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BEFORE THE IDAHO DEPARTMENT OF WATER RESOURCES OF THE STATE OF IDAHO

IN THE MATTER OF APPLICATION FOR PERMIT NO. 74-16187 (Kurt W. & Janet E. Bird)	**IDFG'S POST-HEARING BRIEF**

The Idaho Department of Fish and Game ("IDFG"), by and through its counsel of record, hereby submits IDFG's post-hearing brief in the above-captioned matter.[1]

INTRODUCTION

IDFG is an executive department of the State of Idaho, under the supervision, management, and control of the Idaho Fish and Game Commission. Idaho Code §§ 36-101—102. IDFG's mission is to protect, preserve, and manage Idaho's fish and wildlife resources. IDWR Exhibit 3; *see also* Idaho Code § 36-103(2) ("All wildlife, including

[1] The hearing was held on August 28-29, 2019, in Salmon, Idaho. At the conclusion of the hearing, the Hearing Officer gave the parties permission to submit post-hearing briefs, to be filed no later than September 27, 2019.

all wild animals, wild birds, and fish, within the state of Idaho . . . . shall be preserved, protected, perpetuated, and managed.").

As stated in IDFG's protest, IDFG is participating in this matter "to assist IDWR in the decision-making process." IDWR Exhibit 3. The "role and responsibility of IDFG" in this matter is "to provide technical information regarding the potential effects of the proposed water right on [fish and wildlife] resources and assess how any adverse effects can be avoided, minimized or mitigated." *Id.*

The Lemhi River Basin is singularly important in fish conservation and recovery efforts in the Upper Salmon River Basin, and has been the focus of years of such efforts by IDFG and other entities, including local water user groups. The Lemhi River Basin is still critically flow-limited from a fish conservation and recovery perspective. Approving the Application will further deplete stream flows that are already far too low to achieve recovery objectives, and will increase risks to ESA-listed fish species that are already at high risk of extirpation from the Lemhi River Basin.

DISCUSSION

1. HISTORICAL CONTEXT.

Historical context is important for understanding existing fish conservation and recovery efforts in the Lemhi River Basin, and IDFG's analysis and conclusions regarding the Application. IDFG presented historical evidence at the hearing through the testimony of Jeff DiLuccia,[2] his report, and several exhibits.

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[2] Jeff DiLuccia is a Fishery Staff Biologist in IDFG's Salmon Regional Office. Mr. DiLuccia is the lead coordinator of the Lemhi Conservation Program for restoring fish and wildlife resources, and supporting the recovery of ESA listed fish in the Lemhi River Basin. Ex. 201 at 27.

Prior to settlement, the Lemhi River Basin was one of the highest producing salmon and steelhead rivers in the Snake River basin. HD2F1 at 44:05-44:20;[3] Ex. 201 at 1; Ex. 204 at 219. But as settlement progressed in the Lemhi River Basin, its surface flows and stream channels were increasingly dedicated to irrigation and agricultural development, which degraded or destroyed much of the basin's high quality fish habitat. In addition, irrigation withdrawals often completely or partially dewatered portions of the Lemhi River and its tributaries, cutting off access to the basin's remaining habitat at often critical times of the year. Fish were also killed outright by stream dewaterings, and by entrainment in irrigation ditches. By the time salmon and steelhead were listed under the ESA in the 1990s, the populations of these species in the Lemhi River Basin were severely depressed. Ex. 201 at 1-2, 6, 8; Ex. 202 at 10, 15; Ex. 203 at i, 4, 18-19, 72, 102; Ex. 204 at 219-20, 220-21, 223-28.

Fish conservation and recovery efforts in the Lemhi River Basin began even before spring/summer Chinook Salmon were listed under the ESA in 1992, and subsequent efforts included local initiatives developed and implemented by Lemhi River Basin water users. Ex. 193 at 1-2; Ex. 194 at 1-2; Ex. 196 at 9 ("Lemhi Framework" at 1); Ex. 203 at i, 4, 18-19, 72, 102; Ex. 204 at 223-28. The need for ESA conservation and recovery efforts in the Lemhi River Basin became imperative in the year 2000, when dewatering of the Lemhi River at the L-6 diversion killed several juvenile salmon. HD2 F1 at 50:45-58:40; Ex. 201 at 24. As a result of this "take" of a listed species,[4] NOAA

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[3] This is a citation the first audio file for the second day of the hearing, at 44 minutes and 5 seconds into the file. All citations to the audio files of the hearing will use this format.

[4] The ESA generally prohibits the "take" of listed species. 16 U.S.C. § 1538(a)(1)(B). "Take" means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." *Id.* § 1532(19).

Fisheries[5] threatened to directly enforce the ESA against Lemhi River Basin water users, including seeking penalties and injunctions against existing water uses. Ex. 206A—206B. This led the State of Idaho to step in to assist Lemhi River Basin water users in their dealings with NOAA Fisheries. The State, Lemhi River Basin water users, and NOAA Fisheries began negotiations to develop voluntary conservation and recovery measures to minimize the "take" of the listed fish species in the Lemhi River Basin, and to obtain incidental "take" authorization for water uses in the basin.[6] HD2F1 at 58:40-1:23:39.

