

**Supplement Analysis**  
for the  
**Mid-Columbia Coho Restoration Program Final EIS**  
**Natapoc Hatchery design revisions**  
(DOE/EIS-0425-SA-4)

Bonneville Power Administration  
Department of Energy



**Background**

In 2012, BPA completed the Mid-Columbia Coho Restoration Program Final Environmental Impact Statement (EIS) (DOE/EIS-0425) and Record of Decision (ROD) documenting its decision to fund the Yakama Nation to implement the remaining phases of its coho restoration program in the Wenatchee and Methow river basins. The program has been developing a locally adapted broodstock since 1996 with the goal of establishing naturally reproducing, self-sustaining coho populations in multiple tributaries throughout the two basins. The action analyzed in the EIS and selected in the ROD included the construction of a hatchery, called Natapoc<sup>1</sup>, in the Wenatchee basin. Since completing the ROD, the Yakama Nation has further developed and refined the hatchery design which includes moving the hatchery facilities to a different part of the property to avoid wetlands, adding residential housing, improving water conservation, and upgrading the wastewater treatment and disposal system.

This supplement analysis was prepared to determine if the design revisions to the Natapoc Hatchery represent a substantial change as considered in the EIS, or if they present significant new circumstances or information relevant to environmental concerns that bear on the proposed action or its impacts. The findings of this supplement analysis determine whether a supplemental EIS is needed pursuant to 40 Code of Federal Regulations (CFR) § 1502.9(c).

**Analysis**

**Hatchery design revisions**

The hatchery design revisions since the EIS and ROD were completed include moving the hatchery facilities to a different part of the property, adding residential housing, improving water conservation, and upgrading the wastewater treatment and disposal system. As described in the EIS, the Natapoc Hatchery would be sited on an approximate 150-acre parcel of land located in Chelan County, Washington. The property was privately owned at the time of the EIS and the EIS described that the Yakama Nation planned to purchase it. The Yakama Nation now owns the property as predicted. The parcel is located on the Wenatchee River approximately one mile downstream of Lake Wenatchee and immediately below its confluence with Nason Creek.

The hatchery was originally proposed to be located on the northeast side of the property, but to reduce impacts to wetlands in that location the hatchery is now proposed approximately 1,750 feet to the southwest on the same property.

