

**Response to Comments on the  
Draft Clean Water Act § 401  
Certification, Draft Stipulation  
and Implementation  
Agreement, and Proposal to  
Grant Temperature Waiver for  
the Hells Canyon Complex  
Hydroelectric Project**

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**(FERC Project No. P-1971-079)**

State of Idaho  
Department of Environmental Quality  
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## Executive Summary

On December 14, 2018, the Idaho Department of Environmental Quality (DEQ) published a public notice seeking comment on a draft Clean Water Act § 401 water quality certification for the relicensing of the Idaho Power Company's (IPC's) Hells Canyon Complex (HCC) hydroelectric project (FERC Project No. P-1971-079). At that time, DEQ also solicited public comment on a draft Stipulation and Implementation Agreement between IPC and the States of Idaho and Oregon, as well as DEQ's proposal to grant IPC's request to waive or raise certain temperature criteria pursuant to IDAPA 58.01.02.070.07. The public comment period closed on February 12, 2019.

This Response to Comments provides a summary of significant comments and provides corresponding DEQ responses. Comments were received from the following individuals, and are listed below:

- State of Washington Department of Ecology (WADOE), comments received February 12, 2019 (Comment 1)
- Mentor Law Group on behalf of the Burns Paiute Tribe, comments received February 12, 2019 (Comment 2-5)
- Parsons Behle & Latimer on behalf of the Idaho Recreation Council, comments received February 12, 2019 (Comment 6)
- Upper Snake River Tribes Foundation, Inc. (USRT), comments received February 1, 2019 (Comment 7-15)
- U.S. Fish and Wildlife Service-Idaho Fish and Wildlife Office (USFWS), comments received February 11, 2019 (Comment 16-22)
- The Shoshone-Bannock Tribes, comments received February 12, 2019 (Comment 8, 9, 23-28)
- Riverside Irrigation District, LTD. (RID), comments received December 28, 2019 (Comment 29)
- National Oceanic and Atmospheric Administration-National Marine Fisheries Service (NMFS), comments received February 12, 2019 (Comment 30-37)
- Nez Perce Tribal Executive Committee, comments received February 12, 2019 (Comment 38-53)
- Idaho Water Users Association, comments received February 12, 2019 (Comment 54)
- Idaho Power Company (IPC), comments received February 12, 2019 (Comment 55-65)
- Idaho Conservation League, comments received February 11, 2019 (Comment 66-72)
- The Shoshone-Paiute Tribes of the Duck Valley Indian Reservation, comments received February 12, 2019 (Comment 73-76)
- Columbia River Inter-Tribal Fish Commission, comments received February 12, 2019 (Comment 77-98)
- David Ray (Comment 99)

## Comments received during Public Notice

### 1. Comment (WADOE p.2&3):

We continue to be concerned about the attainment of Washington Water Quality Standards that apply downstream of the HCC. Recognizing that water temperatures may often be naturally warmer, the Snake River temperature criteria provide for a 0.3°C warming due to anthropogenic heat increases when natural conditions exceed 20.0°C. DOE is skeptical that upstream mitigation program efforts will result in attainment of temperature standards at the Washington border.

Idaho's latest draft certification relies on a new Brownlee operational component proposed by IPC to mitigate for fall temperatures predicted to exceed 16.5°C. In the technical memorandum estimating the downstream effects of increased flow operations, IPC notes that increased quantity of water could result in warmer conditions below the Salmon and Clearwater rivers. These estimated effects are concerning to Washington and the implication it may have on increased warming and compliance with our Snake River temperature standards.

In order to ensure that IPC and Idaho have the tools necessary to adaptively manage temperature in the Snake River, we request the final 401 certification include the following:

- A condition that the Temperature Management and Compliance Plan include a thorough peer reviewed analysis of the impacts that the Brownlee operational component will have meeting WA temperature criteria at the state border as well as downstream of the Clearwater confluence.
- A condition that IPC submit for Idaho's approval a data summary and report of the impacts to downstream temperatures in the year following the use of the Brownlee Dam operational alternative.
- Condition adaptive management measures up to and including a requirement to implement the temperature control structure alternative (should modeling and analysis demonstrate that WA's temperature standards are not met).

### DEQ Response:

DEQ believes it is premature to ask IPC for additional monitoring requirements until we know and can characterize the HCC's impact. IPC is not the sole source of heat to the riverine system and it will require a collective effort to reduce thermal loading inside the watershed. Because temperature is a non-conservative pollutant, DEQ expects thermal dissipation to occur as water flows 73 miles downstream from the Hells Canyon Dam to the Washington state border. DEQ will publish reports from IPC regarding implementation of the Brownlee Dam Operational alternative.

DEQ does not believe it is reasonable to ask IPC to monitor temperature farther than the Idaho-Washington border. The Idaho water quality standards, 58.01.02.070.08 Protection of Downstream Water Quality, is the basis for DEQ requiring the Anatone location as the surrogate for the pour point. The USGS gage on the Snake River near Anatone is a reasonable location for monitoring the temperature of the Snake River for compliance with Washington's water quality standards.

In the event that Washington's temperature criteria is not met at the Idaho-Washington border, it will become necessary to model the effects of the HCC to determine what proportion of the excess heat load can be attributed to the HCC versus other sources of excess heat load in the Snake, Salmon, and Clearwater basins and other tributaries. IPC is not responsible for mitigating the entirety of excess heat load in the Snake River.

## **2. Comment (Burns Paiute Tribe p.3&4):**

The proposed Certification is inconsistent with the Upper Snake River Tribe's (USRT) comprehensive plan for Snake River fisheries. We are requesting that you include the Hells Canyon Complex Fisheries Resource Management Plan as part of the terms and conditions of the certification. We believe the Plan complements IPC's proposed Snake River Stewardship Program in meeting its CWA 401 certifications by improving habitat conditions in the mainstem Snake River to support the persistence of several aquatic indicator species. The Tribe submitted the Plan to FERC as a comprehensive plan for restoring anadromous fish above HCC. The Tribe asserts that any license issued by FERC for the project and any water quality certification for the Hells Canyon Project must be consistent with the Fisheries Resource Management Plan.

### **DEQ Response:**

Thank you for sharing the HCC Fisheries Resource Management Plan. This comment is not germane to the 401 certification. Any introduction or reintroduction of anadromous fish populations to Idaho waters above Hells Canyon Dam without the express approval of the State of Idaho is prohibited. Idaho Code §§ 67-818(5) and 67-6302; Idaho State Water Plan, Policy 2B. Please also see the Response to Comment #7.

## **3. Comment (Burns Paiute Tribe p.4):**

The proposed Settlement Agreement precludes reintroduction actions in any tributary to the Snake R. outside of the States' unilaterally-defined priority of Pine Creek. In contrast, the Plan identifies several tributaries important to multiple fishery managers as having both suitable habitat for reintroduction and accessible locations to both release adults and trap downstream migrating smolts. All of the tributaries identified in the Plan are comparable in reintroduction feasibility to Pine Creek, and some – such as the Malheur R. – hold substantial cost share opportunities.

### **DEQ Response:**

The Stipulation and Implementation Agreement for the Hells Canyon Hydroelectric Project (Agreement) is a contract between the identified parties only. The terms of the Agreement speak for themselves. The Agreement does not prohibit any party from taking action, including in tributaries other than Pine Creek, as long as the action is consistent with that party's commitments in the Agreement. Non-parties are not bound by the Agreement, and thus the Agreement does not preclude any non-party from taking any action.

#### **4. Comment (Burns Paiute Tribe p.4):**

The proposed Settlement Agreement fails to provide a supply of Snake R. salmon, or funding for increased production of an alternative stock source, for the Tribe's ceremonial fishery on the Malheur R. The Agreement does not require sufficient additional production at Snake R. hatcheries to meet the fishery needs of the Burns Paiute Tribes.

#### **DEQ Response:**

See Response to Comment #3.

#### **5. Comment (Burns Paiute Tribe p.5):**

The proposed certification is inconsistent with Endangered Species Act recovery efforts for Snake River fall chinook. Regulations under the ESA clearly state that a recovery plan must include at least two evolutionarily-significant stocks. A new license for the [HCC] project based on a certification and agreement that precludes fish passage would violate the ESA, and the certification itself would violate the Oregon Endangered Species Act.

#### **DEQ Response:**

The 401 certification is not an Endangered Species Act (ESA) recovery plan; the certification provides reasonable measures for compliance with water quality standards and implements the approved Total Maximum Daily Load (TMDL). The Federal Energy Regulatory Commission (FERC) and other federal agencies will address ESA-related issues. The certification does not prevent federal agencies from making determinations associated with ESA.

#### **6. Comment (Idaho Recreation Council p.2):**

To the extent that the minimum flows included in the proposed operations are adequate for safe navigation for recreational interests in the Snake River below Hells Canyon Dam, [the Idaho Recreation Council] supports these minimum flows as part of the proposed operations and encourages DEQ to issue a final certification for this Project.

#### **DEQ Response:**

Thank you for your comment. The fall Chinook Salmon stable flows program, which requires 8,500 cfs up to 13,500 cfs river flow, is part of the 2003 Final License Application and the FERC Staff Alternative in the Federal Environmental Impact Statement (FEIS) (FERC 2007). The maximum daily fluctuation flow of 10,000 cfs is part of the 2003 Final License Application and was not amended by FERC. Please see IPC's 401 application Section 4.5 (page 20) and 401 certification Condition I and Exhibit A.

#### **7. Comment (USRT p.2):**

Without a means of fish passage, HCC continues to block the river of anadromous fish species above the Complex, effectively eliminating them from their historic spawning grounds upstream of Hells Canyon Dam.

## **DEQ Response:**

DEQ acknowledges that neither the 401 certification nor the Agreement call for anadromous fish passage above Hells Canyon Dam. Rather, the Agreement recognizes that the HCC straddles the Idaho-Oregon border and that any proposal to introduce or reintroduce anadromous fish above Hells Canyon Dam implicates the State of Idaho's sovereign interests. In 2017, the Idaho Legislature adopted House Joint Memorial No. 2, specifically disapproving and opposing any action to require the passage and introduction or reintroduction of salmon or steelhead above Hells Canyon Dam, including the fish passage provisions contained in the Oregon Department of Environmental Quality's 2016 draft 401 certification for the HCC (2017 Idaho Sess. Laws 876–79). Any introduction or reintroduction of anadromous fish populations to Idaho waters above Hells Canyon Dam without the express approval of the State of Idaho is prohibited (Idaho Code §§ 67-818(5) and 67-6302; Idaho State Water Plan, Policy 2B). Idaho's fishway statute does not apply to the Hells Canyon hydroelectric project (Idaho Code § 36-906(a)). The 401 certification and Agreement are consistent with Idaho law and policy on the passage, introduction, or reintroduction of anadromous fish above Hells Canyon Dam.

In addition, reestablishing spawning populations of anadromous fish in the mainstem of the Snake River above Hells Canyon is currently impracticable. As explained in the ESA Recovery Plan for Snake River Fall Chinook Salmon (*Oncorhynchus tshawytscha*) (NMFS 2017), mainstem habitat in the Snake River above the HCC is currently too degraded for salmonid spawning. Artificial redd studies conducted by IPC and described in its Section 401 Water-Quality Certification Application (IPC 2018) support this conclusion. Further, NMFS has determined that reintroduction of fall Chinook Salmon above Hells Canyon Dam, while potentially beneficial to the species if spawning habitat improves, is not necessary to meet delisting criteria. However, DEQ expects the Snake River Stewardship Program and other mitigation measures required by the certification—such as the Riverside Operational Water Quality Improvement Project and the Grand View Sediment Reduction Program—will, if properly implemented, improve water quality and habitat availability of the Snake River above and below the HCC. These improvements may result in suitable spawning conditions in the future.

## **8. Comment (USRT p.2, Shoshone-Bannock Tribes p.5):**

To fully mitigate for the continuing existence of the HCC within the next license period, USRT proposes to augment existing hatchery mitigation with new production capacity and reestablishment of harvestable populations into suitable or restored habitats.

## **DEQ Response:**

Additional hatchery production is a component of the Agreement but is beyond the scope of DEQ's section 401 certification. We encourage Tribal fisheries programs to work with the states' fisheries programs and with IPC.

## **9. Comment (USRT p.3, Shoshone-Bannock Tribes p.6):**

It is shameful that the settlement agreement excludes USRT's member tribes. USRT's member tribes remain concerned with the conditions placed on the states through this settlement agreement to refrain from effectively commenting on any future evaluation through the ESA or NEPA. USRT understands that other parties, such as the USFWS and NOAA Fisheries, retain their respective authority under multiple acts, such as the ESA, NEPA and the Federal Power Act, to provide comments. The Tribes have no avenue for formal consultation on the proposed actions for Chinook salmon and summer steelhead, with the entities proposing this settlement agreement.

### **DEQ Response:**

DEQ disagrees that the Agreement prevents the parties from effectively commenting on future evaluations under the ESA or the National Environmental Policy Act (NEPA). Section D.2 states that “[n]othing in this Agreement shall be construed as limiting OR’s or ID’s advocacy that is related to any aspect of its sovereignty or state policies, nor any party’s advocacy in opposition” and specifically allows for comments on future evaluations under NEPA, ESA, or the Federal Power Act. Please also see the Response to Comment #3.

## **10. Comment (USRT p.4):**

USRT would remind the states of the Staff Conclusion cited within the HCC Federal Environmental Impact Statement (FEIS). Specifically, it outlines the following:

*104S. In consultation with ODFW, IDFG, FWS, NMFS, and interested tribes, develop and implement a plan to use surplus adult hatchery spring Chinook salmon and steelhead to:*

- (1) provide marine nutrients and improve forage for bull trout in tributaries within the project area;*
- (2) facilitate the evaluation of spawning success, egg viability and survival, and smolt outmigration and survival in Pine Creek; and*
- (3) support ceremonial, subsistence, and recreational fisheries in select tributaries to the Snake River, including the Salmon River basin where appropriate.*

USRT believes that the states settlement agreement has ignored the Staff Conclusion in the FEIS and actively avoided participating in collaborative planning development with USFWS, NOAA, and USRT member tribes, specifically in the development of FRMP.

### **DEQ Response:**

We disagree that Idaho has ignored the FEIS or avoided collaborative planning. Idaho actively participated in the Hells Canyon Fisheries Resources Advisory Group for several years with the full participation of Oregon, USFWS, NMFS, Shoshone-Bannock Tribes, Shoshone-Paiute Tribes, Burns Paiute Tribe and USRT members. Idaho actively participates in the Columbia Basin Partnership Task Force, a special task force organized in 2017 under NOAA Fisheries' Marine Fisheries Advisory Committee. The Task Force consists of representatives from federal agencies, states, tribes, port and utility districts, commercial and recreational fishery organizations, waterways and water user organizations, and other interests. The Task Force is

charged with making recommendations on common goals and helping to define a shared path to long-term salmon recovery. The Task Force will recommend a shared vision for Columbia Basin salmon and quantitative goals to meet conservation needs and provide harvest opportunities.

The Agreement (Attachment A, Paragraph C) refers to coordination with appropriate management partners, including but not limited to the Nez Perce Tribe, for determining overall annual Hells Canyon trapping operations and fish allocations outside of the Agreement “to help meet multiple objectives, such as mainstem fisheries, Rapid River Hatchery broodstock, Bull Trout movement, tribal subsistence and state tributary adult placement objectives.” The Agreement (Attachment A, Paragraph E) refers to Oregon Department of Fish and Wildlife’s (ODFW) coordination with management partners for specific annual work plans for placement of adult spring Chinook Salmon and summer steelhead into Pine Creek. Additionally, IPC’s FERC License Application proposes supplementing the marine-derived nutrients into Wildhorse, Indian Creek, and Pine Creek to benefit Bull Trout.

### **11. Comment (USRT p.4):**

Years of WQS violations by IPC should be met with stringent terms and conditions, rather than nebulous requirements that allow IPC up to 30 years to implement WQS. The conditions placed by the DEQ’s in this Certification allow for up to an additional 30 years for IPC to rectify WQS violations attributed to the HCC. Water quality violations have already been ongoing for an extensive period, and to allow an additional 30 years is damaging to the resources.

In the TMDL, DEQ determined that the HCC was in violation of WQS related to nutrients, dissolved oxygen, salmonid spawning temperature, and total dissolved gas. Additionally, since 2004, mercury/methylmercury has been determined to be impairing cold water aquatic life and secondary contact recreation. USRT would like DEQ to detail how the permit conditions, including timelines and projected improvements in temperature, dissolved oxygen, excessive nutrient loads, and dissolved gas will be protective of ESA-listed species in the near-term as the Certification allows up to 30 years for IPC to rectify WQS violations attributed to HCC.

### **DEQ Response:**

The Snake River TMDL has always contemplated long-term (up to 70 years) implementation timelines for water quality improvements. Holding the expectation for instantaneous improvements based on the goals set forth in IPC’s FERC application is unrealistic. DEQ’s understanding is that fall Chinook Salmon spawning has shown increases in overall fish numbers in the last ten years, partially in response to IPC’s winter operational changes which preserved minimum flows. The 401 certification contains interim milestones guiding IPC to work toward water quality improvements consistent with the TMDL.

### **12. Comment (USRT p.5):**

The proposed Certification will cause temperature impacts to listed species. Under the Temperature Management & Compliance Plan, IPC will be given 15 years to attain half, and 30 years to attain all their thermal benefits at the inflow of the HCC from the Snake River Stewardship Program (SRSP). Because of higher water temperatures observed above Hells

Canyon in 2015, 2016, and 2017, we are increasingly concerned about the effectiveness of this temperature control program to provide any lasting water temperatures less than 16°C below the dam. Chinook salmon and bull trout are already imperiled, allowing IPC to continue to violate temperature criteria for decades and will only lead to further endangerment of the species. Further, there seems to be little consideration of the impacts of climate change on water temperatures upstream, within, and downstream of the HCC.

Chinook salmon are expected to be extremely vulnerable to climate change due to an increase in surface water temperatures. USRT does not believe that the 30-year timeline for the reduction in temperatures allotted to IPC will sufficiently protect the species.