During these negotiations, Lemhi River Basin water user groups and state and federal agencies entered into three agreements that recognized the need to maintain and enhance instream flows in the Lemhi River Basin. Two of these were short-term agreements that established interim conservation plans to be implemented while the parties continued negotiating towards a long-term conservation agreement. HD2F2 1 at 1:04:00 – 1:12:00; Ex. 193 & 194. The interim conservation agreements called for increasing instream flows in the Lemhi River and Hayden Creek during the years 2001, 2002, and 2003, and contemplated a long-term conservation agreement to enhance stream flows and "provide sufficient water for flows for appropriate [fish] life stages in the Lemhi River Basin." Ex. 193 at 2, 4; Ex. 194 at 3-4, 6-7. In these interim conservation agreements, NOAA Fisheries agreed to not exercise its enforcement authority against

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[5] "NOAA" is the National Oceanic and Atmospheric Administration, which is part of the U.S. Department of Commerce. The term "NOAA Fisheries" refers to the National Marine Fisheries Service, an agency within NOAA.

[6] The Secretary of Commerce has authority to permit "incidental take" of listed species. 16 U.S.C. § 1539(a).

Lemhi River Basin water uses, provided the agreed-upon conservation measures were implemented. HD2F2 1 at 1:04:00 – 1:12:00; Ex. 193 at 6; Ex. 194 at 9. A third agreement, this one between Lemhi River Basin water users, state agencies, and the U.S. Bureau of Reclamation, specifically addressed "development of long term projects to improve flow, passage, and screening in the Lemhi River Basin." HD2F1 at 1:12:00 – 1:13:10; Ex. 195 at 2. IDWR was a signatory to all of these agreements.

The 2004 Snake River Water Rights Agreement (sometimes known as the "Nez Perce Settlement") was finalized shortly after the second interim conservation agreement expired. Like the previous agreements, the Nez Perce Settlement also recognized the importance of instream flows to fish conservation and recovery efforts in the Lemhi and Pahsimeroi River Basins. HD2F1 at 1:15:30 – 1:19:00; Ex. 190 at 3. This agreement also committed the parties, in consultation with the local community and stakeholder groups, to work towards a long-term "Section 6 Cooperative Agreement" for the Lemhi River Basin that would protect local water users from regulatory enforcement by NOAA Fisheries if agreed-upon conservation actions were taken.[7] HD2F1 at 1:19:00 – 1:20:40; Ex. 190 at 3.

The primary issue during the Section 6 negotiations was "flow, water, adding more water," because the Lemhi River Basin was already "severely flow-limited" from a fish conservation standpoint, and NOAA Fisheries was clear that it "wanted more water." HD2F2 at 17:00 – 17:40; *see also* HD2F2 at 9:20 – 9:40 ("In the negotiations for

[7] Section 6 of the ESA authorizes the Secretary of Commerce "to enter into a cooperative agreement in accordance with this section with any State which establishes and maintains an adequate and active program for the conservation of endangered species and threatened species." 16 U.S.C. § 1535(c)(1).

development of the Section 6, it was all about flow, and adding more flow"). The state's negotiators (the Attorney General's office and IDFG) "knew it was a challenge to acquire more water so certainly our position was we have to maintain what we've got, as it stands, and look for opportunities to try to get those flows where we can . . . . we certainly didn't want to go back, continue to decline flows that were already depleted." HD2F1 at 1:31:05 – 1:32:20; *see also* HD2F2 at 10:00 – 10:15 ("So at the very least we have to maintain what we've got at the MacFarland gage.").[8]

In the course of the Section 6 negotiations the State of Idaho, the Nez Perce Tribe, NOAA Fisheries, and the U.S. Fish & Wildlife Service entered into a "Memorandum of Agreement" regarding the use of Section 6 funding. HD2F1 at 1:21:25; Ex. 196. The Memorandum of Agreement called for the State to work with local groups and stakeholders in the Lemhi River Basin "to prioritize and implement the habitat actions identified in the Lemhi Framework." Ex. 196 at 4. The "Lemhi Framework" and its "Habitat Actions Table" were the "meat" of the agreement, in that they defined the cooperative conservation actions to be taken in the Lemhi River Basin. HD2F1 at 1:23:00 - 1:24:00.[9]

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[8] Jeff DiLuccia, IDFG's witness at the hearing, was also the State of Idaho's chief technical advisor in the Section 6 negotiations. He was the principal author of the "Lemhi Framework," the "Habitat Actions Table," and the draft Lemhi Conservation Plan. *Infra.*

[9] Exhibit 196 is a certified copy of the 2004 "Memorandum of Agreement" regarding the use of Section 6 funds and its attachments, including the "Lemhi Framework" ("Framework for the Implementation of Habitat Actions in the Lemhi River Basin Pursuant to Section II.A.8 of the Term Sheet") and the "Habitat Actions Table" ("Table 1 – Lemhi River Habitat Actions"). Citing to specific pages of Exhibit 196 can be confusing because each of these three documents is paginated separately, and moreover the Memorandum of Agreement was executed in counterpart and thus includes multiple copies of the signature page. Therefore, in this brief, each of these three documents will be cited by name rather than as "Exhibit 196," and using the page number appearing at the bottom of the cited page.