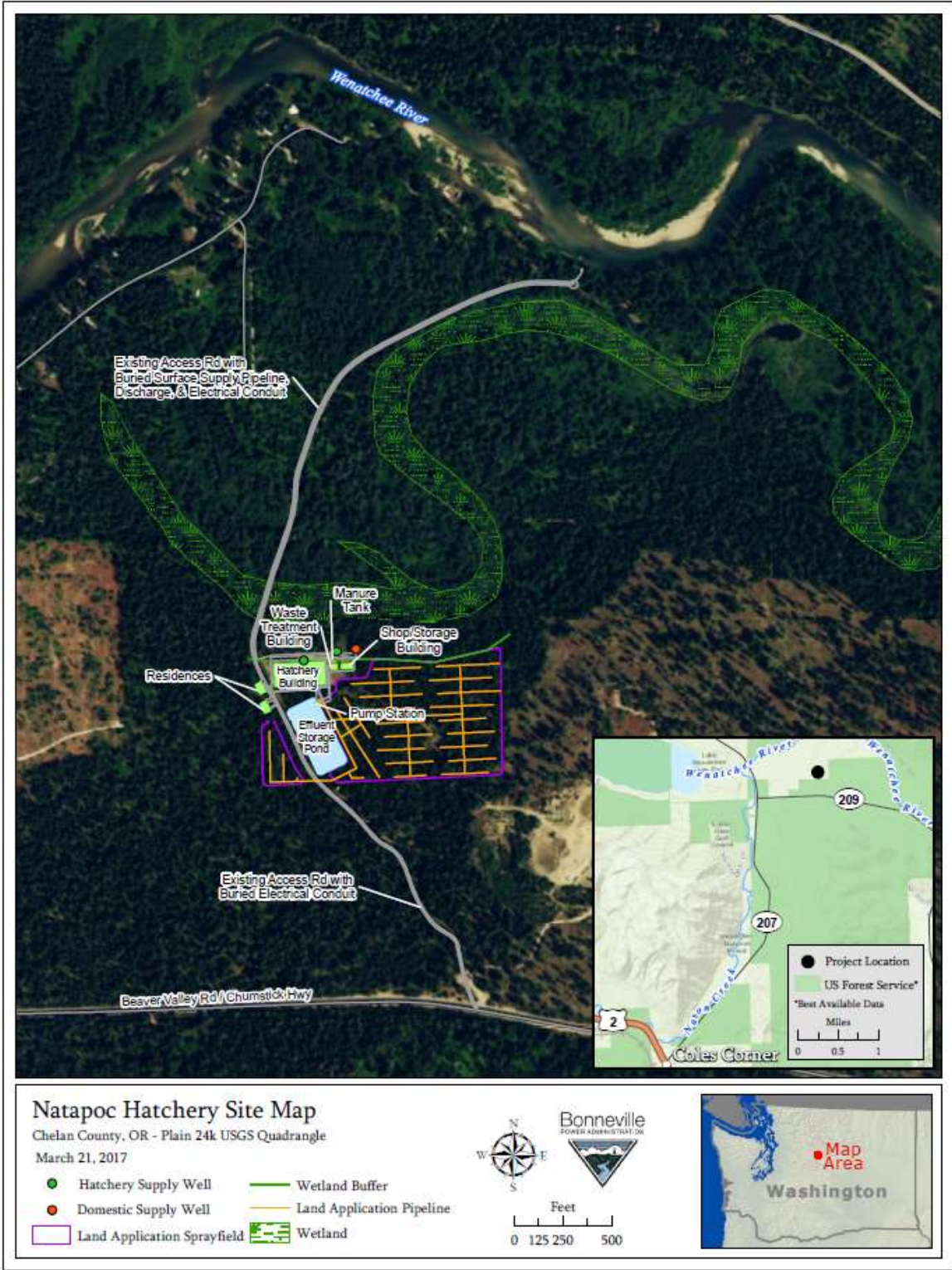
Figure 1 shows the proposed layout of the hatchery facility in the proposed location. The site is adjacent to National Forest System lands on the east and south, private residential property on the northeast, a Chelan County Public Utility District (PUD) wastewater treatment facility on the west, and the Wenatchee River on the

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<sup>1</sup> Natapoc was referred to as 'George'; in the Draft and Final EIS.

north. The slight change in hatchery location within the same property does not represent a substantial change from the proposal as described in the EIS.

**Figure 1** Location of Natapoc hatchery



The facility design is more developed but consistent with what was considered in the EIS. The overall impact area for the hatchery facilities as now proposed would be about 18.5 acres—1 acre for hatchery facilities, including the residence; 5.5 acres for temporary construction disturbance; and 12 acres for an effluent spray field. The EIS analyzed impacts areas ranging from 2.5 acres to 20 acres depending on the hatchery site alternative considered—1.5 acres for the hatchery facilities, 1 to 4 acres for temporary impacts, and an additional 14.5 acres for creek work for the originally proposed site in the EIS. Therefore, the footprint of the Natapoc hatchery design revisions is not substantially different than what was considered in the EIS.

Other changes include the addition of two residences to house hatchery workers. The residences would not increase the footprint of the overall facility, use more water, or create substantially greater impacts from the proposal as described in the EIS.

Design changes to improve effluent treatment and disposal were developed in coordination with the Washington State Department of Ecology (Ecology). Ecology has established a Total Maximum Daily Load (TMDL) for the Wenatchee River<sup>2</sup> that limits discharges of total phosphorus (TP). The load allocations apply only during the “critical periods” of March through May and July through October. The design improvements would lessen TP discharges during the critical periods through the use of indoor circular-tank systems for late-stage rearing, rather than the traditional outdoor concrete raceways that were originally proposed. Most of the water used in hatchery operations would recirculate through several types of treatment methods that would remove most of the solids and nutrients. Afterwards, this treated water would enter an effluent storage pond. A small proportion of the rearing water would not recirculate but would enter a waste-treatment building to further remove and concentrate the solids. These solids would be pumped to a manure tank, and any remaining liquids would flow to the effluent storage pond.