### **DEQ Response:**

Please note that in 2017 increased temperatures were not observed above Hells Canyon. Higher flows were observed in the Snake River due to high snow runoff, but this did not result in higher water temperatures, also salmonid spawning temperature requirements were met at the start of the 2017 spawning season.

Please see the Response to Comment #11 above in regard to interim milestones required by the 401 certification.

The Fall Chinook Recovery Plan has demonstrated improvements in population numbers for ESA-listed salmon in the HCC (NMFS 2017). The 2017 Mid-Columbia Implementation Plan for Bull Trout recommends maintaining and improving water quality in the mainstem Snake River, which is the goal of the 401 certification and other recovery efforts. However, the Bull Trout Plan lists this as a recommendation (p. C-268), not a requirement necessary for Bull Trout recovery efforts (USFWS 2015).

DEQ has built adaptive management into the majority of the 401 certification parameters, including those relating to Brownlee Reservoir temperature operations that are specifically intended to address warmer years. Additionally, we have the ability to modify the certification in the future for project changes that may affect water quality or if Idaho water quality standards are amended. Because we cannot predict mitigation requirements to address climate change, DEQ has reserved authority to adaptively address climate change in this certification.

### **13. Comment (USRT p.6):**

IPC has proposed restoration work on Snake R. tributaries. We have significant concerns that the thermal benefits IPC is claiming may not be realized. Much of any thermal reduction achieved will be lost in the open reservoir, potentially having little impact on the Snake River downstream of the Hells Canyon Dam. While USRT questions the reasonable assurance standard that the SRSP will provide the thermal benefits required to meet temperature WQS requirements, we have even greater doubt that there is reasonable assurance that IPC can implement the SRSP due to landowner resistance. More research is needed to definitively support the temperature range.



**DEQ Response:**

Reservoir, river, and tributary attenuations were factored into the calculation of thermal benefits of IPC's proposed restoration projects. This is the best information available at this time to address crediting thermal benefits as a result of project implementation. No commenter has put forward an alternative to the thorough analysis presented by the Freshwater Trust as part of IPC's certification application (IPC 2018, Exhibit 7.1-5). . That analysis demonstrates sufficient thermal benefit supply to achieve the cumulative thermal exceedance requirements set in the 401 certification. Additionally, the certification allows for adaptive management, including the implementation of a "Plan B" temperature control structure if appropriate, in the event that supplemental or alternative measures are necessary. This adaptive management framework contributes to DEQ's reasonable assurance that thermal requirements will be achieved.

**14. Comment (USRT p.7):**

USRT does not support Plan B (hypolimnetic pumping system). The USGS Mercury Study will take an estimated 10 years. We question the DEQ's "reasonable assurance" that Plan B is a viable option to the Snake River Stewardship Program in absence of final conclusions from the USGS Mercury Study. The Tribes request interim standards be issued with the certification and a reasonable metric for reducing the overall production of methyl-mercury within the project.

**DEQ Response:**

USGS is completing new studies of mercury methylation in western reservoirs, suggesting that the process can be dependent on factors different from those traditionally modeled in other regions of the United States. Until we better understand the methylation process in the HCC and have accounted for all of the unique factors contributing to the process, it is premature to regulate IPC based on an interim standard. Once USGS completes their basic research, the 401 certification sets up timelines to implement a mitigation strategy (see certification sections VIII.B - D).

**15. Comment (USRT p.8):**

The HCC project area includes waterbodies that are not currently meeting multiple designated beneficial uses including salmonid rearing and spawning, resident fish and aquatic life, anadromous fish passage, and contact recreation. Additionally, USRT and its member tribes assert that salmonid spawning is an unrecognized use upstream of Hells Canyon Dam, which should be protected.

**DEQ Response:**

Several waterbodies upstream of the HCC are designated for salmonid spawning. DEQ protects for existing uses in the waterbody and, if we have information to support that salmonid spawning is an existing use, we will incorporate that into our Integrated Report.

DEQ encourages USRT or any other entity to submit any data or reports that indicate salmonid spawning is an existing use upstream of HCC or within tributaries to ensure that we are appropriately applying the criteria necessary to protect these existing uses.

## **16. Comment (USFWS p.2):**

Since Brownlee is the largest receiving body of water for runoff from the Snake River Plain, it is likely that the sediments are not capturing Snake River contaminants but also processing them through bacterial processes in the upper sediment strata under anaerobic conditions. These processes are, in part, subject to further study by USGS for methylation of mercury. It is important that a Sediment Management Plan for Brownlee Reservoir be developed including further monitoring of sediments, cycling processes and evaluation of the consequences of potentially disturbing those processes if Alternative Measures Plan B, as currently proposed, is implemented. We recommend the development of a Brownlee Sediment Management Plan to help inform any downstream management decisions, including potential actions in ESA-designated bull trout critical habitat.

### **DEQ Response:**

The evaluation conducted by the United States Geologic Survey (USGS) should include the role that sediment plays in mercury transformation and methyl mercury production in Brownlee Reservoir. DEQ is providing review and direction to USGS in their mercury work by approving the USGS Mercury Scope of Work: Assessment of Mercury Cycling in Brownlee, Oxbow, and Hells Canyon Reservoirs (USGS 2019). This could potentially include a Sediment Management Plan as a required mercury action and may also expand beyond mercury to look at all pollutants tied to sediment in Brownlee Reservoir.

## **17. Comment (USFWS p.3):**

Drafting of Brownlee Reservoir is a new addition to the draft certifications, and will be implemented to address temperature compliance with existing CWA site-specific criteria during late summer and fall periods. Drafting reduces residence times of cooler inflowing fall water by drafting warmer epilimnetic water earlier in the year to provide the cooler water when needed downstream. The Temperature Management Plan monitoring during Brownlee Reservoir drafting needs to be thorough. As drafting to as low as 1990 feet (mean sea level) from 2077 feet may be needed in some years, monitoring of temperature, DO, contaminants and potential methylmercury transport downstream into bull trout critical habitat during these operations is recommended.

### **DEQ Response:**

We agree with the concern that additional water quality monitoring should take place during years when Brownlee Reservoir is being drafted for fall temperature control. The final 401 certification includes temperature monitoring conditions for IPC to implement, which will be detailed in the Monitoring Plan. These items include:

- a) Locations suitable to characterize the quality of the discharge; and

- b) Constituents monitored for the Brownlee operational component include temperature. Mercury and methylmercury monitoring is part of the mercury investigation.

Temperature monitoring will take place as outlined in section II.D of the final certification. The 2019 Scope of Work for the USGS Assessment of Mercury Cycling in Brownlee, Oxbow, and Hells Canyon Reservoirs includes monitoring for the following constituents: mercury, methylmercury, suspended particulate matter, DOC, anions, cations, nutrients and oxygen isotopes. Monitoring is scheduled year-round, every two weeks. Additional water column, primary productivity, fish, and biological monitoring is scheduled in the USGS 2019 Hells Canyon Scope of Work.

### **18. Comment (USFWS p.3):**

While there are engineered drawings provided in the CWA applications, no operational descriptions, monitoring plans, or analysis of effects to ESA-listed species are included. However, since implementation of Plan B may not occur, the Service will not consider Plan B part of the action at this time.

#### **DEQ Response:**

DEQ also expects much more detail to be developed, should the Plan B action become necessary.

### **19. Comment (USFWS p.3):**

In light of the proposed mitigation measures and because of the large nutrient load entering the reservoir, it is unlikely that early-license DO level requirements will be adequate for ESA-listed bull trout and/or its critical habitat designated in Oxbow, the bypass, and Hells Canyon Reservoirs at certain times of the year. We would expect bull trout returns to both reservoirs after mid-Oct, especially as the BTPP is implemented going forward. Implementation of DO enhancement measures should increase DO over existing conditions in Oxbow and Hells Canyon reservoirs, and effective monitoring will be necessary to determine if DO levels are adequate for bull trout needs at those times of year.

#### **DEQ Response:**

The Snake River–Hells Canyon TMDL establishes accountability for water quality constituents with each discharger named in the TMDL. This is a shared responsibility throughout the watershed. IPC is responsible for its contribution to dissolved oxygen conditions as outlined in the TMDL. The final 401 certification (section IV) requires IPC to monitor for and supplement dissolved oxygen. Idaho Power has already begun addressing upstream dissolved oxygen (DO) conditions through early implementation of the Riverside Operational Water Quality Improvement Project, and section III of the final 401 certification requires implementation of this and other upstream DO measures.

## **20. Comment (USFWS p.4):**

Both DEQs require a Methylmercury Report and Methylmercury Management Plan (MMP). The Methylmercury Report will discuss the role of the HCC in methylmercury production plus results from a Methylmercury Predictive Model (Model) as outlined for the HCC. It is unclear if additional monitoring of biota in the Snake River downstream of Hells Canyon Dam will occur for completion of the Model. In addition, the MMP should be expanded to not only include options for managing methylmercury production, but also how managing methylmercury loads through the HCC under various operational scenarios by season and water year type that may affect downstream biota.

### **DEQ Response:**

Fish, macroinvertebrate, and microbiology samples are being collected by the USGS to assess mercury fate, transport, and methylation in the HCC. These biological samples are being used to develop the predictive model of HCC operations effects on mercury and methyl mercury.

Condition VIII.C of the final 401 certification states that IPC shall run a series of methyl mercury management scenarios to evaluate the project's effect on methyl mercury production and transport. When Brownlee drawdown occurs, IPC shall evaluate and specify the scenario that should appropriately model mercury transport, which will encompass all operations incorporated under the certification/license.

## **21. Comment (USFWS p.4):**

The States of Idaho and Oregon have reached a proposed Agreement on salmon passage within the HCC. We note the development of the Agreement did not include Tribes, Federal agencies and other stakeholders involved with fish management activities as part of HCC relicensing activities. We have some concerns that the proposed Agreement contains language that may potentially block the Parties from engaging in further fish passage activities such as those currently described in the FERC FEIS. For example, upstream tribal fish passage options and plans for surplus adult hatchery fish have previously been discussed and were contained via a Staff Alternative in the current FERC FEIS. The Service suggests that a larger stakeholder discussion on these issues occur as the FERC process of addressing the current 2007 FEIS proceeds.

The Service also has some concerns about the lack of specificity in the Agreement that has implications for the upcoming consultation under section 7 of the ESA. If the Agreement is accepted by FERC, it becomes part of the Federal licensing action, and thus subject to consultation procedures. In the Service's BO, we will analyze any action that is part of the larger licensing action. In this case, salmon placement may affect the bull trout or designated bull trout critical habitat, and may cause take of the bull trout.

### **DEQ Response:**

The FEIS (FERC 2007) states on page 620:

In consultation with ODFW, Idaho Fish and Game (IDFG), USFWS, NMFS and interested tribes develop and implement a plan to use surplus adult hatchery spring chinook salmon and

steelhead to: (1) provide marine nutrients and improve forage for bull trout in tributaries within the project area; (2) facilitate the evaluation of spawning success, egg viability and survival, and smolt outmigration and survival in Pine Creek; and (3) support ceremonial, subsistence, and recreational fisheries in select tributaries to the Snake River, including the Salmon River basin where appropriate.

The FERC Staff recommendation articulated the following concerns regarding reintroduction:

We recognize that a comprehensive plan is not always needed before implementing measures to restore anadromous fish to areas upstream of a project, and that a proposal to restore passage to a small number of tributaries would not require regional consensus. We also recognize that applicants and stakeholders are often able to attain some degree of consensus and address restoration issues as part of the licensing process. However, we maintain that in this case, there is substantial uncertainty regarding the feasibility of restoring anadromous fish to areas upstream of the project, and that there are substantial stakeholder concerns that would need to be considered and addressed before even a limited reintroduction program could be undertaken. Accordingly, we maintain that until such a plan is developed, it would not be prudent to advocate for the reintroduction of steelhead, spring Chinook salmon, or fall Chinook salmon upstream of the Hells Canyon Project.

The Agreement is consistent with the FEIS and the FERC staff recommendation. Attachment A to the Agreement provides measures for evaluating spawning success in Pine Creek and using adult salmon and steelhead trapped at Hells Canyon Dam and transported to upstream fishing areas to support ceremonial, subsistence, and recreational fisheries. The States of Oregon and Idaho will continue to conduct in-season coordination with respect to adult management at the Hells Canyon Trap, including designating fish for transport to offsite fishing areas. The Agreement does not foreclose the opportunity to continue to participate in discussions with tribes and other interested parties regarding the potential for future options for restoration upstream of the project and sets a deadline for completion of IPC's evaluation for feasibility of upstream and downstream passage of non-ESA listed anadromous fish at the project.

The Agreement specifically addresses both Idaho's agreement to, and IPC's commitment to, evaluating the effect of outplanting adult steelhead and Chinook Salmon in Pine Creek and support for ceremonial, subsistence and recreational fisheries as agreed to by the States of Idaho and Oregon. With respect to marine-derived nutrients for Bull Trout, the distribution of carcasses from the Pine Creek adult outplanting will help inform how carcasses become distributed throughout the system. Also of note is the Idaho Power License Application contains provisions for supplementing the marine derived nutrients into Wildhorse, Indian Creek and Pine Creek to benefit Bull Trout. Additionally, the parties do not intend to seek FERC's acceptance of the entire Agreement. Section E of the Agreement describes what the parties will present to FERC for its consideration.

## **22. Comment (USFWS p.5):**

The Service supports Snake River macroinvertebrate and algae monitoring because these species are strong indicators of riverine health. The objectives, methods, and timelines for such an effort have not been fully developed in the CWA application. Therefore, we provide the following recommendations for actions to be included in any post-license monitoring efforts:

- 1) selection and monitoring of adjacent "control" monitoring sites;

- 2) monitoring of sensitive taxonomic groups not typically included as macroinvertebrates (typically captured as BPT); and
- 3) monitoring of taxa unique to the Snake River-Hells Canyon system.

Two or more of the following tributaries should be considered for their use as reference sites for additional monitoring components which we have proposed (Salmon, Grande Ronde, Imnaha, and Wildhorse rivers).

Additionally, gastropods, mussels and lamprey should be included in long-term monitoring as well as the long-term status of the rare hydrobiid snail in Hells Canyon.

### **DEQ Response:**

Please see the Response to Comment #20.

### **23. Comment (Shoshone-Bannock Tribes p.3):**

The Tribes are not comfortable moving forward with the proposed criteria for temperature regimes below HCC without adequate assurances that the best available science has actually reviewed potential impacts in the study area (not a laboratory setting). While it is common to merge studies together that cover the same general topic areas, it may be inappropriate to substitute this data for research that is targeted at the referenced spawning reach on the Snake River. It should not be an acceptable practice to provide a certification for HCC based on the highest optimal range for cold-water biota without requiring significant on-site mitigation measures.

Other interested parties have continually noted a significant issue with the proposed temperature regimes in this application, and have requested specific compliance with the clear letter of the law in Oregon. One specific concern that has been noted is that the temperature regime proposed by IPC, under the best circumstances, is not any more protective of the listed stocks than the existing regime and in some instances may actually increase associated impacts to those stocks. IPC has proposed to increase the temperature thresholds at the point of compliance by proposing a variance of .3 degrees Celsius in spite of clear legal guidance to the contrary from Oregon and Idaho. It is understandable that a private entity would seek to maximize the profitable use of the facility with as little obligation as possible; however many of the interested parties would like to see some level of adherence to the principles of sound resource management and law.

### **DEQ Response:**

Both states have 13°C criteria that are applicable to the Hells Canyon reach of the Snake River. The State of Oregon has a human use allowance of 0.3°C, which is not contrary to Idaho law. Pursuant to IDAPA 58.01.02.070.07, DEQ will issue a waiver that is equivalent to Oregon's 0.3°C human use allowance. In addition, a human use allowance for temperature was added to the Idaho water quality standards in 2019 (IDAPA 58.01.02.401.01.d), and is currently under review by EPA (see rule making docket no. 58-0102-1803).

The required thermal benefits in section II.B of the final 401 certification are based on Idaho's salmonid spawning temperature criterion of 13.0°C and the DEQ Director's authorization of a 0.3°C waiver pursuant to IDAPA 58.01.02.070.07. Through the final 401 certification, DEQ is requiring extensive temperature mitigation measures, based on the 13°C criterion and the 0.3° waiver. In

addition, IPC has volunteered to implement the Brownlee operational component in order to mitigate for hotter temperatures, and the final 401 certification requires this measure to be implemented as well (section II.C.6).

#### **24. Comment (Shoshone-Bannock Tribes p. 3&4):**

Pollution trading methods outlined in IPC's application are uncertain to occur and even if fully implemented would not have an appreciable impact on temperatures below the facility. Restoring river processes is an important component of effective natural resource management and it is understandable that IPC would offer off-site mitigation measures to Idaho & Oregon in an effort to obtain a certification for the HCC. It is germane to point out that the bulk of water quality impacts in the Snake River system are related to the development of the contemporary hydrosystem. It is also important to note that even under the best scenarios, any realized benefits would be naturally attenuated upstream of the HCC.

#### **DEQ Response:**

The Snake River-Hells Canyon TMDL established IPC's share of responsibility for temperature exceedances. The DEQs are implementing the TMDL through the issuance of 401 certifications.

Please see Response to Comment #13.

#### **25. Comment (Shoshone-Bannock Tribes p.4):**

The proposed certification would allow total phosphorus inflow levels to remain at 70 mg/L which is well above reasonable thresholds considering that algal blooms are already occurring seasonally throughout the HCC. The Tribes request that measures requiring a reduction of total phosphorus within the project be included as a component of the certification. Based on our review of outside standards, a reasonable target for the HCC would be 30 mg/L within the project (inflow & seasonally).

#### **DEQ Response:**

Please note, the certification proposes total phosphorus inflow levels at 70 µg/L. The current limits in this certification reflect wasteload allocations that have been set by EPA approved TMDLs which are based on Idaho's water quality standards. Phosphorus originates from multiple sources inside the watershed. The effort to reduce phosphorus loading is not solely the responsibility of IPC. This target suggested by this comment conflicts with the approved Snake River-Hells Canyon TMDL.