The Section 6 negotiations also led to development of a draft Lemhi Conservation Plan, a multi-chapter document that became the basis for the substantive Section 6 negotiations. HD2F2 at 13:25 – 15:40. The conservation and recovery measures of the draft Lemhi Conservation Plan were set forth in Chapter 4, HD2F2 at 15:15- 16:48; Ex. 198, which incorporated and expanded upon the conservation strategies and actions discussed in the Lemhi Framework and the Habitat Actions Table. HD2F2 at 35:25.

While the parties agreed to the conservation and habitat strategies and actions proposed in the Lemhi Framework, the Habitat Actions Table, and the draft Lemhi Conservation Plan, NOAA Fisheries insisted on something more: a minimum flow of 40 to 60 CFS at L-6, which was significantly more than the 35 CFS to which the water users had previously agreed, and also that the flow in the upper Lemhi River be increased above the existing conditions. HD2F2 at 19:55 – 20:25. The state's negotiators determined, based on consultation with local water users, that NOAA Fisheries' instream flow targets "were probably not attainable, and so negotiations broke down" without any agreement being finalized. HD2F2 at 20:25 - 20:45.

Even in the absence of a formal agreement with NOAA Fisheries, however, IDFG and others have continued and accelerated their fish conservation and recovery efforts in the Lemhi River Basin. HD2F2 at 20:45 – 22:20. These efforts have been guided largely by the Lemhi Framework, the Habitat Actions Table, and Chapter 4 of the draft Lemhi Conservation Plan. HD2F2 at 20:45 – 22:20, 37:30 – 40:00. In recent years two additional authorities have provided additional guidance for Lemhi River Basin conservation and recovery efforts: NOAA Fisheries' 2017 "ESA Recovery Plan for Idaho

Snake River Spring/Summer Chinook Salmon and Snake River Basin Steelhead," Ex. 203; and the "Upper Salmon Subbasin Habitat Integrated Rehabilitation Assessment," or "IRA," Ex. 204, which provides the most current science regarding ESA conservation and recovery requirements in the Lemhi River Basin. HD2F3 at 7:25 – 10:25.

In the absence of a formal Section 6 Cooperative Agreement or "interim" conservation agreement, these continuing efforts have been key to protecting existing water uses in the Lemhi River Basin from direct ESA enforcement actions by NOAA Fisheries. HD2F2 at 23:30 – 25:15; HD2F2 at 38:48 – 39:00. As during the Section 6 negotiations, NOAA Fisheries' continuing regulatory forbearance has been based in large part on the State's efforts to preserve existing flows at a minimum, and to acquire additional flows when and where possible. HD2F2 at 10:35 – 10:55.

2. FISH CONSERVATION AND RECOVERY ACTIONS.

Recovery of the listed fish species within the Lemhi River Basin is essential to recovery of the listed species within the State of Idaho. *See* HD2F1 at 26:00 ("The Lemhi is obviously a key priority tributary"); *id.* at 44:05 – 44:20 ("The Lemhi Basin . . . is classified as a very large producer of Chinook Salmon in the Upper Salmon Basin, it was thought to be the largest producer of Chinook Salmon"); HD2F5 at 02:50 – 03:05 (agreeing that the Lemhi Basin is "the most critical" Upper Salmon sub-basin in terms of needing to improve habitat); Ex. 203 at 29 ("The Lemhi and Pahsimeroi River Chinook salmon populations . . . are critical to salmon recovery.")

Many parties have participated in or supported these fish conservation and recovery efforts: IDFG, other state agencies such as the Idaho Water Resource Board ("IWRB") and the Idaho Office of Species Conservation, various federal agencies, the

Shoshone-Bannock Tribes, the Nez Perce Tribe, cooperative partnerships such as the Upper Salmon Basin Watershed Program, and local organizations representing Lemhi Basin landowners and water users such as the Lemhi Irrigation District, Basin 74 Water Districts, the Lemhi Soil and Water Conservation District, and others. HD2F1 at 21:35 – 23:10, 36:00 – 41:00; Ex. 201 at 8 & Appendix A. These efforts have often involved projects jointly implemented by IDFG and cooperating partners, and have included a wide range of actions to improve fish habitat quality and quantity. *Id.*

Instream flow depletions were the primary cause of fish habitat loss and degradation in the Lemhi River Basin. HD2F1 at 48:30 – 49:30; HD2F1 at 50:00 – 59:00; Ex. 201 at 1-2, 6, 8; Ex. 202 at 10, 15; Ex. 203 at i, 4, 18-19, 72, 102; Ex. 204 at 219-20, 220-21, 223-28; Ex. 206A—206B. Consequently, one of the top priorities of fish conservation and recovery efforts in the Lemhi River Basin has been to maintain existing instream flows, and enhance them whenever possible. HD2F1 at 1:31:05 – 1:32:20; HD2F2 at 10:00 – 10:55; *see also* Ex. 201 at 8 (referring to "instream protection and enhancement . . . and improvements to water quality and quantity"); Lemhi Framework at 5 ("Implementation Strategy: The State will work to prevent future depletion of the flow regime in this reach to preserve existing spawning and rearing habitats for Chinook salmon and other salmonids"); *id.* at 13 ("Implementation Strategy: Provide additional flow."); Habitat Actions Table at 1 ("Maintain a minimum flow of 35 cfs at L6 throughout irrigation season by Year 10 of MOA"); *id.* at 3 ("Preserve the flow regime at the McFarland Campground stream gage . . . Work with water users to prevent the development of future water rights that further deplete mainstem flow"); *id.* at 8-11 ("Provide additional flow"); Ex. 198 at 1 ("Stream Habitat Improvement – Improve

stream flows . . . ."); *id.* at 4 ("Protecting and restoring more natural flow regimes is expected to contribute to the conservation of salmonids and their habitat in the Lemhi River drainage."); Ex. 203 at 24; ("Lower Lemhi River actions have focused on improving instream flow . . . ."); *id.* at 25 ("Upper Lemhi River actions have focused on . . . . tributary flow reconnection . . . .); *id.* at 28 ("Massive amounts of effort and funding have since been put into reconnecting tributaries and providing flow for functional passage . . . ."); *id.* at 57 ("Maintain and improve instream flow and tributary stream connections to the mainstem Lemhi River").