The effluent would be sprayed on dry land during the TMDL critical periods, rather than discharged into the Wenatchee River. Effluent would be sprayed at a rate less than or equal to the amount of uptake by plants. This would minimize nutrient inputs to groundwater or surface water.

Yakama Nation is applying for a water right of 2.9 cfs, which accommodates the highest usage periods plus a 25% safety factor. This amount is lower than the 3.3 cfs of groundwater use and the 4.7 cfs of surface water use analyzed in the EIS. The water right would apply to both groundwater and surface water. This “hybrid” water right would include both consumptive and non-consumptive rights. During the non-critical period, the hatchery would operate under the non-consumptive right, because all water routed through the hatchery would return to the river. However, during the critical period, operations would require a consumptive water right (maximum of 60 gpm [0.13 cfs]), because hatchery effluent would be applied on land, and some water would be lost to evapotranspiration.

Overall, the design revisions for water conservation, wastewater treatment, and effluent disposal are not substantially different than what was considered in the EIS and would help lessen impacts on the environment.

Facilities proposed for construction include:

- **Buildings:** 1) hatchery building with 27,000 square feet of rearing space and 6,000 square feet for administrative activities; 2) 900-square-foot waste treatment building; 3) 1,800-square-foot shop and storage building; 4) two staff residences with garages, each occupying 2,400 square feet
- **Groundwater supply:** 1) two hatchery water-supply wells and one domestic water-supply well; 2) groundwater headbox and aeration columns inside the hatchery building

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<sup>2</sup> Carroll, J. and R. Anderson. 2009. Wenatchee River Watershed Dissolved Oxygen (DO) and pH Total Maximum Daily Load, Water Quality Improvement Report. Publication No. 08-10-062, Water Quality Program, Central Regional Office, Washington Department of Ecology. Yakima, WA.

- **Surface-water supply:** intake and water-delivery pipeline from the Wenatchee River to be used as a backup, if needed
- **Process water systems:** 1) five modules that include rearing equipment and water reuse and treatment systems for each coho life stage in the hatchery; 2) two 20-ton chillers
- **Hatchery effluent treatment:** 1) effluent pump station; 2) waste-treatment building to remove solids from discharge water; 3) buried concrete manure tank for storage of settled solids during the critical period
- **Hatchery effluent disposal:** 1) one-acre effluent storage pond with a pump station and wet well<sup>3</sup>; 2) 12-acre land-application treatment spray fields, with associated piping and sprinkler heads, to be used during the critical period; 3) effluent pipeline and discharge outlet at the Wenatchee River to be used during the non-critical period
- **Three septic systems:** One for each residence and one for the hatchery building
- **Piping:** Associated with hatchery and domestic water supply and sanitary piping
- **Roads:** Grading and improvements to the entrance road and river access road
- **Liquid oxygen storage tank:** For ozone treatment
- **Electrical:** 1) electrical service to the site, including underground service to a new on-site utility transformer; 2) underground electrical distribution system to buildings and facilities; 3) control, communication, and alarm systems; 4) one diesel standby generator

Consistent with the EIS, the hatchery would hold and spawn adult coho and incubate up to 1,300,000 eggs to eyed-egg stage (the EIS considered 1,400,000). Of these, approximately 1,000,000 would be shipped to other hatcheries for interim rearing. The remaining eggs would be retained to rear up to 250,000 pre-smolts (the EIS considered a similar number of 200,000 smolts reared full-term), which would later be transported to off-site acclimation ponds.

Hatchery construction is proposed to take place from fall 2018 to spring 2019, and operations would begin in fall 2019.

### ***Public Comments***

To help determine issues to be addressed in this supplement analysis, BPA sent a letter describing the proposal and requesting comments from local landowners; tribes; local, state, and federal agencies; and other interested parties. Two comments were received. In one comment, Ecology recommended that the action minimize impacts to wetlands to the fullest extent possible. As described in this SA, the project would not impact wetlands. In the second comment, a private citizen offered to sell five nearby properties to Yakama Nation for use in future activities.