#### **26. Comment (Shoshone-Bannock Tribes p.5):**

Current dissolved oxygen levels associated with the HCC do not meet WQS and should be addressed. Consideration of DO is directly related to proposals for cold water augmentation structures because the source of cold water within the HCC comes primarily from a stratified level of the pools with near-zero concentrations of DO. Aeration structures can be installed

within the HCC, particularly at Brownlee Dam, for reasonable costs to reduce overall downstream impacts.

**DEQ Response:**

The final 401 certification requires (section IV.A) requires IPC to install and operate distributed aeration systems at Brownlee Powerhouse. If the cumulative measures put into the 401 certification for Brownlee Dam and ROWQIP aren't sufficient, the final 401 certification (section IV.D) requires IPC to propose alternative measures. In the event alternative measures necessary IPC's certification application (section 7.2.24) indicates IPC may to explore aeration at the Hells Canyon Dam and Oxbow power houses.

**27. Comment (Shoshone-Bannock Tribes p.5):**

It is interesting to note that there are no interim measures associated with the certification while the mercury model is being developed. The Tribes request interim standards be issued with the certification and a reasonable metric for reducing the overall production of methyl-mercury within the project.

**DEQ Response:**

Please see Response to Comment #14.

**28. Comment (Shoshone-Bannock Tribes p.6):**

FERC, not the States, has ultimate legal authority and responsibility to impose license conditions for protection of fish and wildlife and for mitigation of past and future impacts to species. Neither the Tribes nor FERC will be bound by the purported Settlement Agreement. FERC has affirmative legal obligations under the Federal Power Act and Northwest Power Act to ensure not only equal consideration but *equitable treatment* to fish and wildlife affected by the HCC. Under the Northwest Power Act, FERC has a substantive legal obligation "to place fish and wildlife concerns on an equal footing with power production." To the extent that any Settlement Agreement is signed, it should be limited to issues related strictly to the Section 401 certification and not extend more broadly into other fish and wildlife issues that are more properly brought before FERC.

**DEQ Response:**

DEQ recognizes that FERC is responsible for implementing the Federal Power Act, licensing the project, and determining fish and wildlife mitigation measures. However, we disagree that the Agreement should be limited in the manner suggested by this comment. As stated in the recitals, the Agreement is intended to resolve a potential issue with the enforcement of 401 certification conditions that apply outside the existing project boundary, as well as the parties' disagreement regarding fish-related measures in the 2016 draft certification proposed by the Oregon Department of Environmental Quality. Resolution of these issues between the parties facilitates issuance of the section 401 certifications.



## **29. Comment (Riverside Irrigation District, Ltd.):**

[Riverside Irrigation District] supports the proposed 401 Certification, specifically the condition to implement the Riverside Operational Water Quality Improvement Plan to address concerns related to Brownlee Reservoir dissolved oxygen levels. Over the past five years, [Riverside Irrigation District] has worked with IPC in this cooperative effort to improve water quality in the Boise and Snake rivers.

### **DEQ Response:**

Thank you for your comment in support of the 401 certification Condition III.A., which requires implementation of the Riverside Operational Water Quality Improvement Project.

## **30. Comment (NMFS p.1&2):**

Temperatures in the Snake River are affected by numerous factors, including the existence and operation of the HCC dams (esp. Brownlee Dam). NMFS is also keenly aware of the threat posed to ESA-listed salmon and steelhead by increasing temperatures related to climate change. IPC's proposed Temperature Management and Compliance Plan (TMCP), especially the Snake River Stewardship Program (SRSP), should positively affect the thermal regime of the Snake River. The timely implementation of the SRSP should improve the resiliency of the Snake River to expected climate change effects. Though some uncertainty remains with respect to the overall efficacy of the program, this uncertainty is outweighed by the risk associated with continuing to delay the issuance for the Section 401 Certifications and the implementation of related mitigation measures to reduce temperature that would be required elements in a new license. In addition, the SRSP should greatly improve the habitat function for native species in a large reach of the Snake River upstream of the Hells Canyon project.

NMFS has concern with respect to the Brownlee Operation Plan, which aims to evacuate Brownlee reservoir, starting in Sept. in order to pass through cooler inflowing water and reduce Hells Canyon Dam outflow temperatures to 16.5°C during the salmonid spawning period (late Oct and Nov). We agree that the operation would likely improve temperatures for early spawning fall Chinook salmon. We are, however, concerned that evacuation of this water starting in Sept. could have negative consequences for adult fall Chinook and steelhead. First, this operation could put at risk the fall Chinook spawning program that has, for over two decades, provided stable, protective flows of between 8500-13,500 cfs for spawning and incubating fall Chinook. The continuation of this operation in order to recover fall Chinook salmon was specifically identified as an important conservation action in the Snake River fall Chinook salmon recovery plan. It appears that minimum targeted spawning flows may be reduced as a result of this operation, potentially reducing the amount of available spawning habitat (if resulting flows drop below 8500 cfs). Second, the release of larger volumes of warm water from Brownlee reservoir could reduce the efficacy of cool-water releases from Dworshak Dam in Sept. – increasing temps in the lower Snake River (downstream of the Snake and Clearwater River confluence) and potentially exposing adult fall Chinook and steelhead to higher temps as they migrate upstream.

NMFS recommends that the final 401 certification include (1) an analysis of the potential negative impacts that could result; and (2) the inclusion of an adaptive management process to guide the annual implementation of this operation throughout the period of the new license which explicitly considers:

- the potential tradeoffs for fall Chinook salmon and steelhead; and
- the outcome of previous attempts to implement this operation on the fall Chinook spawning program and lower Snake River temperatures; and
- coordination with relevant federal agencies (e.g., the Corps of Engineers, NMFS, USFWS) and concerned tribes.

### **DEQ Response:**

DEQ agrees the proposed TCMP should greatly improve habitat function of the Snake River. We also agree that the flows from Brownlee Reservoir should be kept at adequate levels to maintain a healthy fall Chinook Salmon spawning program.

Please see the discussion in IPC's section 401 application (section 7.1.2.1 and Exhibit 7.1-1) regarding downstream impacts from the reservoir drawdown. The application details that any drawdown from Brownlee Reservoir would have negligible temperature impacts at the Washington border. This is the best information available to DEQ at this time.

In any year when the Brownlee operational drawdown occurs, the certification (section II.E.1) requires a post-implementation effectiveness meeting and a report on the operation. IPC also has the option to propose alternative measures at a later time. Further, under section II.F.2 of the certification, DEQ will require adaptive management procedures in the event that temperature below Hells Canyon Dam exceeds 16.5° C in three consecutive years. DEQ cannot require IPC to coordinate with other federal agencies or tribes; therefore, such coordination is outside the scope of this 401 certification.

### **31. Comment (NMFS p.2):**

Plan B has the potential to be more harmful than beneficial to salmon and steelhead because it has the potential to alter the physical, biological, and chemical processes within the reservoir and it will most likely export more anoxic, mercury and nutrient laden water downstream into the Hells Canyon reach of the Snake River. Although this is not the preferred option, it is appropriate for NMFS to reiterate its opposition to this measure until such time that IPC (and the DEQs) can clearly demonstrate that significant downstream impacts are not likely to occur as a result of this action. This could include a demonstration that (1) water quality conditions within Brownlee Reservoir would likely improve to the point that the export of this water would no longer be likely to have substantial, negative impacts to downstream areas, or (2) a means of improving the water quality passing through the structure had been developed so that water released from the structure would no longer be likely to produce substantial, negative effects to downstream areas.

**DEQ Response:**

Plan B is not DEQ's preferred option. Approval of Plan B would require adequately addressing the potential impacts cited by NMFS. All water quality standards will be considered in the event of the approval of Plan B or other alternatives need to be implemented.

**32. Comment (NMFS p.2):**

NMFS supports the actions proposed in the draft 401 certifications to improve dissolved oxygen levels both within and downstream of Brownlee Dam. The aeration systems for 4 of the 5 units in the Brownlee Powerhouse should immediately improve downstream dissolved oxygen levels following construction. NMFS appreciates Idaho Power Company's efforts to implement this measure – with the scheduled completion for installation at each of the 4 units by the end of 2019. The proposed measures to reduce phosphorus, sediment, and aquatic vegetation should, over a longer span of time, substantially reduce nutrient loads and increase dissolved oxygen levels in many reaches of the mainstem Snake River as well as in several tributaries upstream of Brownlee reservoir.

**DEQ Response:**

Thank you for your comment.

**33. Comment (NMFS p.2):**

NMFS supports the actions proposed in the draft 401 certification to reduce or minimize Total Dissolved Gas (TDG) levels resulting from spilling water at the three HCC dams. The proposed flow deflectors are similar to those installed at other Snake and Columbia River hydroelectric projects, which have proven to be effective at reducing TDG levels at design flows.

**DEQ Response:**

Thank you for your comment.

**34. Comment (NMFS p.3):**

NMFS recommends additional monitoring to ensure that the effects of mercury processing and transport associated with Brownlee reservoir on ESA-listed species are not worsening. First, we propose that fish tissue monitoring and water quality monitoring be expanded downstream of Hells Canyon Dam. Existing data indicates juvenile Chinook salmon body burdens are low. However, the sample size is small, and the periodic collection of additional fish tissue and water quality monitoring would ensure that conditions are not changing while other measures are being developed. More information relating to the body burdens of juvenile fish would also be useful.

### **DEQ Response:**

Please see Response to Comment #20. DEQ believes it would be appropriate for NMFS to use their own authority to require out migration takes for scientific purposes in the Biological Opinion and Section 7 consultations.

DEQ is supportive of USGS and the ten-year timeframe that will be undertaken to fully perform mercury studies in the reservoir and considers this an adequate period to determine a long-term plan. Additionally, DEQ has modified the final certification (section VIII.A.3) to include language obligating IPC to complete mercury work within one year following the issuance of the FERC license or another approved date, should USGS fail to complete the study.

The possibility for increased monitoring, such as fish tissue sampling, will depend upon the current permits that IPC is in possession of. In the event that NMFS identifies additional work that they would like to see performed in the complex, DEQ will be open to considering expanding the scope of the current mercury monitoring and modeling efforts with the USGS and IPC.

### **35. Comment (NMFS p.3):**

NMFS supports the requirement in the draft 401 certifications to develop and implement a macroinvertebrate monitoring plan; implement survey and entrapment management plans; and maintain proposed minimum flows in the Snake River downstream of Hells Canyon Dam.

### **DEQ Response:**

This comment is not germane to the Idaho DEQ 401 certification.

### **36. Comment (NMFS p.3):**

Footnote 5 and 8 [footnote 6 and 9 of the final 401 certification] should be clarified. NMFS has not issued a biological opinion on FERC's licensing of HCC so no requirements exist to be consistent with at this time.

Footnote 6 [footnote 7 of the final 401 certification] indicates that the compliance point for ramp rate and flow measurements will occur at Johnson Bar Gage. Please clarify the relationship, if any, of this compliance point to the requirement in the Macroinvertebrate Monitoring Plan to measure and report "river state at a location within 5 miles downstream of Hells Canyon Dam."

### **DEQ Response:**

Footnote's 5 & 8 of the draft cert (footnote 6 and 9 of the final 401 certification) come from IPC's Proposed Operations portion of the 401 application (section 4.5, Table 4.5-1) and encompass IPC's forecast that a biological opinion will be forthcoming. DEQ updated these footnotes to reflect the fact that a Biological Opinion has not been issued to date. Should FERC modify these proposed operations as part of their relicensing, IPC is obligated to notify DEQ so as to allow DEQ to determine if such changes may affect compliance with water quality standards.

The Oregon macroinvertebrate monitoring plan is not germane to the Idaho DEQ 401 certification. Footnote 6 comments will be addressed by ODEQ.

Footnote 3 was added to the final 401 certification as this footnote was omitted inadvertently from the draft certification.

### **37. Comment (NMFS p.4):**

We note the development of the Agreement did not include tribes, Federal agencies and other stakeholders involved with fish management activities as part of HCC relicensing activities. This Agreement also did not consider the HCC Fisheries Resource Management Plan developed by the Upper Snake River Tribes with technical assistance from NMFS that was recently submitted to FERC.

We have some concerns that the proposed Agreement contains language that may potentially hinder parties from engaging in further fish passage activities such as those currently described in FERC's Final FEIS. NMFS also has some concerns about the lack of specificity in the proposed bi-state Agreement that may have implications for the expected future consultation with FERC under section 7 of the ESA.

#### **DEQ Response:**

See the Responses to Comments #10 and 21.

### **38. Comment (Nez Perce Tribe p.3):**

The Tribe is deeply concerned that the Draft Agreement's proposed settlement terms fail to implicate the Tribe's fisheries co-management and Treaty harvest without the Tribe's involvement and would require the Tribe's agreement to implement.

IPC, Oregon, and Idaho are all well aware that any additional production (or changes to existing production) associated with the HCC, cannot be implemented without the Tribe's involvement and require agreement among the Tribe and its fisheries co-manager counterparts at IDFG and ODFW.

The Draft Agreement's proposed settlement terms lack a basic understanding of fish management in the Snake River Basin and at Hells Canyon Dam. The terms are also simply unimplementable without the Tribe's involvement and agreement. The Draft Agreement's proposed settlement terms omit the fact-as IPC, Oregon, and Idaho well know-that any additional production will require agreement by the Tribe and its fisheries co-manager counterparts at IDFG and ODFW concerning the number, source, and timing of broodstock acquired, the impact of that broodstock acquisition on both non-Indian and Treaty harvest, the release locations of adults and juveniles, and the impact of the release site locations on non-Indian and Treaty harvest. The Draft Agreement's proposed settlement terms incorrectly characterize carefully developed agreements and understandings between the fisheries co-managers in the Snake River Basin; incorrectly characterize provisions in the existing 2018-2027 *United States v. Oregon* Management Agreement agreed to by the Tribe and its counterparts at IDFG and ODFW.

**DEQ Response:**

The 2018-2027 *United States v. Oregon* Management Agreement continues to govern the fishery, production, and related coordination activities as stated in that agreement. Should Idaho seek to modify production activities under the 2018-2027 *United States v. Oregon* Management Agreement, it will follow that agreement's established process for modification.

**39. Comment (Nez Perce Tribe p.3):**

The Tribe is deeply concerned that the Draft Agreement fails to address the serious, resource threatening water quality concerns within the Complex. The Draft Agreement, as currently written, simply cannot be squared with a sincere effort to resolve the outstanding water quality issues associated with a 30 or 50-year license of the Complex. The Tribe views the current Draft Agreement as an effort to sidestep water quality and fish passage criteria that will not be sufficiently met. Critically, the terms of the Draft Agreement omit any effort to address mercury/methylmercury-one of the most critical issues associated with the Complex-and 30 years of anticipated spawning criteria temperature exceedances that will occur until the Snake River Stewardship Program ("SRSP") takes hold.

**DEQ Response:**

DEQ's 401 certification addresses the HCC's share of the responsibility for water quality impacts in the Snake River. The Agreement is a supplement to the 401 certification, not a replacement for it. Please see the Responses to Comment #7 and #10.

**40. Comment (Nez Perce Tribe p.6):**

The Tribe opposes the terms in the Draft Agreement that propose IPC paying ODFW and IDFG if IPC is unable to increase production of spring Chinook smolts at the Rapid River hatchery. This payment scheme first involves an exercise in quantifying the economic worth of these additional fish which is problematic and challenging. This scheme then proposes providing compensation only to the state fisheries co-managers for shortfalls in fish production inappropriately ignoring the reality of the Tribe's fisheries co-management. Finally, this scheme does not ensure that any such payment is dedicated to redressing the impacts of the Complex, which is the underlying rationale for increasing spring Chinook production.

**DEQ Response:**

Please see Response to Comment #3.

**41. Comment (Nez Perce Tribe p.6):**

In addition, the Draft Agreement's provisions may not interfere with or inappropriately constrain the fisheries co-managers' responsibilities in *United States v. Oregon*. The Draft Agreement currently states:

"OR and ID agree not to make, nor to encourage or collaborate with any non-party to make, any recommendation, condition, prescription, determination, or comment with respect to spring Chinook salmon or summer steelhead in any proceeding relating to the New License that materially conflicts with, adds to, omits portions of, or prevents or renders impracticable implementation of any Party's obligations under Attachment A of this Agreement during the first twenty (20) years of the term of the New License."

This provision is contradicted by the language in the Draft Agreement's Appendix A, and rightly so, because this draft provision is simply unworkable within the U.S. v. Oregon cooperative management framework.

### **DEQ Response:**

DEQ disagrees with the comment's characterization of the quoted language from Section D of the Agreement. We also note there is no "Appendix A" to the Agreement, so this response assumes the comment is referring to Attachment A.

The language quoted in the comment does not contradict Attachment A. Rather, it expressly incorporates Attachment A. Further, the parties have agreed to revised language regarding allocation of additional smolts in Paragraph B.3 of Attachment A. The revised language requires additional smolt releases pursuant to the Agreement to be "consistent with the *United States v. Oregon* allocation strategy in place at the time of these smolt releases" and recognizes that "existing production and allocations have priority over new production if federal authorization constraints arise." Please also see the Response to Comment #38.

### **42. Comment (Nez Perce Tribe p.7):**

The Tribe is concerned that the Parties have failed to comply with the requirements of ORS §509.585 regarding fish passage.

Oregon Revised Statute ("ORS") §509.585 codifies the state's long-standing policy of requiring upstream and downstream passage around all artificial obstructions for migrating fish. ORS §509.585(1) states that "fish passage is required in all state waters of this state in which native migratory fish are currently or have historically been present." ORS §509.585(2) further states that "a person owning or operating an artificial obstruction may not construct or maintain any artificial obstruction across any waters of this state that are inhabited, or historically inhabited, by native migratory fish without providing passage for native migratory fish."

It is important to note that IPC and Oregon cannot obviate the applicability of ORS §509.585 to the Complex simply by entering into a settlement agreement with terms and conditions that materially alter Oregon's and IPC's fish passage responsibilities. Rather, Oregon, whether through a formal determination by the Commission or otherwise, must declare that the HCC is not subject to its fish passage requirements or must approve specific alternatives to fish passage.

