. A redband rainbow trout brood stock program will be developed at CTH, with the eventual goal of finding a suitable lake to develop a wild brood stock population.

Objective 4. Collect temperature, bathymetry, and oxygen profiles plus presence/absence fish data for 5 lakes per year for lakes currently stocked by this program and for new potential fisheries. Some data will be collected through the placement of temperature loggers and oxygen loggers at 1m, 5m, 9m, and 13m depths, attached to a nylon cord and suspended from a float and anchored to the lake bottom for 1 year. Bathymetry maps will be made by taking a minimum of 50 GPS “way- points” in each lake. Presence/absence data will be collected using two experimental mesh gill nets set for 16 hours from 4:00 P.M. to 8:00 A.M. and two Maine trap-nets for the same duration. If

boat access is available, then the entire shoreline will be pulsed-DC electrofished. All fish collected will be identified to species and counted before being released. Five specimens will be taken for each species encountered at each lake that is not a commonly encountered species and preserved in 10% formalin.

Objective 5. Collect relative abundance data on 5 lakes per year currently being stocked by the CTH that do not have a creel census component. Relative abundance surveys will be accomplished using gill net surveys or electrofishing where access permits. Each fish collected will be identified to species, weighed to the nearest gram, and measured for length to the nearest millimeter.

Objective 6. Evaluate the populations of non-native, non-salmonid species illegally introduced into lakes currently being stocked by this program with emphasis on largemouth bass. Relative abundance surveys will be accomplished using gill net surveys or electrofishing where there is access. When sampling for largemouth bass, nighttime DC-electrofishing will be used because this method is highly effective for assessing these populations. Each fish collected will be identified to species, weighed to the nearest gram, and measured for length to the nearest millimeter.

Objective 7. Collect invertebrate samples and zooplankton samples to identify the quality and quality of food resources available at lakes where fish population data is collected, as an initial step in establishing carrying capacity estimates for lakes across the Colville Reservation. Samples will consist of limnetic and near shore vertical tows utilizing a Birge type closing plankton net with a reducing cone and 80 micron mesh bucket. Samples will be analyzed for relative large zooplankton abundance, dominant species, and invertebrate biomass. The invertebrate and zooplankton data collected in this objective will be combined with historic food habit analysis samples obtained in past creel census surveys and relative abundance surveys to examine trophic level interactions and monitor potential effects of intensive stocking activity.

Objective 8. Determine factors that may limit return-to-creel for all reservation lakes and determine where management plans for restoration and/or rehabilitation are needed. This will be accomplished using the data collected in Objectives 1-7 and will also utilize data collected in past years, to develop future management strategies.

5. Effects of Proposed Project Activities

The proposed project activities were evaluated in light of the 1986 EA to determine if they were covered within the scope of the 1986 EA. If they are different enough from any of the activities described in the 1986 EA or were not contemplated at that time, then the effects of these activities are analyzed in this SA.

Dan Fairbanks, Fish Biologist II for the Colville Tribe, provided the information below used to determine the effects of various activities (Personal communication on. 9/29 and 9/30/2003). Because the proposed activities do not include any ground disturbance or new activities in uplands adjacent to waterways, there would be no impacts to soils,

geology, vegetation or cultural resources. There will be little additional noise, disturbance, or human presence that could negatively impact eagles or terrestrial wildlife species. For this reason, the effects analysis below focuses on the impact to fisheries, aquatic life and water resources.

Objective 1. Fish culture methods do not differ significantly from the methods contemplated in the 1986 EA so effects will not be significant. The effect on resources utilized for fish culture, including water use and waste production, are similar in amount and type of effect. The 1986 EA lists four species of fish that were to be produced and liberated: rainbow trout, eastern brook trout, Lahontan cutthroat, and westslope cutthroat. Under the recent proposal, the CTH proposes to produce and liberate redband rainbow trout, a native fish species. Because redband rainbow trout are a native species, the effect of transitioning to this species will be beneficial in that it will promote the use of species native to the area. The production of redband rainbow trout would be in addition to the approximately 50,000 pounds of fish production considered in the 1986 EA. Food resources and other parameters of the aquatic habitat will be monitored to determine if production is exceeding the ability of the environment to support this amount of fish. Monitoring is discussed in other objectives, below.

Fish distribution methods do not differ from the techniques or locations analyzed in the 1986 EA. All waters where fish will be distributed have been previously stocked and do not contain any listed threatened or endangered species. The work relating to obtaining on-reservation eggs was covered within the 1986 EA, which discussed taking eggs from naturally spawning populations and existing hatchery sources. CTH is attempting to develop on and rely on an on-reservation source for native redband rainbow trout eggs.

Triploid technology will be introduced to the CTH as a way of phasing out non-native hatchery fish, while a native species, redband rainbow trout, will be phased in. Although triploid stock fish are commonly used by the state of Washington, they have not been used on the Colville Reservation. Triploid fish will help phase out the use of non-natives because triploids are sterile, and cannot reproduce. They do grow faster and get bigger but tribal fish biologists do not expect that triploids will overuse food resources. To ensure this does not happen, monitoring of food resources will be done under Objective 7, discussed below. Pure redband rainbow trout are not currently found in the lakes that will be stocked with triploid fish so they will not be affected by the stocking of triploid species.