### ***New Circumstances and Information***

The following analyzes the significance of changes in conditions relevant to environmental concerns and bearing on the Project and its impacts that have occurred since the issuance of the Final EIS in 2012.

**Water Quality:** Construction impacts on water quality would be essentially the same as analyzed in the EIS, since the amount of construction work in and near the river is the same and is limited to the installations of the surface-water intake and discharge pipe in the bank of the Wenatchee River. In addition, the mitigation measures described in the ROD Mitigation Action Plan (MAP) would be implemented.

Operational impacts of the hatchery on water quality are expected to be lower than those described in the EIS because of the addition of the water recirculation features and the land application of effluent. Most of the

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<sup>3</sup> “Wet wells” are holding sumps for gravity-flow sewer systems.

water used in hatchery operations would be recirculated through several types of treatment methods, resulting in very clean discharge water entering the effluent storage pond. A small proportion of the rearing water would undergo further treatment (removal of solids) before flowing into the effluent storage pond. This new approach is expected to provide better treatment compared to the original design, which proposed only settling of solids in a tank before discharge to the Wenatchee River.

During the TMDL critical periods, effluent would be applied on dry land, rather than discharging to the Wenatchee River. Impacts to surface-water quality would be less than those described in the EIS, which proposed direct discharge to the Wenatchee River year round. Impacts to groundwater quality would also be low because plant uptake needs in the spray field would exceed nutrient loads in the effluent by more than fivefold on average; thus, transport to the water table would be minimal. Modeling showed that post-treatment concentrations of total nitrogen would be well below groundwater standards.<sup>4</sup> Likewise, modeling indicated that less than 0.01% of nutrients applied to the spray field would enter the Wenatchee River over a 25-year period, a low effect.

During non-critical periods the effluent would undergo extensive treatment in the hatchery and storage pond, before being discharged to the Wenatchee River. Modeling shows that the cold water, low levels of photosynthesis, and high flows in the river during this period would reduce the potential effect of any nutrients in the effluent. Therefore, a measurable impact to DO and pH in the river is not expected, and the facility would meet surface water quality standards set by Ecology.<sup>5</sup> This effect is consistent with the EIS, which predicted localized water-quality impacts.

Groundwater, surface water, and soils in the spray field would be monitored as described in the engineering report (YN et al. 2016) to meet permit conditions and to prevent potential effects to surface-water and groundwater quality.

**Water Supply:** Impacts to groundwater supply would be lower than predicted in the EIS. The current proposal has reduced water demands substantially - from 1,500 gallons per minute (gpm) to a maximum of 984 gpm - due to the use of water recirculation systems. Tests have determined these amounts are available and would not affect senior water rights holders in the vicinity.<sup>6</sup>

Surface water use would not exceed 2.9 cfs, which is less than the 4.7 cfs described in the EIS. Additionally, the facility would use surface water less frequently than described in the EIS, that is, only as a backup in the event of the loss of groundwater supply, rather than year round.

The consumptive portion of the water right (used for land application of effluent during the TMDL critical periods) would be a maximum of 60 gallons per minute (gpm). This amount is low, amounting to about 4% of the 2.9 cfs (1,301 gpm) water right. Additionally, the consumptive use permit would be predicated on not impacting any senior water rights holders. For these reasons, effects to water supply are expected to be low and consistent with the EIS.

During the non-TMDL periods, water use would be non-consumptive, because all water routed through the facility would return to the river, consistent with the EIS.

The addition of residential groundwater use would not increase ground water use amounts considered in the EIS and would be a fraction of the hatchery facility use. The residential groundwater use is estimated to be 2,000 gallons per day (approximately 500 gallons per day per residence and approximately 1,000 gallons per

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<sup>4</sup> YN et al. 2016: YN, Anchor QEA LLC, TetraTech, Inc., The Conservation Fund (Virginia). 2016. Draft Natapoc Hatchery NPDES Permit Engineering Report, Mid-Columbia Coho Restoration Program. January 2016.