**DEQ Response:**

ORS § 509.585 is an Oregon state law. As such, it has no application in Idaho. See Response to Comment #7 for discussion of the Idaho law and policy applicable to fish passage or the introduction or reintroduction of fish in Idaho waters.

**43. Comment (Nez Perce Tribe p.8&9):**

The Draft 401 Certifications should include immediate management actions aimed at significantly reducing MeHg generation within the HCC. There is no larger threat to the health of Tribal members who catch and consume these fish and to the Tribe's Treaty-reserved fishing right than the high levels of MeHg found in Snake River fish species downstream of the HCC.

Studies suggest that MeHg levels in sturgeon and other species immediately downstream of the HCC are higher than in sturgeon found elsewhere in the Columbia River Basin. Specifically, a 1996-1998 study of contaminant levels in fish throughout the Columbia River basin documented that, although MeHg was present throughout the basin in all fish species tested, the MeHg levels in sturgeon just downstream of the HCC were significantly higher than anywhere else. This strongly suggests that MeHg created within the HCC is being transported downstream where it is bioaccumulating at toxic levels in the food chain.

Although the Tribe believes that its white sturgeon consumption moratorium and fish consumption advisories are a necessary interim reaction to MeHg contamination in the Snake River below the HCC, the measures are not a solution to the MeHg contamination caused, or greatly contributed to, by the continued operation and maintenance of the HCC. The Tribe's Treaty rights will continue to be violated and Tribal members will continue to be harmed until MeHg contamination from the HCC is stopped. Given the urgent need to address MeHg production and transport caused or contributed by the HCC, the Tribe expects ODEQ and IDEQ to require aggressive, meaningful, and timely prescriptions to resolve this problem. While the Tribe supports IPC's study with USGS to address this problem, significant improvements to the Draft 401 Certification conditions are necessary. Needed improvements include accelerating the development of a MeHg management plan as well implementing an approach in the short-term which leads to immediate reductions in MeHg.

**DEQ Response:**

Without the information that will be gathered through the USGS study we will not be able to develop a suitable mercury TMDL. It is obvious to DEQ that in a complex system such as the HCC, we need more data in order to develop appropriate mercury limits. Please see the Response to Comment #14.

**44. Comment (Nez Perce Tribe p.10):**

When ODEQ and DEQ developed the Snake River-Hells Canyon Total Maximum Daily Load ("SR-HC TMDL") for a variety of contaminants in 2004, they did not develop a Total Maximum Daily Load ("TMDL") for mercury. Neither ODEQ nor DEQ have signaled any independent state efforts to develop the necessary TMDL that both agencies are required to develop and



agreed to have in place over thirteen years ago. The draft 401 Certifications only exacerbate ODEQ's and DEQ's inexcusable delay. Neither agency has committed to any foreseeable timeline in which the mercury TMDL must be completed, allowing IPC to theoretically continue to study the problem for the duration of the 30 to 50-year license term without holding the company accountable to implementing any reductions in mercury or MeHg production caused or contributed by the Complex.

**DEQ Response:**

DEQ does not dispute the need for a mercury TMDL. However, as the Snake River-Hells Canyon TMDL demonstrates, this effort would need to involve multiple states and advisory groups. It also would require an advanced level of planning relative to in-state TMDL endeavors. For these and other reasons, this TMDL has not been a high priority to date. The USGS study currently underway will help us understand mercury and methylmercury transformations in a complex western reservoir system and apply those findings to TMDL development in the future.

**45. Comment (Nez Perce Tribe p.13):**

The IPC 401 Application is based on the EPA and Oregon spawning temperature criteria of 13 degrees. Idaho has petitioned EPA for a higher site specific spawning criteria of 14.5 degrees. The Tribe opposes adoption of the 14.5 degree site specific criteria by EPA, and rejects the IPC notion that the 14.5 criteria would someday be the measure of temperature obligations under this application without additional review. Furthermore, the IPC application aims to relax spawning temperature criteria by 0.3 degrees to account for anthropogenic influences, making the actual criteria 13.3 (or 14.8) degrees.

The 13 degrees Celsius standard is not currently being met downstream of the Hells Canyon Dam and current downstream temperatures appear to be borderline for functional or suitable habitat (fish survival) related to spawning criteria. This is highly concerning in light of the fact that water temperatures in the Snake River have been increasing and may continue to increase due to climate change. There have already been three consecutive years-2014 to 2016-of average maximum temperatures above 16 degrees Celsius between October 23 and 29. Laboratory studies indicate that egg viability (post spawning) is compromised when water temperatures approach and exceed 16 degrees Celsius. For this reason, current water temperatures downstream of the Hells Canyon Dam simply cannot continue to exceed 16 degrees Celsius without having deleterious effect on fish species.

**DEQ Response:**

IPC's 401 application (section 7.1.2.1) states that "IPC is proposing to use 13.3°C as the applicable standard." Please see the Response to Comment #23 for discussion of why DEQ finds this appropriate.

DEQ's proposed site-specific criterion of 14.5°C for two weeks at the beginning of the spawning period is currently under review by EPA and NMFS and is not being utilized for the final 401 certification. However, to address concerns about warmer years, the certification (section II.C.6) does require implementation of the IPC's proposed Brownlee operational component.

#### **46. Comment (Nez Perce Tribe p.14):**

The Tribe asks that ODEQ and IDEQ require IPC to develop the Alternative Management Plan for addressing water temperatures deleterious to spawning fall Chinook and egg viability prior to relicensing. This would ensure Plan B is ready for implementation at the beginning of the new license term. This includes installing and having ready for operation a hypolimnetic pump system ("HPS") to provide cold water relief to fish downstream of the HCC no later than three years into the new license term. Having an HPS in place early in the license term to withdraw cold water from the hypolimnion in Brownlee and Hells Canyon reservoirs is an important safeguard for fall Chinook below Hells Canyon Dam.

In addition to the above requests, the Tribe also asks that ODEQ and IDEQ require IPC to verify through peer-reviewed studies, the water bodies they identify as meeting the thermal refugia criteria, as explained in the comments provided by the Columbia River Intertribal Fish Commission.

#### **DEQ Response:**

The request to require IPC to design, construct, and install a hypolimnetic pump system would preclude IPC from implementing the Snake River Stewardship Program and other tributary work. Fall Chinook Salmon spawning in the Snake River below the HCC has replaced the spawning in the Marsing stretch of the Snake River. Restoring the Marsing stretch of the Snake River to suitable spawning conditions would be necessary for salmonid spawning to occur in the segment of the Snake River upstream of the HCC. The certification's temperature alternative measures provisions (section II.F) provide DEQ with reasonable assurance, should the Snake River Stewardship Program fail to achieve the required thermal benefits, that an alternative solution can be designed and developed based on the latest technology, when and if the decision is made to implement alternative measures. Planning, designing, and constructing Plan B early precludes the opportunity to use new techniques for water cooling that could avoid other water quality contaminant issues.

Thermal refugia comments are not germane to the Idaho DEQ 401 certification.

#### **47. Comment (Nez Perce Tribe p.15):**

ODEQ and IDEQ should require IPC to implement actions that reduce near term temperature relative to spawning criteria exceedances that will occur for 30 years while the Temperature Management and Compliance Plan ("TMCP") benefits take hold.

Second, ODEQ and IDEQ should require IPC to implement Plan B Hypolimnetic Pump System ("HPS") if spawning period temperature exceeds 16.5 in three consecutive years or in three out of five years.

#### **DEQ Response:**

IPC is already undertaking instream work (Bayha Island) that is beneficial to the thermal regime. Deepened channel, reduced solar loading by increasing the islands foot print and weathering the

2017 runoff (a high water year) serves as proof of concept for the instream elements of the SRSP.

We see no basis for requiring implementation of Plan B under the suggested 3 out of 5 years scenario.

#### **48. Comment (Nez Perce Tribe p.15):**

The actual impact of the ROWQIP on phosphorus loads entering the Brownlee Reservoir is hard to predict. The Tribe would thus like to see verification that IPC's assumptions regarding surface runoff and sub-surface seepage from farmland are indeed accurate. For this reason, the Tribe also supports the certification condition that IPC submit a monitoring plan for the ROWQIP within the first year of the new license. The Tribe expects that monitoring completed under this plan will help resolve the uncertainty regarding the efficacy of the ROWQIP at reducing nutrient delivery to the HCC system. The Tribe also suggests that an adaptive management approach to the ROWQIP be captured in the certification conditions in case some of IPC's underlying assumptions regarding surface and subsurface nutrient delivery prove unfounded.

#### **DEQ Response:**

The final 401 certification (section III.B.1) requires extensive Riverside Operational Water Quality Improvement Program (ROWQIP) monitoring, which DEQs finds to be adequate based on the results of IPC's early implementation of this program. Documentation of the effectiveness of the early implementation of the ROWQIP is found in the 401 Application Table 7.2-2 and in exhibits 7.2- 1, 7.2-5 and 7.2-6. The final certification (section III.B.6) includes adaptive management provisions for the ROWQIP, Grand View Program, and Swan Falls Program.

#### **49. Comment (Nez Perce Tribe p.15):**

The Tribe supports the requirement that IPC install distributed aeration systems at four of the five Brownlee powerhouse turbines, but the Tribe is concerned that the systems may produce elevated total dissolved gas ("TDG") levels in exceedance of current standards. If the aerations systems in the Brownlee powerhouse turbines perform well-measurably increase dissolved oxygen in the Hells Canyon Dam outflow without causing the exceedance of the 110% standard for dissolved gas-IPC should be required to install distributed aeration systems at the Oxbow and Hells Canyon Dams.

The Tribe also supports EPA's recommendation that by year fifteen of the reissued license, IPC be required to ensure that the 30-day rolling average of the daily mean dissolve oxygen ("DO") concentration in the Hells Canyon Dam outflow meet or exceed 6.5 mg/L. The Tribe also supports EPA's recommendation that the 7-day rolling average of the daily mean DO concentration in Hells Canyon Dam outflow meet or exceed 8.5 mg/L after October 23 of each year to support spawning.

TDG – The Tribe supports the Columbia River Inter-Tribal Fish Commission's suggestions that the results from the TDG monitoring be placed on a publicly accessible Web site.

## **DEQ Response:**

DEQ only requires that IPC's discharge is sufficient to meet the state TDG standard. If the TDG standard is met, the discharger is in compliance. Condition VI.A.1 of the certification addresses this concern "IPC shall maintain less than 110% at sampling locations" except during floods

We note that EPA did not provide any comments to DEQ during the public comment period for the 2018 draft certification. Please refer to section 6.3.3 of IPC's application for information on the TDG element of the Snake River-Hells Canyon TMDL and IPC's contribution to elevated TDG in the reach. IPC provided a robust analysis of the conditions present in the HCC and are only responsible for their contribution from the HCC. Additionally, DEQ amended the final 401 certification (section IV.D) to include a second trigger for outflow DO alternative measures:

**Alternative Measures.** If, after any Outflow DO Annual Report and after consultation with IDEQ, ODEQ determines that either (1) the distributed aeration systems are not achieving or will not likely achieve an increase in DO in the outflow of Hells Canyon Dam, as measured at the turbine water intake system at Hells Canyon Dam, of at least an average of 1.2 mg/L during July 1 to October 22 and 1.5 mg/L during October 23 to December 31, or (2) monitoring results collected within 3 miles downstream of Hells Canyon dam indicate DO levels fall below applicable minimum DO criteria, then ODEQ shall notify IPC that Outflow DO Alternative Measures are required. Within 120 days of the notification, IPC shall submit to the DEQs for approval a Brownlee DO Alternative Measures Plan.

## **50. Comment (Nez Perce Tribe p.16):**

The Draft 401 Certifications made no changes to IPC's proposed load following regime. This is problematic because load following negatively affects aquatic species. Fluctuating river flows from load following can lead to dewatering redds, stranding, increased predation risk, and excessive energy expenditures for various aquatic species including juvenile fish and macroinvertebrates.

In order to protect redds and juvenile fish, ODEQ and IDEQ should prohibit load following from October 21 to December 11, when adult fish are spawning, and from March 15 to June 15, when juvenile fish are rearing. Redds and juvenile fish should experience relatively natural flows. ODEQ and IDEQ should also require IPC to conduct a study on load following's effect on juvenile behavior and survival.

## **DEQ Response:**

It is DEQ's understanding that IPC has wintertime minimum flow obligation to keep redds wet. This could be a part of the 2005 interim measures IPC agreed to, which would mean they are currently implementing these protective practices. DEQ does not have the authority to establish minimum flow requirements which is expressly forbidden by statute. Please see Idaho Code §39-104(4)-(5).

## **51. Comment (Nez Perce Tribe p.16):**

The Tribe believes that the Draft 401 Certifications must include fish passage and introduction or reintroduction for Snake River fall Chinook, spring Chinook, and steelhead upstream of the HCC. Requiring fish passage, natural production, and habitat improvement above the HCC is

necessary to ensure the adequate protection of the Tribe's Treaty-reserved natural and cultural resources and to ensure that the Complex does not cause or contribute to an exceedance of water-quality standards or harm protected beneficial uses. Moreover, requiring fish passage is consistent with Idaho's 1976 law requiring the installation and maintenance, at the owner's expense, of a fishway at any dam that restricts the free and uninterrupted passage of fish in any stream in Idaho.

**DEQ Response:**

See Response to Comment #7. The 1976 law referenced in the comment has been amended to now state that it does “not apply to the Hells Canyon hydroelectric project.” Idaho Code § 36-906(a).

**52. Comment (Nez Perce Tribe p.17):**

The Settlement Agreement between Oregon, Idaho, Washington, U.S. Department of Commerce, and IPC does not address or mitigate for the loss of fisheries resources available to the Tribe and affected by the construction and operation of the HCC. IPC should reach an agreement with the Tribe regarding mitigation that will address the impact on the Tribe's treaty-reserved rights and develop and implement that mitigation within five years (2024).

**DEQ Response:**

This comment is directed at IPC and is therefore outside the scope of DEQ’s request for public comment. However, as discussed in the Response to Comment #3, the Agreement does not bind non-parties. Nor does it preclude the parties from entering into other agreements consistent with the commitments made in the Agreement.

**53. Comment (Nez Perce Tribe p.17):**

It is unclear if or how the Draft 401 Certification requirements account for climate change. The Tribe witnessed significant sockeye and spring Chinook mortality in 2015 due to abnormally high water temperatures associated with a changing climate. It is important that actions be taken to alleviate these lethal conditions as much as possible, considering that the HCC control much of the river flow that the adult migrants experience.

Oregon and Idaho need to explain how their draft 401 certification conditions will ensure that water quality standards will be met (relative to minimum suitability standards) in the face of changing weather and precipitation patterns resulting from climate change.

**DEQ Response:**

See the Response to Comment #12.

## **54. Comment (Idaho Water Users Association):**

A 401 Certification is not an appropriate mechanism to address and impose fish passage obligations. Should Oregon attempt to incorporate such conditions in future certifications, Idaho should respond with a prohibition on fish passage in its certifications. Idaho must maintain sovereignty over its waters – including its right to oppose reintroduction of any species above the HCC that is listed under the ESA.

The Coalition, again, congratulates Idaho, Oregon and Idaho Power in reaching an agreement to allow the § 401 Certification process to move forward and we urge Idaho DEQ and Oregon DEQ to issues [sic] certifications consistent with the settlement.

### **DEQ Response:**

See the Response to Comment #7.

## **55.A. Comment (IPC pg.1):**

*Hoopa Valley Tribe v. FERC* – IPC takes no position in these comments relative to potential waiver of the DEQs’ section 401 authority, and reserves its right to take any position it deems appropriate were a third party to assert that the DEQs have waived.

### **DEQ Response:**

There are important differences between the *Hoopa Valley* case and Hells Canyon. For example, DEQ’s water quality certification was requested by and is based on an amended application that DEQ received from IPC for the first time on June 14, 2018. DEQ has issued a final certification consistent with the timeline in Clean Water Act section 401(a)(1), 33 U.S.C. § 1341(a)(1). DEQ expects that the conditions in the final certification shall become conditions on FERC license for the HCC because they are necessary to reasonably assure compliance with Idaho’s water quality standards, the Snake River-Hells Canyon TMDL, and other applicable law.

## **55.B. Comment (IPC pg.1):**

The DEQ’s 401 is not a permit. Rather, it is a certification that the project is reasonably assured of complying with specific provisions of the CWA. Thus, command and control permit-type conditions should not be imposed in the certification. Rather, the certification should simply state that if certain actions are taken, then there is reasonable assurance of compliance with the WQ standards. IPC is authorized to operate the Hells Canyon Complex (HCC or Project) under its FERC license, and as such, FERC — and not the DEQs — is the primary regulator of the HCC. IPC makes this clarification to prevent circumstances where multiple agencies are requiring dual, and potentially conflicting, regulations.

### **DEQ Response:**

The certification is not a permit; it is a Clean Water Act section 401 water quality certification that includes conditions necessary to reasonably assure compliance with Idaho’s water quality

standards, the SR-HC TMDL, and other applicable law. DEQ intends to work cooperatively with stakeholders to implement these conditions.

### **56. Comment (IPC p.1&2):**

The first sentence of paragraph 3 states “IPC’s application includes measures proposed to ensure the operations of the project...” IPC requests DEQ change “measures proposed to ensure” to “measures proposed to provide reasonable assurance.”

#### **DEQ Response:**

Thank you for your comment. We support this suggested language change and have modified the final certification.

### **57. Comment (IPC p.2):**

The second paragraph asserts that the Project is solely responsible for exceedances of Snake River Fall Chinook (SRFC) spawning temperatures, and TDG below the dam. IPC does not believe that conclusion is scientifically defensible. The Project contributes to exceedances, but is not the sole cause. The Snake River is large, complex system. IPC is not responsible for meeting the criteria, only providing reasonable assurance that its operations will not cause exceedances. IPC requests that IDEQ edit the certification to reflect the thermal load allocation consistent with the TDML: “...with respect to salmonid spawning temperature criteria, the Project is responsible when the temperature of water released from Hells Canyon Dam is greater than site potential as defined at RM 345, or the applicable criteria during the fall chinook spawning period below the Hells Canyon Dam.”