Maintaining and enhancing instream flows sufficient for fish passage and migration has always been important, Ex. 201 at 2, 9 & Appendix A; *see also* Ex. 198 at 33 ("Biologically adequate flow for undelayed migration is fundamental to the long-term persistence of fish in the Lemhi basin"); Ex. 204 at 228 (discussing "reconnecting tributaries . . . like Big Timber Creek"), but instream flows are also necessary to support critical life activities of the listed fish species other than passage and migration, such as spawning, rearing, and survival. HD2F1 at 31:10 – 31:45. "An important parameter for successful completion of and transition to difference life stages by ESA listed fish is the available flow in the stream. Generally speaking, more water translates into better conditions for growth, survival, and abundance." Ex. 201 at 8-9; *see also* Ex. 198 at 4 ("Reduced flows can reduce foraging opportunities and growth of rearing salmonids . . . ."); Ex. 199 at 30 ("because juveniles have to feed and grow, streamflow effects on rearing juveniles are probably as important and perhaps more important than effects on adults. . . . reducing streamflow can reduce growth, foraging efficiency, egg-parr and egg-smolt survival, and population productivity.") (parenthetical citations omitted).

Instream flows are also essential for maintaining and improving fish habitat within the Lemhi River and its tributaries. HD2F1 at 31:10 – 31:45 "Habitats that provide conditions suitable for fish spawning, rearing, survival, and migration are fundamental to the long-term persistence of salmonid species." Ex. 201 at 6. "Increased flow can stabilize stream temperatures, sort spawning gravels and remove fine sediment, improve food availability, and provide access to sided channels and lateral rearing habitats." Ex. 201 at 8-9 (parenthetical citations omitted); *see also* Ex. 203 at 56-57 (recommending "[m]aintain[ing] and improv[ing] instream flow and tributary connections to "increase habitat quantity and quality in the Lemhi River"); Ex. 204 at 227 ("habitat quality and quantity in [the Hayden Creek to Leadore] segment is limited by reduced flows"); Lemhi Framework at 5 (identifying "prevent[ion] [of] future depletion of the flow regime" in the Hayden Creek to Leadore reach of the Lemhi River as an "Implementation Strategy" for "maintain[ing] or improv[ing] spawning and rearing conditions for salmonids"); Habitat Actions Table at 3 (similar); Ex. 199 at 16 (stating that water use "has reduced the quality of spawning gravel, reduced availability of food for rearing salmonids, increased water temperature, and reduced access to escape cover" in the Lemhi River); *id.* at 98 ("reduced flows would also cause long-term degradation of substrate and riparian habitat quality"); Ex. 202 at 15 ("Artificially low streamflow . . . reduces the amount of physical habitat available for fish to live in, and reduces quality of habitat.").

The amount of instream flow necessary to maintain and improve habitat and support the different life stages and activities of the listed species cannot be reduced to a single instream flow value. Instream flow requirements depend upon a number of

factors, including life stage, life activity, location, channel characteristics, and time of year. HD2F1 at 10:25-30; Ex. 201 at 9-10; *see also* Ex. 193 at 4 (recognizing the need "to provide sufficient water for flows for appropriate life stages"); Ex. 194 at 5 (same); Ex. 202 at 24 (discussing channel cross-sections and wetted areas in connection with "optimal habitat" flows for different species, life stages and life activities); Ex. 202 at 25 ("These results imply that the optimum amount of water needed for adult, spawning, and juvenile life stages is not constant, but varies during the year.").

Moreover, variable instream flows that follow or mimic the natural hydrograph, including spring and early summer peak flows, are essential to maintaining and restoring fish habitat of the quality and diversity necessary to support conservation and restoration of the listed species. HD2F1 at 10:25-30; 1:32:30 – 1:34:00; *see also* HD2F2 at 48:20 – 52:15 (discussing why an "inverted" hydrograph is detrimental to fish); Ex. 201 at 9-10; *see also* Lemhi Framework at 7 ("*Objective.* Mimic high water events to improve habitat for salmonid spawning and rearing"); Habitat Actions Table at 4 ("Mimic high water events by providing pulses of flow during predetermined times"); Ex. 198 at 4 ("Magnitude and timing of flows can influence instream and riparian habitat, and natural flow regimes are important in formation and maintenance of instream and floodplain habitats.") (parenthetical citations omitted); Ex. 198 at 26 ("High water events historically provided by tributaries during spring snow melt have not been available to the Lemhi River. As a result, the amount of channel habitat for fish and the interchange of nutrients between aquatic and terrestrial/riparian environments have been significantly reduced."); Ex. 198 at 39-40 ("Extended periods in the Lemhi basin without peak flows may degrade spawning and rearing habitat for fish. . . . Water diversions during the

spring through the high water period often reduce or eliminate seasonal high volume peak flows that can maintain good quality spawning and rearing habitat."); Ex. 202 at 26 ("The natural hydrograph needs to be considered. . . . high spring flows that mimic the natural hydrograph should be a consideration in managing streamflows outside the PHABSIM analysis.").