<sup>5</sup> YN et al. 2016.

<sup>6</sup> GeoEngineers. 2013. Natapoc Test Well 1 Construction and Aquifer Testing Report. Table 3.



day for domestic uses at the hatchery). This amount equates to 1.39 gallons per minute, a tiny fraction of the 1,500 gpm proposed in the EIS for overall groundwater use for the entire facility. This amount is well within Ecology's limit of 5,000 gallons per day for domestic use for a group of residences not requiring a permit.<sup>7</sup> Chelan County will assess the legal availability of water for this use.<sup>8</sup>

**Wetlands:** Impacts to wetlands would be lower than predicted in the EIS. There would not be any direct impacts to wetlands, although some wetland buffers would be affected. Two wells and a small portion of the water and electrical lines would be located within the wetland buffer. Impacts within the wetland buffer would be low because the wells would each occupy only 10 square feet of area, and the water and electrical lines would be installed within an existing road, without removal of vegetation. Construction equipment could temporarily encroach a few feet within the buffer. If disturbed, these areas would be restored to their previous condition or better.

Over all, impacts would be lower than described in the EIS, which estimated 1 acre of temporary wetland impacts and 0.03 acres of permanent wetland impacts to wetlands identified as priority habitat by Washington Department of Fish and Wildlife.

**Vegetation and Soils:** Due to the changed location within the Natapoc property, impacts to vegetation would be different from those described in the EIS but would still be considered a low impact. The previous location was in a wetland; the current proposal completely avoids impacts to high quality wetland vegetation. However, approximately 1,400 trees ranging from 10 to 20 inches in diameter would be removed, mostly for the construction of the spray field, which would later be replanted with high-nutrient-uptake plants. The trees that would be removed would consist primarily of lodgepole pine and grand fir; these species are abundant in the area and the effects of removal would be low.

The current proposal would not affect ESA-listed plant species, because none are present at the site.<sup>9</sup> A large tract of priority aspen habitat overlaps the area where the discharge pipelines would be installed. However, the pipelines will be installed within an existing a dirt road, with no impacts to aspens.

Temporarily disturbed areas would be replanted and restored as follows:

- Disturbed river banks would be restored to a natural slope pattern and profile that is suitable for establishment of permanent woody vegetation.
- Disturbed areas would be graded and covered with at least 2 inches of compost and planted or seeded with a native grass seed mix to prevent potential erosion, stem invasion of noxious weeds, and provide wildlife benefit.
- All excess spoils and waste materials would be properly disposed of in compliance with federal, state, and local regulations.
- Plantings would be protected from deer, beaver, rodents, etc.; regularly watered and weeded; properly maintained until established; and replaced as necessary for a period of at least three years to achieve a minimum of 80% survival by the end of the third growing season.<sup>10</sup>

**Fish:** ESA-listed Upper Columbia River spring Chinook (Endangered), Upper Columbia River summer steelhead (Threatened), bull trout (Threatened), and their critical habitat are present in the Wenatchee River in the

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<sup>7</sup> <http://www.ecy.wa.gov/programs/wr/wells/wellhome.html>

<sup>8</sup> [http://www.ecy.wa.gov/programs/wr/comp\\_enforce/gwpe.html](http://www.ecy.wa.gov/programs/wr/comp_enforce/gwpe.html)

<sup>9</sup> BPA. 2015. Mid-Columbia Coho Restoration Program Biological Assessment—Addendum for species under the jurisdiction of the USFWS. July 2015.

<sup>10</sup> YN et al. 2016.

vicinity of the proposed hatchery. Washington State priority fish species in the vicinity include sockeye salmon, Pacific lamprey, mountain sucker, pygmy whitefish, and westslope cutthroat trout.

Because the amount, location, and timing of in-water work has not changed, construction impacts to fish and fish habitat would be consistent with those identified in the EIS and include: potential displacement of fish during in-water construction, temporary flushes of sediment at the conclusion of construction, removal of small amounts of riparian vegetation, and direct handling of fish during salvage operations.