#### **DEQ Response:**

IPC will be held solely responsible for temperature exceedances when the temperature at river mile 345 of the Snake River is below the salmonid spawning criteria.

Thank you for your comment. DEQ will incorporate the existing thermal load allocation language from the current TMDL for insertion into the 401 certification for added precision.

### **58. Comment (IPC p.2):**

a) *Subsection C.6.b* Insert “7-day average maximum temperature conditions” after “target” in the third line. This clarifies how the target is measured.

#### **DEQ Response:**

The temperature forecast for the 7-day average maximum temperature is described in the 401 certification Condition II.C.6.a. DEQ has modified the final certification at II.C.6.b.

**b) Subsection E.4.h** IPC requests IDEQ review the reference to “the upland sediment reduction program.” This appears to be referencing the Grand View Sediment Reduction Program that is currently being proposed as part of IPC’s dissolved oxygen (DO) mitigation program. IPC requests the sentence referring to the upland sediment reduction program be deleted from the temperature section.

**DEQ Response:**

IPC is reviewing a previous draft document. The latest draft 401 certification that was released for public comment changed the “upland sediment program” to “Grandview” in the latest draft version. DEQ has modified the final certification at II.E.4.h. and the sentence now reads: “This includes a discussion of progress towards meeting the non-temperature related goals of the in-stream work in the mainstem Snake River as well as non-temperature benefits of the tributary restoration work.”

**c) Subsection F.5** This section provides that IPC shall implement the TAMP upon DEQ approval. This requirement ignores the role of FERC has in modifying FERC license conditions. Implementation may require FERC authorization. This section should be revised to reflect that IPC will implement upon DEQ and FERC approval where FERC approval is required.

**DEQ Response:**

FERC’s authorization is not necessary for DEQ to approve or require implementation of the TAMP, and we decline to make it so.

**59. Comment (IPC p. 2&3):**

**a) Brownlee Reservoir TMDL Load Allocation, Subsection B. 1.c.** IPC is unclear what IDEQ is intending by, “end of system runoff” IPC proposes that for clarity this language be changed to, “in the water returning to Snake River at the end of the Riverside Canal”.

**DEQ Response:**

Thank you for your suggestion. Your comment will be incorporated into our final 401 certification language in section III.B.1.b and statement III.B.1.c has been deleted. Additional clarification is provided in III.B.1.d.

**b) Brownlee Reservoir TMDL Load Allocation, Subsection B. 4.** IDEQ requires submittal of DO annual reports at the end of each calendar year. IPC requests that IDEQ modify this requirement to within 120 days of December 31st of each year to allow time for lab analysis of TP and TSS and processing of streamflow data, collected up to the end of year, to be completed.

**(Page 16): Section III Dissolved Oxygen (DO)—Brownlee Reservoir TMDL Load Allocation, Subsection B.5.** IDEQs require submittal of DO Five-Year Reports at the end of every fifth calendar year. IPC proposes this requirement be changed to within 120 days of December 31st of every fifth calendar year to allow time for completion and inclusion of DO annual reports.



## **DEQ Response:**

The deadlines featured in the 401 certification are intended to give some structure to the HCC multi-agency licensing and certification effort. These deadlines were conceived with the intent that agencies would hold meetings in a collective time frame for efficiency. DEQ has modified the final certification at III.B.4 and III.B.5 to provide for 120 days after December 31<sup>st</sup> of each year following the issuance of the FERC license.

## **60. Comment (IPC p.3):**

**a) *DO Criteria Below Hells Canyon Dam. A.1.*** For clarity purposes, IPC requests that IDEQ explicitly state that aeration requirements and targets only apply when DO conditions do not meet standards, and that aeration targets are not intended to require oxygen conditions in excess of the applicable standards.

## **DEQ Response:**

The final certification requires IPC to install and operate aeration system in the manner IPC proposed in section 7.2.2 of its application, which is incorporated by reference into the 401 certification. That section of the application, proposes that IPC will operate the distributed aeration systems to “add as much DO as possible to Brownlee outflow (and correspondingly Hells Canyon outflow . . . on an average annual basis).” DEQ has modified the final certification at IV.A. so that the citation to IDAPA 58.01.02 includes all applicable DO requirements. Additionally, the changes to the final certification at IV.D also describe the location for compliance monitoring. Please also see the Response to Comment #49.

**b) *DO Criteria Below Hells Canyon Dam.A.3.*** IPC requests the compliance location be described as “an appropriate location, as defined and approved by IDEQ in the monitoring plan. In addition, the IDEQ requirement of an average addition of 1.2 mg/L during July 1 through October 22 and does not appear to account for information that IPC provided showing a statistically significant improvement in DO conditions of water leaving the HCC over the past 10 years. Since 0.8 mg/L is the current best available estimate for the average DO deficit below Hells Canyon Dam from July 1 through October 22, IPC requests that IDEQ replaces the 1.2 mg/L requirement with a 0.8 mg/L requirement throughout Section IV-DO-DO Criteria Below Hells Canyon Dam.

## **DEQ Response:**

Thank you for your earlier efforts to show DO improvements in the HCC. However, the requested change was not made.

In the event that aeration components are installed at Hells Canyon Dam, which are not represented by the turbine intake monitoring location, DEQ may modify the monitoring plan to incorporate these components.

### **61. Comment (IPC p.3):**

IDEQ is proposing to require installation and operation of the system within 6 months of approval of the operating plan. IPC requests that IDEQ provide an allowance that the implementation schedule would also be dependent on IPC's ability to obtain any necessary permits and regulatory agency approvals necessary in addition to IDEQ and FERC.

#### **DEQ Response:**

Thank you for your comment. No additional time will be provided.

### **62. Comment (IPC p.4):**

IDEQ is proposing, "IPC shall review and update the HAB monitoring plans every five years to reflect new versions of IDEQ guidance documents." IPC requests that the requirement explicitly allow for IPC to propose changes to the plan based on monitoring results in addition to new versions of Idaho guidance documents.

In addition, IDEQ is proposing, "IPC shall submit to IDEQ proposed HAB alternative measures and a HAB alternative measures plan to address compliance with applicable criteria." IPC requests IDEQ acknowledge HABs are a watershed issue, and an alternative measures plan should be developed in concert with ODEQ, IDEQ, and other stakeholders.

#### **DEQ Response:**

IPC is not prohibited from making changes to the harmful algal bloom (HAB) monitoring plan. In the event that IPC chooses to make a modification to the plan more frequently than the required five year timeframe, please provide DEQ with an updated copy. DEQ has modified the final certification at VII.A.1.a to include monitoring at locations identified by DEQ. These locations may be driven by citizen complaints. Additionally, DEQ has modified the final certification at VII.B and C to recognize the HAB monitoring plan may be updated earlier than once every five years, and to remove language related to having the monitoring plan be specific in addressing compliance with applicable criteria when numeric HAB criteria are non-existent in the Idaho DEQ Water Quality Standards.

IPC's responsibility for algal blooms, if any, would need to be addressed as part of the alternative measures plan.

### **63. Comment (IPC p.4):**

**a) Subsection A.1.(c)** IPC recommends deletion of subsection (c). Subsections (a) and (b) provide a means for the DEQ to communicate approval or deficiencies in an IPC submittal. Since the submittal is IPC work product that reflects IPC thinking and judgment, rather than DEQ itself modifying IPC documents, it should return the submittal to IPC to cure deficiencies.

**DEQ Response:**

This subsection was meant to address minor document modifications in an attempt to expedite adaptations. The dispute resolution process is open to IPC in the event that the Company does not agree with this process.

**b) Subsection A.3.** This subsection provides that, “IPC’s failure to develop an IDEQ-approved document within such time frame will be considered a violation of this condition of the certification.” IPC has no control over how long it would take DEQ to review the documents and reasonable disagreement over documents, and report language should not be a basis for DEQ to consider these to be a violation of the 401. This is contrary to the dispute resolution process, in section X. subsection K.

**DEQ Response:**

DEQ has no control over how long it would take IPC to revise/review documents. A final deadline is prudent. A violation would not necessarily require legal proceedings or preclude dispute resolution.

**c) Subsection A.4.** IPC requests IDEQ edit this paragraph to read, “Once documents are approved by IDEQ, IPC shall submit these documents to FERC with a request that such documents be incorporated into and enforceable as a part of this license. IPC shall implement this certification in accordance with its terms and conditions.”

**DEQ Response:**

Thank you for your comment. We do not envision all document submittals going to FERC. DEQ has modified the final certification at IX.A.4.

**d) Subsection B.** IPC request IDEQ delete “to the DEQ’s satisfaction” in line 7 of the paragraph. Whether the circumstances are beyond IPC’s control should be measured by an objective, reasonable standard, not the subjective feeling of a future DEQ employee. In addition, the sole discretion of DEQ language seems to conflict with the option of dispute resolution in Section X. subsection K.

**DEQ Response:**

IPC remains responsible for sufficiently demonstrating that circumstances are beyond the Company’s control.

**e) Subsection C.** The IDEQ has not identified a source of state law it relies on for this provision. IPC requests subsection 3 be deleted.

**DEQ Response:**

Thank you for your comment. No changes will be made to this condition of the certification.

**f) Subsection D.** It is unclear to IPC whether DEQ’s intent is that this apply only when an action, “may potentially affect water quality.” If the intent is for any changes to the Project, regardless of impact to water quality, to require review and approval by DEQ, IPC believes that is beyond the regulatory purview of DEQ and therefore is an inappropriate water quality certification. It is appropriate to notify DEQ of changes that may impact water quality so that DEQ has the authority to review any project modifications under the authority of CWA 401(a)(3), but DEQ does not have a veto power over all project modifications, as this provision seems to suggest.

**DEQ Response:**

DEQ has modified the final certification at IX.D to clarify the sequence of events should changes to the project occur. This is standard certification language to reflect that the certification is based off of the June 14, 2018 CWA section 401 application.

“IPC shall notify the DEQs of any change in ownership, scope, or operation of the Project. IPC shall obtain DEQ’s review and any additional certification deemed necessary by DEQ under Clean Water Act § 401 before undertaking any such change to the Project that may affect water quality.”

**g) Subsection E.** Subsection E provides that IPC shall seek DEQ approval before undertaking any project repair or maintenance, “that may potentially affect water quality.” This subsection should acknowledge that changes may be at the direction of FERC, and in all cases, must be approved by FERC, and that DEQ will not impose restrictions on performing repairs or maintenance that conflict with FERC directives.

**DEQ Response:**

DEQ reserves its authority to deal with water quality issues that arise from project repairs and maintenance.

**h) Subsection I.** This subsection defines resolution of conflicts between Certification conditions and application conditions as being controlled by IDEQ’s interpretation. IPC objects to this, and requests IDEQ acknowledge that dispute resolution provisions under subsection K are the appropriate resolution mechanisms.

The blanket prohibition in subsection H is inconsistent with the 401, the SR-HC TMDL, and the CWA. All recognize that the HCC may pass through or “discharge” water that may not meet water quality standards in certain circumstances, such as temperatures in the summer that exceed standards because of inflow temperatures. This “catch-all” language poses the potential for misuse by third parties to assert 401 violations where none exist.

### **DEQ Response:**

The language in IX.H is to protect water quality against unforeseen events. This language is not meant to override the specific 401 certification conditions. Rather it is intended to provide for unexpected eventualities, such as new activities or new discharges at the project.

### **64. Comment (IPC p.6):**

a) *Subsection K.4* provides that if the dispute resolution process does not result in settlement of the issue in dispute, then the DEQs shall give notice of their decision and, “IPC shall take actions required by the DEQs in this notice.” This section should make clear that IPC reserves the right to seek review of such DEQ requirements in any applicable forum.

### **DEQ Response:**

The certification is not the appropriate vehicle to reserve rights for IPC.

b) *Subsection L* Idaho has no legal authority to require a federal oversight payment under federal or state law. IPC recommends IDEQ’s proposed rate schedule reflect the large amount of work required up front during initial implementation of the Project and the declining requirements through time as the programs are in full operation, such as is reflected in Oregon’s rate schedule. Rather, IDEQ’s proposed schedule continues to increase through time, regardless of the anticipated level of oversight necessary for administering the Project.

### **DEQ Response:**

The project oversight payment is set at the level necessary to reasonably assure DEQ can effectively monitor the complex suite of measures contained in the final 401 certification. Such monitoring requirements are authorized by section 401(d), 33 U.S.C. § 1341. If less monitoring effort is required, in the future then the rate schedule may be amended. Additionally, IPC agreed to the same project oversight payment in Section P of the Agreement.

### **65. Comment (IPC p.6&7):**

IPC requests IDEQ modify the reservoir target elevation identified for August 7 as, “2,059 or less” rather than just “2,059”.

A footnote is missing for August 7 target elevation of 2,059. IPC requests ODEQ add footnote c as presented in the IPC application, “A component of the 2004 Interim Agreement, Exhibit 2 to this AIR, provided that ‘IPC will use best efforts to hold Brownlee Reservoir at or near full elevation (approximately 2,077 msl) through June 20th; and thereafter will draft Brownlee Reservoir to elevation 2,059 (releasing up to 237 kaf) by August 7th.’”

IPC requests that the text under Project Outflows, “Maximum daily flow fluctuation” and “June 1–September 30” be displayed in one cell to make clear that the flow fluctuation limit applies only during this period.

IPC requests IDEQ remove the reference to 13,000 cfs limit year-round at the McDuff gage. It was erroneously included in our application. The reference of 11,500 along with the footnote is the accurate value.

IPC requests that the first three sentences of footnote 9 be deleted, so the full footnote simply reads, “In 2007, the U.S. Army Corps of Engineers recommended to FERC a minimum flow for safe navigation of 11,500 cfs at the Snake River below McDuff Rapids at China Garden, Idaho gaging station 13317660. IPC concurs with the Corps’ recommendation and anticipates that the new license will provide for a minimum flow of 11,500 cfs measured at McDuff Rapids at China Garden, Idaho, gaging station 13317660 with a proviso that IPC would not be required to use reservoir storage to meet the 11,500 cfs minimum flow.”

### **DEQ Response:**

The final certification identifies the reservoir target elevation as “2059 or less”.

The missing footnote referred to in the comment, Footnote C, was IPC’s characterization of what they have agreed to, this had no bearing on our certification and so was not incorporated.

Our table mirrors the application submitted by IPC.

We will not amend the McDuff gage footnote as this was provided ‘word for word’ in IPC’s application. See Table 4.5-1 from the 401 application (IPC 2018). We suggest that IPC take up this issue with FERC in the license application.

### **66. Comment (Idaho Conservation League p.3&4):**

Under section 401 of the Clean Water Act (CWA) IDEQ and ODEQ are required to certify that water quality and the beneficial uses of water bodies will remain protected if a federally permitted action is approved. To that end, we fail to see how the proposed settlement agreement – an integral part to this certification process and the ongoing operation of the HCC – achieves these goals. We request that both DEQ’s elaborate on how the requirements of the settlement agreement furthers each state’s obligations under section 401 of the CWA.

We are particularly concerned with Section D under Agreement Terms and Conditions. This section explicitly prohibits the DEQ’s from carrying out any actions that may be inconsistent.

In addition to limiting the abilities of the DEQs to fulfill their CWA mandated obligations, the settlement agreement also limits the abilities of Oregon’s Department of Fish and Wildlife (ODFW) and Idaho’s Department of Fish and Game (IDFG) from appropriately and effectively doing their jobs.

### **DEQ Response:**

Under section 401 of the Clean Water Act, 33 U.S.C. § 1341, DEQ is granting a water quality certification with conditions that reasonably assure the HCC will comply with the applicable requirements of sections 1311, 1312, 1313, 1316, and 1317 of Title 33 of the United States Code; the Idaho Water Quality Standards (IDAPA 58.01.02); the Snake River-Hells Canyon TMDL’s allocations to IPC; and other appropriate water quality requirements of Idaho law. Because

certification conditions related to temperature and the Brownlee Reservoir TMDL dissolved oxygen load allocation require IPC to take actions outside the existing FERC project boundary, FERC may determine that it has no jurisdiction to enforce such conditions. For DEQ to have the requisite reasonable assurance, such conditions must be enforceable regardless of FERC's determination.

Section C of the Agreement provides DEQ an enforcement option in the event FERC declines to enforce the conditions in sections II and III of the certification. Thus, the Agreement supplements DEQ's certification by providing additional assurance that the certification's temperature and Brownlee Reservoir dissolved oxygen conditions will be enforceable.

We disagree with how the comment characterizes Section D of the Agreement. The terms of the Agreement—including the terms in Section R regarding the titles for the sections and paragraphs in the Agreement—speak for themselves. Nothing in the Agreement limits DEQ's ability to issue a section 401 certification for the HCC consistent with the Clean Water Act and other applicable law. Nor does the Agreement limit IDFG from appropriately and effectively carrying out its responsibilities. Section D.2 specifically allows IDFG to submit comments in the NEPA, ESA, and Federal Power Act processes relating to the new HCC license. Moreover, Section D.2 states: "Nothing in this Agreement shall be construed as limiting OR's or ID's advocacy that is related to any aspect of its sovereignty or state policies nor any party's advocacy in opposition."

#### **67. Comment (Idaho Conservation League p.4):**

We disagree with IDEQ's approval of IPC's request to increase the temperature water quality criteria by 0.3°C from October 23 to November 26. We do not believe that the Technical Support provided for this decision satisfies the requirements of IDAPA 58.01.02.070.07, and therefore a temperature increase should not be included as part of any 401 Certification issued by IDEQ. We are particularly concerned about compliance with 40 CFR 131.11. This federal regulation requires that adopted water quality criteria must be based on sound scientific rationale. Ultimately, the request for increased temperature criteria is based on economic or operational factors, not the required "sound scientific rationale." IPC and IDEQ used the inverse approach, starting with a desired outcome then justifying through arguments that salmonid spawning remains supported at increased temperatures. This approach is not consistent with 40 CFR 131.11 and therefore cannot be relied upon to grant IPC's request.