Instream flows in tributary streams are particularly important, for several reasons. First, as stated in IDFG's report, the tributary streams "historically contained the high quality fish habitat necessary for spawning, rearing, survival, and migration, and this translated into abundant anadromous fish populations." Ex. 201 at 7. Providing access to this tributary habitat through "reconnect" projects, and recovering degraded habitat within the tributaries, is essential to fish conservation and recovery efforts in the Lemhi River Basin. *Id.* This is particularly the case for Big Timber Creek, which "has unique habitat characteristics and capacity relative to the Lemhi basin that are important for the sustainability of anadromous fish populations." *Id.*

Second, maintaining and enhancing instream flows in the tributary streams is crucial to maintaining and enhancing fish habitat in the mainstem of the Lemhi River itself, especially the Hayden Creek to Leadore reach. This reach is "critical" to fish conservation and recovery efforts in the Lemhi River Basin. HD2F3 at 1:50 – 3:10. As discussed in IDFG's report, this reach is "the primary Chinook salmon production area, where approximately two-thirds of the spawning in the basin occurs." Ex. 201 at 10; *see also* Ex. 203 at 56 (similar); Ex. 204 at 169, 219, 221, 230 (similar). Inflows to this important reach from tributary streams such as Big Timber Creek are essential for maintaining and improving habitat quality and channel diversity and complexity in the

highest producing section of the Lemhi River. Ex. 201 at 10; *see also* Ex. 203 at 102 ("Irrigation diversions significantly reduce instream flows by diverting tributaries away from and out of the mainstem Lemhi River. The many irrigation diversions have nearly eliminated an important intermittent disturbance regime associated with the spring freshet and channel-forming flows. It also reduces the quantity of instream habitat available through isolation (i.e., disconnected tributaries) and volume (i.e., cubic feet of water in the mainstem.").

3. CURRENT STATUS.

Fish conservation and recovery efforts in the Lemhi River Basin have had "a positive effect on habitat conditions and processes," and "increased spring Chinook salmon production in the Lemhi River system." Ex. 204 at 225; *see also* Ex. 199 at 102 (stating that "the mainstem Lemhi River is no longer dried" at L-6 each year). But this does not mean that the existing risks in the Lemhi River Basin have been adequately addressed. *See, e.g.,* Ex. 204 at 168 ("the Lemhi population . . . has shown a relatively flat trend in total abundance since 1995"); *id.* at 235 ("These projects have improved habitat conditions and increased spring Chinook salmon production in the Lemhi River system, but further habitat restoration is needed for this population to reach viability."); Ex. 199 at 12 ("the Lemhi River showed the smallest increase of 212%. . . . the Lemhi River population was the only one [in the Upper Salmon River Basin] that declined between the 1997-2001 and 2005-2009 time periods . . . . Of the 24 independent populations in the ESU for which trend data are available, the Lemhi River population declined the most . . . .").

The Lemhi River Basin needs to have 3 to 4 times more habitat to support the juvenile and parr numbers needed to reach NOAA recovery goals. HD2F3 at 18:25 –

23:50. As stated in IDFG's report, "biologists and research scientists estimate that there is insufficient habitat capacity, measured in terms of quantity and quality, throughout the Lemhi basin to support the number of anadromous fish, particularly juvenile life stages, needed to achieve recovery goals under the current ESA listing." Ex. 201 at 6-7; *see also* Ex. 203 at 44 ("deficits in available summer and winter juvenile rearing capacity are the primary factors limiting growth of the populations"). Populations of the listed fish species in the Lemhi River Basin are not currently viable and remain at "high risk." HD2F2 at 47:30-40; Ex. 199 at 12; Ex. 203 at 72; Ex. 204 at 168, 218, 220, 222; *see also* Ex. 199 (opining that existing diversions on U.S. Forest Service lands in the Lemhi River Basin are "likely to jeopardize the continued existence of Snake River spring/summer Chinook salmon and Snake River Basin steelhead, and [are] likely to adversely modify . . . critical habitat in the Lemhi Basin.").

The Lemhi River Basin remains severely flow-limited from a fish conservation and recovery standpoint. HD2F1 at 1:31:10 – 1:31:20; HD2F2 at 00:20 – 00:50, 12:20 – 12:40, 17:25-30; HD2F3 at 32:25 – 32:35, 34:10 – 34:25; HD2F4 at 11:55. The crucial reach from Hayden Creek to Leadore is still extremely impaired by low flows, including during spring and early summer. HD2F2 at 55:50. The natural hydrograph has been "inverted" by diversions on the mainstem and the tributaries, and as a result the seasonal peak flow events necessary to maintain and improve habitat are often no longer available. HD2F3 at 36:50 – 37:41; HD2F2 at 48:30 – 50:05; *see also* Ex. 204 at 226 (stating that the Lemhi River upstream from Hayden Creek "has a 'reversed' hydrograph, in which base flow conditions occur in April and early May when unimpaired streams are nearing peak flow conditions. This reduction in early rearing flow adversely affects rearing

conditions."); Ex. 219 at 67 ("Below Diversions" hydrograph for Big Timber Creek); Ex. 203 at 117 ("Irrigation diversions [from Big Timber Creek] have attenuated peak flows in the stream, thus reducing the stream power and transport capacity."); Ex. 13 at Figure 9 ("Lower Big Timber Creek Flows 2006-2016).