Operational impacts would be less than those identified in the EIS, because of the reduced levels of effluent discharged to the river and the smaller amount of water required for hatchery operation.

In a Biological Opinion dated February 28, 2017, NMFS determined that the action would not jeopardize the continued existence or recovery of listed Chinook or steelhead, or destroy or adversely modify their designated critical habitat.<sup>11</sup> Likewise, in a Biological Opinion dated July 18, 2016, USFWS determined that the project would not jeopardize the existence of bull trout on a range-wide basis and would have only minor effects on their critical habitat.<sup>12</sup>

**Wildlife:** ESA-listed species that could potentially occur in the affected area include the gray wolf and northern spotted owl. In a Biological Opinion dated July 18, 2016, USFWS agreed that construction and operation of the Natapoc site is not likely to adversely affect the northern spotted owl or gray wolf.<sup>13</sup>

Washington State priority species, such as the bald eagle, northern goshawk, harlequin duck, great blue heron, pileated woodpecker, olive-sided flycatcher, mule deer, long-eared myotis, sharp-tailed snake, and western toad could potentially be present in the affected area. As described in the EIS, clearing of vegetation for construction would not alter a substantial portion of habitat for species with large home ranges, but could have impacts to species with smaller home ranges (e.g., western toad). To minimize impacts to wildlife and habitat, the existing road network and existing cleared areas would be used for site access and staging. The type of habitat that would be affected is not considered high quality and is abundant in the area. Noise generated during construction would not be significantly louder than ambient levels. Consistent with the EIS, there would be no significant impacts to priority species.

**Floodplains:** As stated in the EIS, most permanent facilities, such as hatchery buildings, would be constructed outside the 100-year floodplain; however, the surface-water intake and outfall would be located within the floodplain. The area of disturbance for the intake and outfall structures would be small—100 to 200 square feet. Water and electrical lines would be installed within an existing roadway, part of which is in the floodplain; however, these features will be buried and would not cause net fill or obstruction of the floodplain. Other disturbances within the floodplain would be temporary and would not change grades in a manner that would flood properties located upstream or downstream of the project site. Therefore, impacts to floodplains would be low, consistent with the EIS, which predicted no substantial adverse effects on floodplain function.

**Noise/Air Quality/Climate Change:** Effects of construction and operational noise on nearby residences would be similar to and possibly lower than those documented in the EIS. Construction timing and duration would be similar, as would the equipment used. Disturbance during operations could be lower than predicted in the EIS because, with staff resident on-site, daily vehicle travel to and from the site could be reduced. Likewise, the reduced daily vehicle traffic could also incrementally reduce impacts to air quality and climate.

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<sup>11</sup> NMFS. 2017. Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat (EFH) Consultation Mid-Columbia Coho Salmon Restoration Program: Operation and Construction NMFS Consultation Number: WCR-2015-3778. February 28, 2017.

<sup>12</sup> USFWS. 2016. Biological Opinion for the Reinitiation of the Mid-Columbia Coho Restoration Program. July 18, 2016.

<sup>13</sup> USFWS. 2016.

**Visual:** The EIS predicted a low visual impact, likely limited to boaters who might briefly see the surface-water intake or outlet from the Wenatchee River. Since the currently proposed intake and outlet are similarly sized and sited, the impacts would remain the same.

**Cultural Resources:** In a letter dated October 8, 2015, the Washington State Department of Archaeology and Historic Preservation concurred with BPA's determination of No Historic Properties Affected with the stipulation for professional archaeological monitoring during construction. This finding is consistent with the cultural resources impact analysis in the EIS.

**Findings**

This supplement analysis finds that the potential impacts from the construction and operation of the Natapoc Hatchery have been examined, reviewed, and consulted upon and are similar to those analyzed in the Mid-Columbia Coho Restoration Program EIS, ROD, and applicable biological assessments and biological opinions. There are no substantial changes in the proposed action and no significant new circumstances or information relevant to environmental concerns bearing on the proposed action or its impacts within the meaning of 10 CFR § 1021.314(c)(1) and 40 CFR §1502.9(c). Therefore, a supplemental EIS is not needed.

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May 30, 2017

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