*"fully protected designation"* IDEQ states that laboratory and field studies provide support that salmonid spawning will be fully protected. However, it is unclear if IDEQ's "fully protected" designation accounts for thermal stresses on fish population, defined as "when a temperature or a change in temperature produces a significant change to biological functions leading to decreased likelihood of survival." Thermal stresses can create indirect effects resulting in death or reduced fitness that impairs processes such as growth, spawning, smoltification, or swimming speed.

#### **DEQ Response:**

DEQ is using the Director's discretion to issue a waiver for temperature in the Snake River below Hells Canyon Dam, as authorized in DEQ's Water Quality Standards IDAPA 58.01.02.070.07. With that action, DEQ is not proposing new or revised water quality criteria. In

fact, DEQ already has submitted site-specific criteria of 14.5°C to EPA for approval for the 14 day period starting on October 23 and running through November 6. EPA has started the approval process for this site-specific criteria change. The rationale for the site-specific criteria applies equally, if not more, to the Director's 0.3°C waiver. Therefore, DEQ has determined that the 0.3°C temperature waiver is based on a sound scientific rationale and is protective of the existing and designated beneficial uses, consistent with 40 CFR 131.11.

Geist et al. (2006) supports the conclusion that 13.3°C is a protective temperature for salmonid spawning. Additionally, the 2017 Fall Chinook Recovery Plan resolves that existing studies specific to Snake River fall Chinook salmon do not point to temperature as a significant limiting factor (NMFS 2017). This conclusion is more recent and more location- and species-specific than EPA's 2003 regional temperature guidance.

### **68. Comment (Idaho Conservation League p.6):**

IPC's request is not consistent with the SR-HC TMDL, contrary to the claim included in IDEQ's response to IPC. The SR-HC TMDL does include provisions that allow for a temperature exceedance above applicable criteria, but this only pertains to scenarios when the site potential (temperature at river mile 345 upstream of the HCC) exceeds 13°C. Additionally, if and when the site potential exceeds 13°C, IPC is only allowed to exceed background temperatures by 0.14°C, not 0.3°C as claimed by IDEQ. In fact, the SR-HC TMDL explains that it specifically chose to adhere to Oregon's allowable temperature increase of 0.14°C because it was the more stringent standard.

The SR-HC TMDL doesn't provide allowances for a blanket increase of 0.3°C such as what is being requested. Exceedances of applicable temperature criteria are only permissible under certain specific scenarios. Thus, IPC's request for a blanket increase in temperature criteria is not consistent with the SR-HC TMDL, and therefore should not be granted by IDEQ.

### **DEQ Response:**

IPC's request is consistent with the requirements in IDAPA 58.01.02.070.07. The required thermal benefits in section II.B of the final 401 certification are based on Idaho's salmonid spawning temperature criterion of 13.0°C and the DEQ Director's authorization of a 0.3°C waiver pursuant to IDAPA 58.01.02.070.07. The Director's waiver allows Idaho to issue a certification with a thermal target that is in concert with Oregon's certification, which is appropriate for a border river.

After the DEQs developed the TMDL, ODEQ adopted a 0.3°C human use allowance. Oregon is applying this human use allowance in connection with its certification of the HCC. The background temperature exceedance limit of 0.14°C appears in the Snake River-Hells Canyon (SR-HC) TMDL, which encompasses the goals set for the hydrologic subbasin at the time the TMDL was written. These goals are not established in rule. All dischargers in the watershed share the responsibility for temperature increases that come at certain times of the year.



## **69. Comment (Idaho Conservation League p.7, USRT p.6-7):**

We question whether the 401 Certifications include sufficient provisions necessary to ensure Idaho's and Oregon's water quality standards will be met. The SR-HC TMDL requires an inflow concentration of 70 µg/l or less of TP during the critical period of May through September in order to prevent excessive algal growth and comply with a seasonal average of 14 µg/l of chlorophyll a (chl-a). However, based on data showing the relationship between chl-a and TP (Havens and Nerunberg, 2004), we are concerned that this short-term water quality target will not meet water quality standards due to insufficient reduction of TP within the HCC.

Our recommended provisions include:

- Seasonal (May-September) TP concentration targets of 30 µg/l or less for the Brownlee, Oxbow, and Hells Canyon reservoirs
- A requirement to reduce TP concentrations by 40 ug/l between May-September in order to meet the 30 µg/l target within reservoirs (e.g. 70 µg/l SR-HC inflow – 30 µg/l Stratified reservoir target).

### **DEQ Response:**

Please see the Response to Comments #25, regarding TP, and Comment #19, regarding dissolved oxygen.

## **70. Comment (Idaho Conservation League p.8):**

IDEQ's draft certification notes that in reviewing any alternative measure proposed by IPC, IDEQ shall consider the following:

*Whether the Alternative Measures being considered, operated alone or in combination with other Alternative Measures, may cause or contribute to a violation of water quality standards, and if so, whether there are any actions that can be undertaken to ensure no such violation occurs*

While this provision outlines the requirement to consider compliance with germane WQS, it does not explicitly prohibit the approval of any proposed alternative measure that will not comply with all WQS or TMDL. Inclusion of such clear language is important, as WQS and TMDLs are well-researched, scientifically supported standards that provide a definitive threshold for a variety of pollutants that under no circumstances should be exceeded.

### **DEQ Response:**

DEQ cannot approve alternative measures that do not reasonably assure compliance with Idaho Water Quality Standards (WQS). The HCC 401 certification must provide reasonable assurance that water quality standards will be met. Alternative measures would still need to accomplish required actions set forth in the 401 certification, including but not limited to sections II.B, II.F.4.b, and III.A.

### **71. Comment (Idaho Conservation League p.9):**

Once the predictive model is complete, IPC has 180 days to propose a methylmercury management plan to address the HCC's role in methylmercury production. We are concerned over this proposed timeline for developing a methylmercury management plan, and believe it would be prudent to have interim measures addressing mercury production until the predictive model is completed.

#### **DEQ Response:**

Please see the Response to Comment #14.

### **72. Comment (Idaho Conservation League p.11):**

The successful operation of the HCC, and compliance with each state's water quality standards, is inherently tied to the effects of climate change through forecasts of hydrologic conditions, such as variable timing and magnitude of river flows and the temperature of inflowing water. This inherent dependency means that the effects of climate change may directly undercut assumptions in the 401 Certifications.

Idaho is already experiencing the effects of climate change, and it's critical that permits or certifications include adaptive management provisions such that operations can respond to current and upcoming stressors resulting from climate change.

#### **DEQ Response:**

See the Response to Comment #12.

### **73. Comment (Shoshone-Paiute Tribes p.2):**

The Tribes are quite concerned about the failure to mitigate for temperature issues that impact anadromous and resident fish below the project. Under the current proposal, the States would allow seasonal fluctuations in the Snake River temperature regime that would range from 13-16 degrees Celsius. The initial position taken by the DEQ and other interested parties was to maintain a temperature of 13 degrees C or lower to protect fall Chinook populations in the Hells Canyon Reach of the Snake River. IPC presents several laboratory studies to affirm their position that the existing flow regime does not appreciably reduce the likelihood of survival for all life stages of fall Chinook. However, it should be noted that the very studies presented demonstrate that the current temperature regime allows for spawning, but it is not optimal for anadromous fish. Unfortunately, the proposal does not list any measures to decrease the temperature to the optimal regime.

The Tribes have reservation with the concept of proceeding with the proposed criteria for temperature regimes below HCC, without the call for further and future research. Especially, given forecasts of future climate change. Although the science appears to demonstrate that tolerance levels for the focal species may be higher than initially anticipated, it is noteworthy that Idaho Power seeks to implement a temperature regime that rises dangerously close to the point where higher levels of mortality occur. The Tribes would like to clearly state that we are

unequivocally opposed to lowering the water quality standards associated with the Hells Canyon Complex.

**DEQ Response:**

Please see the Response to Comment #67.

**74. Comment (Shoshone-Paiute Tribes p.3):**

The Tribes do not see how the proposal meets the requirements of the DEQ's while the total phosphorous inflow levels are to be maintained at 70 mg/L which is well above reasonable thresholds considering that algal blooms are already occurring seasonally throughout the HCC. The Tribes feel it would be beneficial if measures were implemented requiring a reduction of total phosphorous to 30 mg/L within the project as a component of the certification. The proposal suggests the need to reduce algal blooms. However, it is difficult to imagine how these goals will be met without the issue being addressed in this certification process.

Dissolved oxygen levels within the HCC are well below water quality standards and should be considered detrimental to ESA listed species within the project area. The coldwater within the HCC primarily comes from stratified un-oxygenated water. The Tribes believe Aeration structures should be installed within the HCC, particularly at Brownlee Dam, though Oxbow and Hells Canyon Dam could be reasonable location as well.

**DEQ Response:**

See the Response to Comment #69.

**75. Comment (Shoshone-Paiute Tribes p.3):**

The Tribes are extremely opposed to issue regarding the proposed approach in the certification process to methyl-mercury. The Tribes feel that there is not a current plan in place and are uncomfortable with allowing up to six months for the USGS to create a predictive model for methyl-mercury, and if that timeline is not met then IPC would be allowed further time to complete the predictive model. The plan appears to be a "wait and see" approach. The Tribes would like to see an adoption of temporary standards issued with the certification and a reasonable metric and timeline for reducing the overall production of methyl-mercury within the project.

**DEQ Response:**

See the Response to Comment #14.

**76. Comment (Shoshone-Paiute Tribes p.3):**

The Shoshone-Paiute Tribes were not included in these settlement discussions and were left without access to any anadromous fisheries. To fully mitigate for the continuing existence of the HCC within the next license period, the Upper Snake River tribes (USRT) propose to augment

existing hatchery mitigation with new production capacity and reestablishment of harvestable populations into suitable or restored habitats. The Shoshone-Paiute Tribes feel deeply threatened by this settlement agreement because it appears, just as in the past, they have been left out of the settlement agreement. The Tribes have been continually working with the State of Idaho on Ceremonial fishing opportunities for the past several years. It appears that this settlement has negated all the progress the Tribes and State have made.

**DEQ Response:**

See the Response to Comments #3, 10, and 21.

**77. Comment (CRITFC p.1):**

Elevated levels of methylmercury in fish tissue and sediment is a primary concern of the CRITFC tribes. High levels of methylmercury in fish harvested from the Hells Canyon Complex (HCC) area and downstream directly affects the health of tribal members. Fish consumption advisories as the sole solution to the problem are not acceptable and interfere with the treaty rights of tribal members to take and consume fish. The question of Project responsibility for conditions that promote methylation in the system remain unresolved at this time. As noted in the IPC Application (2018), current data from Brownlee Reservoir indicates that the Reservoir sediments have average levels of total mercury but high levels of methylmercury. IPC (2018) Figure 6.6-8 records methylmercury in other Western lakes and reservoirs. The median level of methylmercury at Brownlee is an order of magnitude higher at 12.5 ng/g (dry) which strongly suggests a correlation between Project operations and methylmercury production.

In addition, preliminary data from the USGS (Stakeholder Meeting, Boise, ID, February 8, 2017) indicates that Brownlee Reservoir is primarily responsible for the methylation in the HCC. Therefore, implementation of a mercury management plan by Idaho Power Company (IPC) at the Project as soon as possible will be essential in assuring compliance with mercury and methylmercury criteria in both OR and ID.

The 401 Certifications require that IPC produce a methylmercury management plan to address the role that the Project has in violation of mercury human health criteria. The certifications require this plan only at the completion of the USGS study, which fails to address the urgency of the situation. The USGS has now documented its multi-year evaluations of methylmercury in the water column and sediment by season, depth, and concentration. This information should be used to inform adaptive management strategies that should be implemented before the end of the USGS study.

CRITFC recommends that the Draft Clean Water Act § 401 Certification Conditions for the Hells Canyon Complex Hydroelectric Project be modified as follows:

***VIII. Mercury***

***A. Required Actions:*** *IPC shall take the following actions, which are further detailed in the conditions set out below, to comply with the applicable criteria (OAR 340-041-0007(10) and OAR 340-041-0033(1), (2) and (3); IDAPA 58.01.02.210.01):*

*1. IPC shall continue to assist in funding the U.S. Geological Survey (“USGS”) mercury and methylmercury study as described in Section 6.6.2.2.1 of the Application, which includes the development of a predictive model.*

*2. IPC shall update the DEQs and affected tribes annually on the progress of the mercury and methyl mercury studies with USGS.*

*3. If USGS fails to complete the study, then IPC shall complete the study and develop the predictive model.*

**DEQ Response:**

See the Response to Comments #14 and 43.

USGS will provide annual updates about their most recent mercury monitoring and modeling for the HCC at their annual stakeholder meetings.

**78. Comment (CRITFC p.2):**

The DEQs both require that IPC continue to fund the USGS in the development of a predictive model and provide reports on the key processes that influence methylmercury production in order to develop an effective management plan. Providing a report alone is insufficient to allow full peer review.

- The predictive model that is developed by either the USGS or by and IPC contractor should follow the US Government’s Federal Source Code policy to improve availability and review. The model, including software, data/databases, data preparation software, dependencies, data/databases shall be made accessible to states and tribes and be accessible via a public repository.
- The predictive model shall be independently tested and peer reviewed. Review reports shall be made available to states and tribes.
- Technical staff from tribes and states should be able to independently reproduce the modeling results.

**DEQ Response:**

Federal source code policy does not apply to private companies and therefore we are unable to make that a requirement for IPC. USGS is obligated to comply with applicable federal policies.

**79. Comment (CRITFC p.2):**

Recommended Additions: Require IPC to immediately begin developing a series of mercury management scenarios to evaluate how to minimize the Project’s effect on methylmercury production and limit violation of the human health criteria in Idaho and Oregon and incorporates strategies from Oregon’s Willamette Basin Mercury TMDL process.

### **DEQ Response:**

Please see response to Comment #14. It is not appropriate to implement studies based on the Willamette Basin in the HCC.

### **80. Comment (CRITFC p.3):**

The 401 Certifications should require that IPC immediately develop a methylmercury management plan based on findings already gathered from the USGS multi-year evaluations of methylmercury in the water column and sediment by season, depth, and concentration. This information together with an adaptive management strategy could lead to implementation well before the end of the USGS study.

- • IPC shall implement actions that are consistent with a Management Plan and evaluate the results of these actions.
- • The Mercury/Methylmercury Management Plan shall be submitted for outside peer review and alternative assessments. Review reports shall be made available to states and tribes.

### **DEQ Response:**

Please see Response to Comment #14. DEQ may consider opening the Management Plan to public review at a later time.

### **81. Comment (CRITFC p.3):**

Water temperature is an important environmental component that significantly affects fish health and tribal resources. The extensive development of the Snake River watershed upstream of the Project that began in 1900 and resulted in large volumes of water storage and heating in hydro reservoirs, water withdrawal for irrigation, riparian vegetation removal, and channel straightening has contributed to a significant elevation of Snake River water temperatures. In fact, much of the anthropogenic thermal load upstream of the Project can be associated with impoundments owned or operated by Idaho Power Company (IPC) and are cumulative to the Project's internal effects. While the Project may have some beneficial thermal effects in July-August within a highly damaged system, it still causes significant thermal problems in other months (e.g., September-October).

IPC has yet to demonstrate that (1) enough restoration projects are assured that the restoration will be effective in reducing water temperatures of HCD outflow, (2) thermal restoration can be accomplished in the timeframe of the license, (3) natural fall Chinook viability can be maintained during the timeframe in which restoration projects are sought, and (4) compliance with current WQS would occur within 30 years.

<NOAA's comments cited> Current and anticipated ocean conditions (and by inference climate conditions) and the current status of SR fall Chinook are not sufficient bases to conclude that water temperature is not an important limiting factor to long-term viability of the population.

## **DEQ Responses:**

The Freshwater Trust has demonstrated that restoration projects are effective reducing water temperatures. Please see IPC Application, Exhibit 7.1-5 (IPC 2018) as well as DEQ's Response to Comment #13.

Please see Response to Comment #12. In addition, IPC is not the sole contributor of thermal load in the HCC and is not solely responsible for the mitigation.

DEQ believes that our 401 certification is addressing the temperature obligation that IPC has to the HCC.

## **82. Comment (CRITFC p.4):**

Several issues arise from the revised Oregon water temperature criteria:

1. A numeric criterion of 20°C for mainstem migration, followed by a 13°C criterion for spawning naturally implies that there will be a transition from peak summer water temperatures to initial optimum fall spawning temperatures. The NSTP should be interpreted to assure that temperatures decline during September, leading to the start of fall Chinook spawning. High temperatures created by the reservoir's thermal shift should not result in adult holding in high temperatures.

2. IPC has asserted that there are sufficient numbers of cold-water refugia that are sufficiently distributed to protect adult holding. The availability and use of cold water refugia must be demonstrated by agreed to field methods and observations to be acceptable. The use of rainbow trout as indicators of thermal refugia for fall Chinook salmon is not appropriate.

### **DEQ Response:**

- 1) This comment pertains to Oregon water quality standards and is not germane to Idaho's certification.
- 2) IPC identified locations they believed to have sufficient aquatic life refugia. CRITFC is encouraged to share science supporting the assertion that rainbow trout are inappropriate as field indicators for thermal refugia.

## **83. Comment (CRITFC p.5-7):**

The statement that laboratory and field studies support a standard of 16.5°C as "fully protective" of fall Chinook spawning is not accurate. EPA (2003) shows that the optimum standard is 13°C. The laboratory studies mentioned above reduce to a single study by Geist et al. (2006) that is fatally flawed because it does not represent pre-spawning thermal history and upstream migration stresses experienced by naturally-migrating Chinook. IPC (p. 33) claims that "full protection" is afforded by 13°C, 14.5°C, and 16.5°C. If one were to believe the Geist et al. (2006) report applies to natural spawning, an incubation regime starting at 16.5°C in a declining temperature scenario provides 100% survival but an increase of only 0.5°C above this would cause 100% mortality. This study outcome is not a typical biological outcome and is far from a fully protective standard.