Depleted surface flows remain a primary limiting factor in fish conservation and recovery efforts throughout the Lemhi River Basin. *See, e.g.,* HD2F3 at 22:20 – 22:45 (stating that "flow is a big factor" in the deficit in rearing habitat capacity in the Lemhi River Basin); Ex. 203 at 55 (identifying "[d]iminshed streamflow during critical periods" as a "tributary habitat limiting factor"); Ex. 204 at 225 ("Current Habitat Limiting Factors . . . . Low flows during critical periods"); *id.* at 227 ("low streamflow during juvenile rearing is limiting the Lemhi spring/summer Chinook salmon population"); *id.* at 227 ("habitat quality and quantity in [the Hayden Creek to Leadore] reach is limited by reduced flows. The entire reach has an 'inverted' hydrograph wherein the lowest flows occur in early spring. . . . Additional flow in this reach during spring and summer are needed to increase spring/summer Chinook salmon egg-to-smolt survival and juvenile growth"); Ex. 199 at 16 ("Water use has altered the hydrograph of the mainstem Lemhi River, which has reduced quality of spawning gravel, reduced availability of food or rearing salmonids, increased water temperatures, and reduced access to escape cover."); Ex. 199 at 22 ("Streamflow throughout the Lemhi River drainage is reduced by water diversions."); Ex. 199 at 102 ("Although the mainstem Lemhi River is no longer dried, relationships between flow and population productivity indicates that flow in the mainstem Lemhi River is limiting for both species.").

NOAA Fisheries has concluded that "[i]ncreasing streamflows is the highest priority action to increase abundance and productivity for the [Lemhi River] population." Ex. 204 at 234; *see also* Ex. 205 at 1 ("Improving streamflow in the mainstem Lemhi River and tributary streams is a high priority for recovery of the Lemhi River Chinook salmon and steelhead populations."); Ex. 203 at 56-57 ("The following recommended actions can increase habitat quantity and quality in the Lemhi River: . . . . Maintain and improve instream flow and tributary stream connections to the mainstem Lemhi River.").

Further, despite "the herculean effort to re-water and reconnect tributary habitat" in the Lemhi River Basin, Ex. 203 at 28, many tributaries, including Big Timber Creek, have not yet been fully or functionally reconnected to the mainstem Lemhi River. Ex. 204 at 231, 234. As discussed in IDFG's report, the approximately 7.3 CFS acquired to "reconnect" Big Timber Creek with the Lemhi River "falls substantially short of optimum conditions to support the multiple life stages and achieve recovery goals . . . and is not sufficient to provide migration conditions for all ESA listed adult salmonids that we would expect to enter Big Timber Creek." Ex. 201 at 9. In addition, Big Timber Creek still experiences dewatering events, including but not limited to times when the flow drops to zero CFS. Ex. 236; HD2F7 at 21:33 – 21:41, 32:25 – 33:00.[10]

[10] From a biological perspective, "dewatering" is not limited to instances when a stream channel is "bone dry." For instance, tributaries are functionally "disconnected" from the mainstem of the Lemhi River any time upstream diversions have reduced tributary flows sufficiently to create hydraulic or thermal barriers to fish migration or passage. This means a tributary can be "disconnected" or "dewatered" even when there is still some flow in the stream channel. In fish conservation and recovery efforts, therefore, the term "dewatering" is understood to include instances when instream flow is present but diversions have reduced the flow to the point of impairing life activities (migration, passage, spawning, rearing, survival, etc.) or reducing habitat quantity or quality (either in the tributary itself, or the mainstem river). HD2F1 at 33:00 – 34:45; HD2F2 at 1:30 – 1:50, 27:20, 33:40.

In sum, conservation and recovery efforts in the Lemhi River Basin have helped enhance instream flows and improve the quantity and quality of fish habitat. Even so, low instream flows and insufficient fish habitat continue to limit conservation and recovery of the listed fish species, and they remain at high risk throughout the Lemhi River Basin. Ex. 199 at 12; Ex. 201 at 6-7; Ex. 203 at 56-57, 73; Ex. 204 at 225, 234-35.

4. EFFECT OF APPROVING THE APPLICATION.

Approving new permit applications in the Lemhi River Basin would allow additional diversions from a river-and-tributary system that is already critically flow-limited from a fish conservation and recovery standpoint, and would increase risks to the listed fish species. "Basin-wide . . . we don't have the capacity to support recovery . . . . The basin is flow limited, and flow directly relates to habitat capacity . . . . Certainly any approval of new water rights is going to negatively affect or drive that number down." HD2F3 at 32:10 - 32:45; *see also* Ex. 204 at 232 ("Because instream flows are already low due to irrigation withdrawals, new water development for agriculture or other purposes would further threaten spring/summer Chinook salmon habitat."); Ex. 199 at 101 ("If the State does appropriate additional water for irrigation, productivity of the Lemhi River Chinook salmon and steelhead populations will likely decline."); Ex. 199 at 102-03 ("If the state of Idaho appropriates water to irrigate additional land in the Lemhi River drainage . . . then baseline conditions will degrade and the Chinook salmon and steelhead populations will likely decline.").