Objective 2. The marking program involves only hatchery fish and will have minimal impacts on other resources. Markers are tiny, normally less than 5 millimeters and made of elastomer (a plastic rubber compound) and will not be detrimental to the environment because they are inert, containing no known solvent and non-toxic. So if a fish or other aquatic species ingested a tag there would be no known negative consequences. It is not likely that humans would ingest elastomer tags. They are inserted on fins or the fish cheek, parts which are not usually eaten. If they were inadvertantly eaten, humans would not be harmed by ingesting these tags because they are non-toxic. Because they are inert and non-toxic, there will be no effects to water resources and the aquatic environment.

Roving and voluntary creel census surveys on Colville Reservation Lakes will not affect resources and the minimal time needed to complete a survey will not significantly detract from the quality of the recreational experience for people who complete surveys because they take minimal time and effort.

Objective 3. Utilizing a native species, redband rainbow trout, as a production source will eventually have beneficial effects on the Colville Reservation fishery because it would reduce the reliance upon non-native stocks. Determining potential sources of redband rainbow trout could have some minimal and generally temporary impacts on the redband rainbow trout population. There could be some unintended mortality as the result of electrofishing, but it would be very minimal. Electrofishing practices and methods will be used to ensure that fish are harmed as little as possible. Mortality of individuals is expected to be minimal because the zone of injury is generally only 0.5 meters from the electrode and the number of electrofishing sites are limited. Only representative sections of streams are electrofished. Electrofishing crews are trained in the use of equipment prior to using it to prevent harm to fish from using excessive voltage. At each site, the crews and test settings, reducing voltage until it serves as an attractant to fish, rather than incapacitating them.

Taking redband rainbow trout from the water for broodstock purposes will result in the temporary loss of the breeding potential of these individuals from the reservation waters. This will be partially mitigated for by their use in the breeding program, which will eventually enhance their contribution to the reservation redband rainbow trout gene pool. Due to the assumed rare occurrence of species such as redband rainbow trout on the Colville Reservation, the tribe proposes to utilize a modification of methods described in the Interim Protocol for Determining Bull Trout Presence (Peterson et al. 2000). Although this protocol was established specifically for bull trout, its application may be appropriate to assess presence of "rare" salmonids.

Safeguards that will be employed in the use of electrofishing to minimize the potential for harm to fish and other aquatic life are discussed above. In addition, electrofishing will be limited to the morning hours and stop once water temperatures reach 18^0C to reduce handling stress. The number of redband rainbow trout that are expected to be collected will be only a small fraction of the existing population so this loss is not a significant effect. The maximum amount taken will be less than 10% of the existing population because it does not take many fish to develop a broodstock. A small number of fish are taken from each stream to ensure that the resulting broodstock contains a good representation of the genetic complement of this species within reservation waters.

Redband rainbow trout will only be minimally harmed by the techniques used for genetic evaluation. The genetic evaluation of redband rainbow trout tissue can be accomplished using a small tissue samples (a small piece of fin is clipped off). This does not kill fish and will not interfere with their normal behaviors.

Objective 4. Collecting temperature, bathymetry, and oxygen profiles would only have negligible effects on water resources. The collection of presence/absence fish data, accomplished using gill net surveys (where access permits) or electrofishing, would not be done in any waters with listed threatened or endangered species. Safeguards that will

be employed in the use of electrofishing to minimize the potential for harm to fish and other aquatic life are discussed in Objective 3 above. There would be some mortality of collected species resulting from the preservation of five specimens of each uncommon species encountered (so they can be brought back to the lab for identification) but this is not expected to impact fish populations due to the small number of fish to be preserved.

Objective 5. The collection of relative abundance data on lakes that are currently being stocked by the CTH will be accomplished using gill net surveys (where access permits) or electrofishing. The collection of presence/absence fish data would not be done in any waters with listed threatened or endangered species. Safeguards that will be employed in the use of electrofishing to minimize the potential for harm to fish and other aquatic life are discussed in Objective 3 above.

Objective 6. The collection of fish data on undesirable species, accomplished using gill net surveys (where access permits) or electrofishing, would not be done in any waters with listed threatened or endangered species. Safeguards that will be employed in the use of electrofishing to minimize the potential for harm to fish and other aquatic life are discussed in Objective 3 above.

Objective 7. The methods used to collect invertebrate samples and zooplankton samples would not result in significant effects on the environment. Only a miniscule amount of available food resources would be collected. Collection would not be done in any waters that contain listed threatened and endangered fish species.

Objective 8. Determining factors that may limit return-to-creel for all reservation lakes and where management plans are needed for restoration and /or rehabilitation would not have any significant environmental impacts. Data collected under Objectives 1-7 would be utilized and the methods used to identify areas in need of restoration would not result in ground disturbance. Any proposed changes in the management will be evaluated under NEPA prior to implementation.

6. Findings

As documented in this Supplement Analysis, there are no substantial changes to the proposal or significant new circumstances or information relevant to environmental concerns compared to the information presented and circumstances described in the 1986 Colville Resident Trout Hatchery Project Environment Assessment (DOE/EA-0307) and FONSI. The proposed changes to the project are similar to the kind described in the 1986 EA and would not raise the level of the environmental impacts to a significant level. Therefore, a supplemental EA is not needed.

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