The 7DADM HCD outflow temperature exceedances for the period 1991-2017 showed (IPC, 2018, Figure 6.1-4) that temperature exceedance above 13.3°C (on October 29) ranged from 1.1 to 4.6°C. The high exceedances occurred in low flow years. Periods of exceedance ranged from 1 to over 3 weeks.

IPC stated: *A summary of this information is presented below and suggests that while there are documented criteria exceedances during the first 2 weeks of the SRFC salmon spawning period, the beneficial use of salmonid spawning is being supported downstream. (IPC 2018, p. 56)*

The statement that beneficial uses are supported is misleading. Criteria exceedances so far have ranged up to 3+ weeks. “Full support” cannot be achieved with temperatures of 16.5°C. Unsubstantiated assurances that the population is doing well enough (due to tribally led hatchery supplementation), that there might be sufficient coldwater refugia, and a belief that the fatally flawed Geist et al. (2006) study is substantial scientific evidence are not acceptable.

The following IPC statement obscures the science of temperatures for spawning (IPC, 2018, p.

61): *Because SRFC salmon spawn during a declining fall thermal regime in all environments, earlier spawners initiate spawning in temperatures warmer than later spawners. In the Snake River, under the current thermal regime, spawning can initiate in water temperatures exceeding 16°C. Similar observations of spawning occur in other fall Chinook salmon populations, including the Hanford reach of the Columbia River.*

This statement says nothing about gamete and embryo viability. Geist et al. (2006) held adults at 12°C until spawning. Embryos were placed then into declining temperature regimes that started at 17°C, 16.5°C, etc. to measure survival. Unlike Snake River fall Chinook, the adults used in Geist, et al. did not migrate upstream more than 400 miles while being subjected to mainstem temperatures as high as 24°C or hold below the HCC in high water temperatures and low DO.

The potential for cumulative impact of high temperature and low DO on the gametes of these adults or in producing elevated pre-spawning mortality is significant and was not part of the Geist study. Although IPC identified two other studies that used declining temperature regimes, they too used very protective pre-spawn adult holding and spawning temperatures. The Olson, Nakatani, and Meekin study that was reported for a declining regime starting in October showed a clear elevation of mortality at an initial temperature of 14.5°C. But just as for Geist et al., this study employed unnatural pre-spawning conditions.

According to IPC, the first documented observations of spawning in the Marsing Reach (IPC 2018, p. 62) were from:

*An observation reported by Evermann from an interview with a seine fisherman near Glenns Ferry (RM 539) reported observing carcasses through the first half of November. Similarly, below Swan Falls Dam, Zimmer (1950) reported 3 redds observed in the first week of October 1947, with a peak number of redds counted on the November 6 flight, and spawning was generally completed by the end of the first week in December.*

However, the actual reports by Zimmer make it clear that spawning historically commenced in late September and peak spawning occurred before October 17.



The extant population of SRFC may have adjusted peak spawning in relation to the thermal shift, but this does not mean that correction of this shift would not be beneficial to the population.

**DEQ Response:**

Thank you for your comment. At this time, the information provided is beyond the scope of Idaho's 401 certification.

**84. Comment (CRITFC p.7):**

EPA letter to Barry Burnell (Sept. 27, 2006) "There is a significant body of scientific evidence that indicates that temperatures less than 16.5°C are needed to protect both gametes in holding adults just prior to spawning and the eggs after they have been deposited in the gravel."

<References EPA letter to Marilyn Fonseca (Jan. 28, 2011)>

NOAA (2016), in its 5-year status review of fall Chinook developed two primary scenarios for delisting fall Chinook. One involves developing two populations, one of these being a viable population above HCC. Since IPC considers this to be impossible, the remaining Scenario B becomes critical. The terms of NOAA's scenario B are:

*Scenario B – single population measured in the aggregate: Scenario B illustrates a single population pathway to ESU viability with VSP objectives evaluated in the aggregate (population wide), based on all natural-origin adult spawners. This single population viability scenario recognizes that the spatial complexity and the associated ability to support life history diversity of the Lower Snake River population provides an opportunity to achieve the basic ICTRT viability objectives for protection against demographic and catastrophic loss as well as providing for diversity. The scenario focuses on the extant Lower Mainstem Snake River population and would require that population to achieve **highly viable status/very low risk** [emphasis added] with a high degree of certainty. In this scenario the population would need to demonstrate that it is exceeding the 1% viability curve (including the minimum abundance threshold of 3,000 natural origin spawners) plus a buffer reflecting prevalent statistical uncertainty levels.*

In order to develop a single SRFC population that has highly viable status with very low risk, the IPC will have to do much better than propose a water temperature standard that is closely proximate to high embryo mortality.

**DEQ Response:**

DEQ agrees that the first IPC request for a site-specific temperature criteria in the Snake River below the Hells Canyon Dam was requested at 16.5 °C. DEQ did not act upon that request. IPC's second site-specific temperature criteria request was restricted to a 14 day time period (October 23 through Nov 6) and proposed a lower temperature (14.5°C) than the first request. DEQ has adopted the IPC's second request into the water quality standards and has submitted it to EPA for approval. See the Response to Comment # 23 regarding the basis for the required thermal benefits in the final 401 certification.

### **85. Comment (CRITFC p.8):**

Several upstream and tributary TMDLs have been completed, others are currently in process; still others will be initiated in the near future that may affect the water quality in the SR-HC TMDL reach. (IPC 2018, p.36)

While assurances such as these sound good, they may amount to very little. IPC reported that the Payette TMDL was judged by IDEQ to not be worth developing because of upstream habitat conditions and warm water.

#### **DEQ Response:**

DEQ has not received the above referenced IPC comment. Please visit DEQ's TMDL website to see the widespread work that DEQ has completed in the Payette River Watershed.

### **86. Comment (CRITFC p.8 & 9):**

The Snake River unregulated flows at Weiser estimated from USACE methods for an average flow year show that flows in June and July were about 2x greater than current measured flows. Also, flows in October were about 2x greater also in the unregulated condition at Weiser than in the current regulated status. The massive difference in flows makes it doubtful that the water temperatures measured by the USACE in the 1950s, which IPC takes as reflective of the natural condition, were representative of unregulated temperatures. Granted, the HCC was not present at that point in time, but most of the upper river hydro development had already taken place and agricultural development was also significant in the Snake River Plain. The much higher unregulated flows in May-July would undoubtedly have moved fall Chinook smolts downstream more rapidly, thus avoiding higher summertime temperatures. There is also good evidence (presented in previous CRITFC comments) that spawning in the Marsing Reach commenced in late September in the 1950s based on report by Zimmer. Data by Zimmer (1950) show that a high proportion of total spawning occurred from late September to October 17 in 1947 and 1949. Early spawning and early smolt migration at higher flows would have been much more conducive to survival.

Although IPC-owned dams account for 29% of total storage in the SR-HC TMDL study area, IPC has a substantial role in hydro operations. For example, even though American Falls reservoir is owned by USBR, IPC built the dam's power plant with three generators in 1976. The large Owyhee Reservoir is owned by USBR, but the power is bought by IPC. IPC built the power plant on Milner Dam and loaned the Milner Dam company the money to rebuild its dam. IPC is not the owner, but it is significantly involved in construction and operation of hydro facilities above the HCC.

#### **DEQ Response:**

This comment pertains to the ownership and operation of dams, reservoirs, and hydroelectric facilities outside the HCC and is thus beyond the scope of the 401 certification for the HCC.

### **87. Comment (CRITFC p.10):**

It has not been established that there are cold-water refugia suitable for fall Chinook in the SR between the Clearwater and HCD. The water temperature of tributaries entering the SR below HCD may be  $\geq 2^{\circ}\text{C}$  colder than the Snake River, but most of the tributaries other than the Innaha, Grande Ronde, and Salmon R entering the Snake have Sept-Oct flows that are so low they do little to cool the Snake River even in a protected alcove. Also, these same tributaries were shown to be so steep, rocky and shallow that they, themselves, would provide no Chinook holding habitat.

#### **DEQ Response:**

There are no requirements for thermal refugia in Idaho Water Quality Standards; therefore, this comment is beyond the scope of Idaho's certification.

### **88. Comment (CRITFC p.10):**

The HCC creates a thermal shift that is frequently three weeks in duration in which water temperatures in HCD outflows are greater than Brownlee Reservoir inflows. This temperature exceedance would not be present if not for the presence of the HCC. IPC gives the HCC credit for cooling the HCD outflow in summer because of the ability of Brownlee Reservoir to store and release large volumes of cold water. However, the Snake below HCD does not meet water temperature standards in September, a month where fall Chinook begin holding below HCD. The HCC may have some beneficial thermal effects in July-August within a highly damaged system, but it still causes significant thermal problems in other months (e.g., September-October).

#### **DEQ Response:**

DEQ agrees that the HCC creates a thermal shift. This is addressed in the TMDL and the 401 certification (section II).

### **89. Comment (CRITFC p.10):**

Mere repetition that there is abundant coldwater refuge habitat does not make this real. IPC states (p. 48) that the SR-HC TMDL concluded that, "the HCC is not responsible for elevated Hells Canyon temperatures in the summer months and, therefore, continued operations of the HCC following relicensing will not cause or contribute to a violation of either the  $19^{\circ}\text{C}$  Idaho or the  $20^{\circ}\text{C}$  Oregon numeric criteria."

A report by Connor et al. (2018) summarized results from Mann (2007) where embryo loss (%) from fertilization to button up was related to degree days above  $20^{\circ}\text{C}$  accumulated by 15 female fall Chinook equipped with temperature loggers between Ice Harbor Dam and LGD in 2004. This study showed that embryo loss was in the range 2.2-2.8% when degree days exceeding  $20^{\circ}\text{C}$  were accumulated for the 7-10 days spent swimming from IHD to LGD. But embryo loss was 3.8 to 9.0% for degree day excess ranging from 10.08-19.74. In 2004 the 7DADM temperature on October 29 was  $16.3^{\circ}\text{C}$  below HCD but was as high as  $17.9^{\circ}\text{C}$  in 2015. Further,

this thermal exposure encompassed only about a week of exposure and migration was not allowed above LGD.

By contrast the Geist et al. (2006) study held females at only 12°C. Also, they reported that survival from fertilization to the eyed egg stage ranged from about 3 to 12%, across the initial temperatures in the declining temperature regimes. Because gametes from 10 males and 10 females were combined at the start, the effects of instream migration and temperature exposure on individual mating batches up to LGD were obscured. Just as with the Mann (2007) study, the adults spawned in the Geist et al. (2006) were collected in 2004. Thermal exposure in other years has been considerably higher and exposure in the weeks following passage above LGD would have conferred additional degree day accumulation above 20°C. Consequently, one would expect much greater impact to early embryo survival under these conditions.

Connor et al. (2018) also reported the results of the Mann (2007) study. Here, Mann found that degree days >20°C “was directly proportional to embryo loss and explained 32% of the variation in embryo loss.” Connor et al. (2018) noted the sharp increase in embryo mortality above 16.5 °C. They state that the Geist et al. (2006) reported an increase in mortality of 10.9 percentage points for every 0.1 °C increase in temperature above 16.5°C. We should not manage the SR at this dangerous level. Connor et al. (2018) also state:

*Secondly, it was possible that embryo loss would have been higher in the warmer temperature treatments had the fish been spawned and the eggs fertilized at the treatment temperatures.*

Their reason for not attempting to capture, transport, and hold adults at 20 °C migration temperatures is that adult mortality is extreme at those temperatures. This statement by Connor et al. supports the position held by CRITFC, expressed in numerous comments submitted to ODEQ and EPA, that likely impacts to adults and gametes during the pre-spawning and spawning period are significantly underestimated.

During migration from BON to LGR, 76.2% of fall Chinook had exposures to temperatures  $\geq$  20°C (Keefer et al. 2018). Some SRFC adults that were tagged had body temperatures that exceeded 22°C (Keefer et al.). There has already been a 2.5°C increase in summer water temperatures that has occurred over the past several decades (Keefer et al. 2018). Salmon spawning in the Hanford Reach have apparently adjusted migration timing to target both sides of the historical run peak so as to avoid the most extreme temperatures (Keefer et al. 2018). Future behavioral adaptation by SRFC to increase migration rate to minimize exposure to cumulative thermal stress is unlikely given that they already move upstream at rates near their energetic limits (Keefer et al. 2018).

#### **DEQ Response:**

Thank you for your comment. This is not germane to Idaho’s 401 certification.

#### **90. Comment (CRITFC p.11):**

*Therefore, in this section, IPC presents its understanding of the intent behind the criterion and its application to the HCC. Like the refugia criterion, the NSTP criterion is intended to minimize the exposure of migrating fish to peak 20°C or greater temperatures. (IPC 2018, p. 51)*

IPC lays out its “understanding” of the intent of the NSTP to suit its needs. That is, it defines it in such a way that it is not responsible for a natural rate of temperature decline during September that would result in optimal spawning temperatures by October 23. Setting temperature criteria of 20°C and 13°C does not imply that it is acceptable to maintain temperatures near 20°C until spawning, at which time the temperatures must drop immediately. Producing a normal rate of temperature decline would reduce the exposure of adults to cumulative thermal loading.

**DEQ Response:**

Thank you for your comment. This topic is not germane to Idaho’s 401 certification which is based on Idaho’s existing water quality standards.

**91. Comment (CRITFC p.12):**

IPC states (p. 57) that: *The thermal environment below the HCC now supports incubation and emergence timing similar to the historic habitats upstream of the HCC, whereas historically the HCC was a colder incubation environment that would have delayed emergence timing.*

This is not correct. Historic spawning in the SR above the HCC commenced in late September. The idea that initial incubation temperatures can be safely raised to as much as 16.5°C with no consequence is a flawed argument based on test conditions in the Geist et al. (2006) study that in no way represent in situ conditions. Reducing river temperatures to meet spawning standards, provided this is combined with a natural rate of temperature reduction leading to spawning, will result in earlier spawning initiation (or a greater proportion of the population initiating spawning early), followed by greater time allowance for accumulating sufficient incubation degree days for emergence.

Despite this variability, adult migration and spawn timing has changed very little over the period of record. This suggests significant plasticity in their ability to adapt and function in variable thermal regimes and a reliance on more stable cues for these events, such as a photoperiod. (IPC 2018, p. 57)

CRITFC has presented evidence that even within the limited “period of record” available, which extends from the mid-1950’s to the present, spawning prior to the HCC in the Marsing Reach commenced in late September. Heavy reliance on species’ plasticity is a convenient management crutch, but there are limits to this. Thermal stress in the SR migration pathway and in the SR below HCD is already at high levels. It is reasonable for managers of this population to insist on precautionary actions to achieve compliance with known optimal spawning temperatures occurring at recent historic time periods.

**DEQ Response:**

IPC’s thermal obligation has been determined based on a 13.3°C standard. DEQ does not have and is not applying 16.5°C as a salmonid spawning criterion.

**92. Comment (CRITFC p.12 & 13):**

IPC described the difference in smolt outmigration survival rates for early vs. late outmigration

(p. 63):

*The sub-yearling SRFC salmon that begin moving downstream the first week of July (after flows begin to decline and downstream reservoirs warm) survive at rates of only 5 to 20%, whereas those that initiate movement earlier (in late May) survive at rates of 65 to 90% (Connor et al. 2003; Smith et al. 2003).*

Early outmigration is beneficial for enhancing survival for naturally-spawning Chinook. However currently, late spawning occurs in the second week of December when water temperatures have declined significantly below HCD (IPC 2018, p. 61):

*The peak spawning period (the median distribution of redd observations for the years 1993–2009) is November 4. The latest spawning observations are generally near the second week in December.*

Prolonging the date of completion of spawning by maintaining the current thermal shift subjects more of the population to initial low temperature incubation and delay in emergence for that segment of the population that spawns very late, leading to later emergence and lower downriver survival for the age-0 juveniles.

#### **DEQ Response:**

Thank you for your comment. DEQ agrees that the HCC creates a thermal shift. Please see response to Comment #88 above.

#### **93. Comment (CRITFC p.13-15):**

IPC does acknowledge the potential effects to gamete viability due to pre-spawning adult migration (IPC 2018, p. 64).

*Concern relative to thermal regimes on adults relates primarily to adult migration periods, the potential of pre-spawn mortality, and potential effects to gamete viability. A temperature data set from 1954 to 1957 for the Central Ferry location (approximate location of present-day Lower Granite Dam) was used for comparative purposes to reflect conditions in the Lower Snake River before the construction of the HCC or any of the lower Snake River dams (Figure 6.1-12).*

Figure 6.1-12 (p. 65) shows that the Central Ferry water temperatures from 1954-1957 (representing a location close to present-day LGD) as well as the pre-HCC temperatures for the same time period at RM 273 were both much (approx. 3.5°C) lower than the current HCD outflow temperatures for the period from October 1-November 1. These were daily average water temperatures, so the maximum temperatures would be higher. IPC, in emphasizing the flawed Geist et al. (2006) study, uses these results to argue that survival between 13°C and 16.5°C is so good that it can count the high degree days accumulated as a positive result that should lead to early emergence. Water temperature records from RM 100 and RM 273 were very similar for this period in the mid-1950s. Central Ferry water temperatures were even as much as 6°C lower than current HCD outflow temperatures in late August through early September. Further, no one assumes that temperatures recorded in this time period at RM 273 reflected predevelopment conditions. Consequently, the HCC is operating within a river system that had

already been heavily degraded and IPC then wishes to claim credit for making a bad situation a bit better by HCD outflow eliminating a few temperature peaks early in the fall Chinook migration period. IPC mischaracterized its temperature records in Figure 6.1-12 (IPC 2018, p. 65):

*However, early-arriving adults would experience a lower maximum temperature today than during the pre-HCC condition. Temperatures in all the thermal regimes examined, including present-day thermal regimes, would have dropped below the 20°C migration corridor standard by mid- to late-September.*

Temperature records that IPC displayed for RM 273 (pre-HCC) were far lower from mid-September through November 1 than are currently found below HCD. These temperatures would affect fall Chinook that moved up the SR past the Clearwater River in September. Again, IPC relies on temperatures declining below 20°C while ignoring the NSTP concept. Also ignored is the concept that cumulative thermal load involves not only temperature but time of exposure to high temperatures. Because metabolic stress is cumulative, it can also not be assumed that temperature between 20°C and 16°C has no effect. That is, it is not adequate to consider cumulative stress as only degree days above 20°C. IPC compares adverse conditions in the Snake River affecting fall Chinook there with conditions in the Hanford Reach of the Columbia River (IPC 2018, p. 65):

*However, under the present-day HCC thermal regime, no evidence exists that pre-spawn mortality is different from that which occurs in other reaches (e.g., the Hanford reach). This is based on fish-to-redd ratios observed over the last 2 decades (Groves et al. 2007).*

Conditions in spawning areas of Hanford Reach are typically better than in the SR below HCD.