Approving the Application would adversely affect habitat capacity and quality in Big Timber Creek and in the Lemhi River, as explained in IDFG's report:

> If the application were approved, up to an additional 6.4 cfs could at times be diverted out of Big Timber Creek. Direct effects would be seen in Big

> Timber Creek for nearly 7 miles below the diversion to the confluence with the Lemhi River. . . . Diverting additional flow will further reduce the low capacity estimates [for Big Timber Creek], and will have direct effects on specific habitat parameters, such as reducing total stream area (i.e. wetted area) for fish, a reduction in available lateral complex habitat, and a decline in water quality via increasing temperature due to reduced water volume and buffering capacity. Effects on water temperature is particularly concerning because monitoring studies have demonstrated that stream temperatures are currently warmer than preferred conditions for salmonid growth and survival (Upper Salmon Subbasin Habitat IRA 2019).
>
> Any reduction in flow will also have effects to habitat capacity in the upper Lemhi River. Big Timber Creek enters the Lemhi near the top of the primary Chinook salmon production area, where approximately two-thirds of the spawning in the basin occurs (IDFG unpublished data). The IRA document identifies this area of the Lemhi as the second most prioritized reach for improving habitat capacity (Upper Salmon Subbasin Habitat IRA 2019). Reduced flow will not only reduce the quantity of available habitat through the mechanisms discussed above, but will indirectly affect habitat quality in this important reach. As discussed previously, high flow events originating from tributaries maintain and improve stream channel diversity and complexity. In most years these runoff events have been unavailable to the upper Lemhi due to early season water withdrawals (Trapani 2002). More tributary flow reductions further reduces the opportunity for these events to occur.

Ex. 201 at 10 (parentheticals in original); *see also* Ex. 205 (stating that approving the Application "would likely increase overall water use in the Big Timber drainage; would reduce flow in lower Big Timber Creek; would possibly negate some of the progress that has been achieved; and would likely harm Chinook salmon, steelhead, and designated critical habitat in the Big Timber Creek," and "would also likely reduce flow in the mainstem Lemhi River . . . . Reducing flow in this reach of the Lemhi River would harm Chinook salmon, steelhead, and designated critical habitat for both species"); Ex. 199 at 7 (stating that consumptive use of tributary water will reduce streamflow in all downstream reaches).

In sum, if the Application is approved, "the resulting diversions would have adverse effects on the capacity and quality of critical habitat for ESA-listed fish species." Ex. 201 at 16. For the same reasons, approving the application would also "tend to undermine existing and planned efforts to provide sufficient flows to support recovery and de-listing of the fish species currently listed in the Endangered Species Act." Ex. 201 at 16. Approving the application would also increase the risk that NOAA Fisheries may initiate the type of direct regulatory actions against Lemhi River Basin water users that was threatened in 2000, but withheld as a result of voluntary and collaborative efforts by the State and local water users to address fish conservation and recovery. "The regulatory cloud is still there," and NOAA Fisheries has registered the same type of concerns with this this Application as those discussed in IDFG's report. HD2F3 at 35:06 – 37:00; HD2F4 at 59:45 – 1:00:42; HD2F5 at 4:20 – 5:21; Ex. 205.

5. CONDITIONS.

In IDFG's assessment, the above-described adverse effects of approving the Application cannot be "avoided, minimized, or mitigated" by imposing protective conditions on the Application. Ex. IDWR 3 at 2. As previously discussed, the Lemhi River Basin is already severely flow-limited for fish conservation and recovery purposes, and the listed fish species remain at high risk throughout the basin. From a conservation and recovery perspective, there simply is no water available in the Lemhi River Basin for new irrigation water rights. HD2F3 at 34:35 – 35:05; HD2F4 at 2:43 – 2:58. Any additional reduction to the already-impaired instream flows in Big Timber Creek or the Lemhi River will necessarily and unavoidably have adverse effects on the life activities and critical habitat of the listed fish species. *See, e.g.,* Ex. 201 at 16 ("In the case of Big

Timber Creek, the diversion of any flow above and beyond existing conditions will further reduce available habitat capacity needed to support freshwater life stages of anadromous and freshwater resident fish."). "Any reduction in flow [in Big Timber Creek] will also have effects to habitat capacity and quality in the upper Lemhi River." Ex. 201 at 10.[11]

The only protective conditions that have been proposed are the 13 CFS "bypass" conditions of water right no. 74-15613. Ex. 201 at 9; IDWR Ex. 9. The 13 CFS "bypass" conditions will not prevent further reductions of the already impaired flow regime, however. For this reason, and for additional reasons discussed below, the 13 CFS "bypass" conditions also would not meaningfully minimize or mitigate the adverse effects of the Application.