However, water temperature in the Columbia River has also been significantly elevated over the past several decades as CRITFC has illustrated in the past with temperature records (see past analysis by CRITFC, and Keefer et al. 2018). In addition, pre-spawn mortality is extremely difficult to assess in large rivers. Decomposition rates are typically rapid, and scavengers frequently remove carcasses. Annual variation in fish-to-redd ratios can obscure variations that are due to annual variations in water temperature effects on pre-spawning mortality. Also, fish-to-redd ratios that are observed vary extremely from site to site within a spawning area depending upon the quality of the spawning gravel. The likely large differences in spawning gravel quality between the Hanford Reach and the SR below HCD make it inappropriate to infer that a conclusion of minimal pre-spawning mortality in the Hanford Reach also applies to the SR.

#### **DEQ Response:**

This comment is directed at IPC. See the Response to Comment #45.

#### **94. Comment (CRITFC p.15-17):**

IPC lays out a framework for addressing its “small margin” of thermal load by suggesting that this will require several decades of work and coordinated efforts (IPC 2018 p. 155):

*The SR–HC TMDL explains that due to the sparseness of data and the size and complexity of the watershed, implementation of the SR–HC TMDL would necessarily be an iterative process with the attainment of water-quality standards occurring over a period of several decades, requiring significant, long-term and coordinated efforts from all pollutant sources in the watershed.*

IPC then suggests that it is “data” that “confirms” that the temperature regime below HCD poses no risk to SRFC (IPC 2018 p. 155):

*More recent data, including the record before the IDEQ supporting the approval of Idaho’s site specific criteria on March 29, 2012, confirms this earlier finding and that the current temperature regime below HCD does not present an identifiable or immediate risk to salmonid spawning.*

This conclusion was primarily a best guess, but one with the caveat that current impacts were likely, and that it didn’t seem that the population was currently threatened. But again, this came with the caveat that recent ocean conditions were favorable and that the population is significantly aided by supplementation. The conclusion of temperatures below HCD being protective were made largely in the absence of data. Studies available on the effects of temperature on the spawning regime (EPA 2003) suggest that conditions are beyond the upper end of optimal. In this range, further increases could present serious negative consequences. For this reason, it can be argued that current conditions below HCD have pushed the SRFC to a critical zone where further increases could be very damaging. This could happen with future climate change impacts, further water withdrawal upstream, impacts to the hatchery system, etc. There is no reason to allow HCD outflows to operate close to the zone where impacts are increasing.

IPC cites both DEQ and NOAA again as saying that current thermal conditions are not having a detrimental effect on SRFC spawning (IPC 2018, p. 156).

*This conclusion supports the decision to adopt the SRSP and, the feasibility of implementing the program over a period of years, because the beneficial use is not being adversely affected during the implementation period.*

This statement is highly speculative. It is not really known to what extent the SRFC will be affected during the implementation period as conditions (e.g., climate, flows, hatchery production) change during the implementation period. IPC then blurs the science concerning thermal impacts on spawning and incubation (IPC 2018 p. 156):

*NOAA also referenced that data indicates that temperatures above 17°C may have detrimental effects to newly fertilized and incubating SRFC embryos and stressed the importance of continuing the “monitoring programs that document passage timing, red counts, and river temperatures in order to detect changes and assess their effects on” SRFC. (NOAA 2017).*

IPC has already admitted that mortality at 17°C is 100%, so saying that these effects “may” be detrimental is a great understatement. Monitoring redd counts will not provide meaningful evaluation of actual biological impacts. If it is assumed at the outset that temperatures of 17°C during spawning are only a possible concern, the management reaction that would provide meaningful change is unlikely.



IPC stated that NOAA agreed that while installing a TCS at Brownlee might result in earlier spawning, but that this benefit would be lost due to earlier exposure to temperatures of 13 °C

(IPC 2018 p. 208):

*Using the Corps modeling results, IPC, in conjunction with NOAA Fisheries, subsequently completed an analysis of the effect of changing the outflow temperature from Hells Canyon Dam, by installing and operating a TCS in Brownlee, on the timing of emergence of juvenile fall Chinook below Hells Canyon dam and the survival of those juveniles at the Lower Granite tailwater. Generally, this analysis concluded that installing a TCS at Brownlee and operating the structure in low water years to cool outflows in an attempt to meet the salmonid spawning water quality standard of 13° C below Hells Canyon Dam offsets any benefit of attempting to influence earlier emergence of juvenile fall Chinook from operating the TCS for spring warming.*

This represents faulty logic. If the entire spawning population is shifted to an earlier spawning date than currently is the case because of the thermal shift, then the larger component of the population that currently is spawning at much lower temperatures can also spawn earlier and take advantage of warmer initial incubation temperatures. IPC and NOAA have not taken a broader population perspective. Rather they have relied on the faulty assumption that a small percentage of the population spawning at 13 to 16.5° C produces a great benefit, whereas it is actually detrimental to survival. Using models of emergence timing vs. temperature, it is easy to multiply numbers to infer high development rates. Meeting optimum temperature standards during more normal time thresholds by use of a TCS does not mean that all temperatures extending into November become lower. IPC and NOAA apparently are assuming that meeting standards by October 23 means that temperatures in November and December become affected too, which is false. CRITFC has presented analysis that showed that shifting spawning to 3 weeks earlier, followed by a declining temperature regime that met existing criteria provides sufficient degree days to compensate for the earlier spawning time.

IPC states that it expects that the DEQs will review their Annual Reports to confirm that thermal audits of SRSP projects were implemented (IPC 2018 p. 195). Any audits must be based on actual field measurements, not modeled assumptions.

The proposal to change the spawning temperature criterion to 16.5°C (IPC 2010, Proposal to initiate negotiated rule making for site specific temperature criteria...) essentially changes the date of compliance with 13°C from October 29 to November 11 (IPC 2010, p. 1). In their 2010 SSC proposal, IPC's own outside expert, Dudley Reiser stated:

*Although the comments addressed a number of life stage elements of the reproductive phase of the Chinook life cycle, the general theme of the comments relative to Chinook spawning and egg incubation was that a temperature criteria set at 16.5°C was too close to published threshold temperature values that have been found to be detrimental to embryo survival. IPC in their revised proposal apparently considered these comments, and has appropriately modified the proposal to the 14.5°C criteria inclusive of the primary spawning period of fall Chinook salmon (from October 23 to October 30), with a further reduction to 13°C from November 1 through May 15. This reduction of the initial temperature criteria should decrease the risk (compared to the 16.5°C threshold) of thermal impacts to spawning and egg incubation of fall Chinook during the early periods of spawning.*

Reiser's opinion was likely based on reliance on the IPC Geist study that he may not have critically investigated. However, now, with no further studies being presented, IPC comes back to make the case for returning to the original extreme position of moving the goalposts again to a near lethal temperature. And this is being made in opposition to their own outside expert. IPC (IPC 2018, p. 188) claims that its Plan B analysis (required by the DEQs) of an HPS was previously included in its September 24, 2010 401 application. This reportedly showed that this HPS could meet the salmonid spawning temperature criterion. However, at that time the criterion was 13°C, not 16.5°C, and 13.3°C was the IPC engineering target. Now, IPC seeks to shift the goalposts again and significantly reduce its thermal responsibility.

### **DEQ Response:**

DEQ will consider and address comments related to the temperature control structure if this is presented to DEQ by IPC as a temperature alternative measure. Currently, field measurements are occurring and temperature credits derived from those measurements can be a combination of both field measures and implementation for project uplift, which is based on existing uplift models.

In 2006, DEQ investigated a site-specific criteria request of 16.5°C but never submitted a rule to EPA. See the Response to Comments #23 and 45.

### **95. Comment (CRITFC p.18):**

The final SR-HC TMDL “imposed a temperature load allocation for the outflow from HCD of no greater than a maximum weekly maximum temperature (MWMT) of 13°C when inflow temperature to Brownlee Reservoir, defined as site potential in the SR-HC TMDL, is less than an MWMT of 13°C or no more than a 0.14°C increase in water temperature when site potential is greater than an MWMT of 13°C.” (IPC 2018, p. 13).

Using the inflow temperature to Brownlee as the site potential only ensures that as climate change creates increased upstream thermal impacts from IPC's other impoundments, the baseline will continue to increase, limiting the responsibility of the HCC for meeting fall Chinook spawning criteria. This provision runs counter to others that imply that adaptive management would occur as the climate continues to change.

The rate of migration decreases with temperature increases above 21°C (Connor et al. 2018, Keefer et al. 2018). Climate change impacts to river water temperature represents a special challenge to migrating salmonids and imposes an increased extinction risk (Fenkes et al. 2016). Fenkes et al. reported the impacts of climate change-induced temperature increases on male salmonids. The increased energy expenditure during migration at higher temperatures results in tradeoffs where reproductive competition and gamete production and viability are degraded. Delayed migration and increased temperatures are associated with negative impacts on gamete quality. While the Fenkes et al. (2016) study dealt with numerous thermal impacts on male salmonids, the known impacts on females are typically even greater than for males.

Jager et al. (2018) conducted a regional-scale climate vulnerability assessment (RCVA) to “quantify the risk of violating thermal and minimum-flow thresholds below reservoirs” using process-based and empirical models of tailwater temperature and future climate projections. Risk of thermal exceedance was projected to extend an additional 10.3 days into the fall period,

placing salmonids at increased risk. Jager et al. (2018) suggested a TCS as a logical measure to address temperature exceedance. And while riparian restoration in upstream tributaries can have a future long-term benefit, they also found that in tributaries of the Snake River basin that “simulated future temperature-exceedance events spanned an additional five to six weeks compared to the baseline period.” Cumulative upstream basin restoration of riparian and stream channel condition and streamflow could at some distant future point produce some benefit, but it is still uncertain whether this would ever be enough alone to meet WQS, given lax enforcement of TMDLs and weaknesses in the TMDLs themselves.

**DEQ Response:**

Please see the Response to Comment #12.

**96. Comment (CRITFC p.18 & 19):**

The Brownlee Operational Component is a good contribution to IPC’s Temperature Management Plan (TMP), but the operation alone is not designed to help the company achieve water quality compliance. It is a type of fail-safe operation to protect fall Chinook embryos and young of the year from catastrophe in the event that water temperatures exceed of 16.5°C, a critical threshold.

The goal of the operation is to cool HCC outflows and remain below 16.5°C as a 7DAM temperature during the salmonid spawning period. The operational component would rely on results of a temperature forecast model prior to salmon spawning. If 16.5°C exceedances are predicted by the model, Brownlee reservoir would be drafted in the Fall to provide cooler water to the spawning grounds downstream. The plan, if approved, would also lower the number of thermal units IPC would be required to provide with its stewardship program. The operational component should not be mistaken as a mechanism for IPC to meet current water quality criteria for temperature in the spawning period – it will not. In its application, IPC proposes that if temperatures exceed 16.5°C for three consecutive years, DEQ may require them to implement an alternative or supplemental measure to meet the goals of the Brownlee operational component. And, “IPC reserves the right to consider augmenting the Brownlee operational component with a modified, smaller, HPS to maintain the 7DAM spawning temperature below 16.5°C if the Brownlee operational component proves to be ineffective in the future.”

The current water quality criteria is 13°C 7DAM for spawning salmon, but as proposed, the operational component would attempt to lower instream temperatures only when pre-spawning season forecasts exceed 16.5°C 7DAM, which is dangerously close to the lethal threshold for SRFC embryos. The management threshold should be consistent with the current water quality criteria, 13°C. Additional model runs should investigate Brownlee draft scenarios to achieve current water quality criteria. Also, the decision to install a hypolimnetic pump should be based on the current water quality criteria for spawning salmon, 13°C, not the operational component’s effectiveness to reach 16.5°C.

**DEQ Response:**

The final certification (section II.A) obligates IPC to attain required thermal benefits. The required thermal benefits address IPC’s contribution to thermal loading in the HCC, nothing more. The alternative measures for temperature (section II.F) do not specify a hypolimnetic

pump; this appears in IPC's 401 application as a possibility to provide reasonable assurance that a backup mitigation measure is available should the SRSP fail. The Brownlee operational component was not designed to meet water quality criteria; it was designed to mitigate temperature in hot years.

## **97. Comment (CRITFC p.19 & 20):**

IPC is proposing three measures to mitigate the low DO conditions in the Snake River downstream of the Hells Canyon project that are caused by the project:

1. The Riverside Operational Water Quality Improvement Project (ROWQIP),
2. Upgrading turbine units with a distributed aeration system, and
3. Installing a destratification system in Oxbow Reservoir.

For the ROWQIP, a partnership with the Riverside Irrigation district, surface water diversions would be managed in a way that would maximize the volume of nutrient-rich agricultural and municipal drainage for delivery to irrigators instead of using the less the nutrient-rich waters of the Boise River. In theory, the proposed operations will allow Riverside to preferentially use water with relatively high phosphorus levels for irrigation purposes, rather than discharging it into the Boise or Snake rivers. Modeling has demonstrated that this will reduce phosphorus loads to Brownlee Reservoir as well as decrease cellular respiration and the consequential loss of DO in the metalimnion.

The actual benefits of the ROWQIP are difficult to evaluate and hinge on the central assumption that surface runoff and sub-surface seepage loads from farm land will remain unchanged after implementation of the ROWQIP. IPC considered this assumption to be conservative for four reasons (Exhibit 7.2-2 Appendix 3):

1. Research shows that typically more than 90% of phosphorus runoff from "clean-tilled row-crop" fields is in particulate form (i.e., erosion of soil). (Bjorneberg, et al., 2006, Westermann et al., 2001).
2. Research shows that soils typically have the capacity to retain a large percentage of the phosphorus applied (or delivered by source water).
3. The change in water quality anticipated for the canal is relatively small (i.e. increase of 0.13 mg/L in canal) and represents about only 3% of the phosphorus needed to produce crops.
4. On-farm water quality management has increased over last 10 years and includes nutrient management and improved runoff control.

The assumption that surface runoff and sub-surface seepage loads from farm land is not conservative and requires verification. First, IPC is responsible for reducing the load of total phosphorus, which includes particulate phosphorus. Second, soils may have the capacity to retain a large percentage of phosphorus, as is argued in the application, but this does not address the long-term effects of increased soil concentrations over time. Thus, IPC considers the potential long-term accumulation of phosphorus on agriculture lands to be inconsequential to the results of the program. This is not a conservative assumption.

IPC should be held responsible for testing the aforementioned assumption (it should have been tested and verified before submittal of the application). We realize that this will not be an easy task. Agricultural run-off is a non-point source discharge and will be difficult to evaluate.

Another challenge in evaluating the model assumption will be teasing out site-specific fertilizer application. Without verification, however, there will be no way to demonstrate, with any certainty, the actual benefits of the program, if any exist.

IPC has not included a monitoring plan for the ROWQIP but will evidently submit a plan within the first year of the new license, per the draft 401 certification. The monitoring plan should include methods to validate the assumption that surface runoff and sub-surface seepage from farm land will remain unchanged. In addition, the draft monitoring plan should be open to public comment.

**DEQ Response:**

Table 7.2-2 of IPC's application displays annual average phosphorus load reductions from ROWQIP since 2011 (IPC 2018). In some years, up to 36,000 lbs of total phosphorus have been removed from the system. The final certification (section III.B.1) requires IPC to monitor spills and what is present in the Riverside system. This is consistent as they have already been measuring and validating pounds of total phosphorus, which is confirmed through their current annual reporting.

**98. Comment (CRITFC p.20 & 21):**

IPC will be upgrading 4 of the 5 Brownlee powerhouse turbines with distributed aeration systems. These systems would passively infuse more oxygen into the turbine draft tubes. The upgrade would affect turbine units 1-4 and not turbine 5 (the largest of the 5 units). Depending on how this system is operated, the system may produce elevated total dissolved gas (TDG) levels, in exceedance of current standards. For example, in IPC's 401 application (IPC 2018, p227),

The testing results combined with simple mixing scenarios show that during times when Unit 5 is not operating, a mixed condition downstream in Oxbow could be aerated by approximately 1.9 mg/L on average and TDG may exceed 110%.

It is not clear from the information provided by IPC whether the TDG created by the distributed aeration system will be remediated by the proposed flow deflector installation at each of the dams (discussed below). If, after any Annual Report, ODEQ determines that the distributed aeration systems are not achieving or will not likely achieve an increase in DO in the outflow of Hells Canyon Dam of at least an average of 1.4 mg/L during the applicable period, IPC will provide hourly turbine operations, DO and TDG levels to the DEQs for review. In addition, distributed aeration systems should be considered at the other projects within the complex (e.g. Oxbow and Hells Canyon Dam).

**DEQ Response:**

Please see Response to Comment #49.

**99. Comment (David Ray):**

Shame on you for not wanting salmon and steelhead above those damn dams. Cowards. Force Idaho power to right the wrong they committed decades Ago when they decided to forego the fish ladder You are fools to think Steelhead and Salmon Would be expensive to get back in the waters like Boise river and Paulette Your decision makes me sick. I will follow the money

**DEQ Response:**

See Response to Comment #7.

## References

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- USFWS (U.S. Fish & Wildlife Service). 2015. *Mid-Columbia Recovery Unit Implementation Plan for Bull Trout (Salvelinus confluentus)*. Portland, Oregon. Oregon Fish and Wildlife Office.
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