While an instream flow of 13 CFS may be sufficient for upstream migration by adult salmonids in the lowermost reach of Big Timber Creek, Ex. 201 at 9, this does not mean that a 13 CFS "bypass" flow is sufficient for upstream migration and passage at all locations on Big Timber Creek. HD2F3 at 2:30 – 04:30. As IDFG's report explains, the 13 CFS "bypass" condition originated with the U.S. Bureau of Reclamation's 2004 PHABSIM study for Big Timber Creek, Ex. 201 at 9; Ex. 202; IDWR Ex. 5 at 6, but in that study the 13 CFS flow estimate applied only to "the lowermost segment of Big Timber Creek where bankful widths are narrower than upstream areas, which requires

[11] These are technical conclusions regarding the depletive effect of additional appropriations on instream flows in the Lemhi River Basin, regardless of the purposes for which new appropriations are sought. The policy question of whether IDWR should distinguish between the purposes of use for which new applications are filed, such as "irrigation" versus "domestic" or "municipal," is beyond the scope of IDFG's participation in this matter. IDWR Ex. 3.

less flow to meet minimum depth criteria so that adult fish can navigate upstream." Ex. 201 at 9. Further upstream, approaching the Application's proposed point of diversion, "the stream is wider, thus, discharge that would be required to provide optimal rearing conditions to support recovery of ESA listed fish is much higher." Ex. 201 at 9.

In addition, while 13 CFS may be sufficient instream flow for adult migration into Big Timber Creek from the Lemhi River, fish conservation and recovery efforts in the Lemhi River Basin are not and cannot be limited to improving conditions for adult migration. The Lemhi River Basin is critical to recovery of the listed species, HD2F1 at 26:00, 44:05 – 44:20; HD2F5 at 02:50 – 03:05; Ex. 203 at 29, and "[h]abitats that provide conditions suitable for fish spawning, rearing, survival, and migration are fundamental to the long-term persistence of salmonid species." Ex. 201 at 6. As IDFG's report explains, more than 13 CFS "may be necessary at times to meet minimum requirements to improve rearing conditions for salmon, steelhead, and bull trout." Ex. 201 at 9. Immediately below the proposed diversion, for instance, the flow required "for optimum [Weighted Usable Area] for rearing bull trout can be as high as 23 [CFS] and 49 [CFS] for juveniles and adults, respectively." Ex. 201 at 9. In short, "more water will fill the more complex stream habitat existing in multiple channels within the foodplain, thus providing more area and locations for juvenile fish to grow and survive." Ex. 201 at 9. "This capacity increase is identified as a critical aspect to supporting the recovery of ESA listed fish, as identified in the IRA process (Upper Salmon Subbasin Habitat IRA 2019, NOAA 2017)." Ex. 201 at 9 (parentheticals in original).

The 13 CFS "bypass" conditions do not recognize the need for "[h]igh water events [that] are important for maintaining and evolving the complexity of stream

channels important for fish spawning, rearing, and survival by creating riffles and pools, depositional zones, and undercut banks." Ex. 201 at 9; *see also* Ex. 202 at 26 ("The natural hydrograph needs to be considered. . . . high spring flows that mimic the natural hydrograph should be a consideration in managing streamflows outside the PHABSIM analysis."). Seasonal peak flow events in tributary streams such as Big Timber Creek are also necessary to maintain and enhance instream flows and habitat quality in the Lemhi River. *See* Ex. 201 at 10 ("More tributary flow reductions further reduces the opportunity [high flow] events."); Ex. 203 at 102 ("Irrigation diversions significantly reduce instream flows by diverting tributaries away from and out of the mainstem Lemhi River. The many irrigation diversions have nearly eliminated an important intermittent disturbance regime associated with the spring freshet and channel-forming flows. It also reduces the quantity of instream habitat available through isolation (i.e., disconnected tributaries) and volume (i.e., cubic feet of water in the mainstem.") (parentheses in original).

Existing irrigation practices and diversions have significantly reduced both the frequency and magnitude of seasonal peak flow events in lower Big Timber Creek and the upper Lemhi River. *See, e.g.,* Ex. 201 at 10 ("In most years these runoff events have been unavailable to the upper Lemhi due to early season water withdrawals"); Ex. 203 at 102 (similar); Ex. 198 at 26 ("High water events historically provided by tributaries during spring snow melt have not been available to the Lemhi River. As a result, the amount of channel habitat for fish and the interchange of nutrients between aquatic and terrestrial/riparian environments have been significantly reduced."); Ex. 198 at 39-40 ("Extended periods in the Lemhi basin without peak flows may degrade spawning and rearing habitat for fish. . . . Water diversions during the spring through the high water

period often reduce or eliminate seasonal high volume peak flows that can maintain good quality spawning and rearing habitat."). The 13 CFS "bypass" conditions would not provide sufficient flows for these purposes, and apparently would allow all flows in excess of the 13 CFS "bypass" threshold to be appropriated under future water rights.

The 13 CFS "bypass" condition appears to assume that fish conservation and recovery efforts can be largely or sufficiently protected by establishing a single "bypass" or minimum flow on Big Timber Creek. That assumption is incorrect because, as previously discussed, fish conservation and recovery efforts require a range of flows that that depend upon many variables, including species, life stage, life activity, channel locations and dimensions, time of year, and others. Moreover, at this time it is not possible to develop variable flow condition(s) that would protect the timing, frequency, and magnitudes of the flows necessary to support conservation and recovery of listed species and their habitat, because the data necessary to develop appropriate variable flow conditions is not yet available. HD2F3 at 26:00 – 26:15, 46:00 – 47:00; *see also* Ex. 203 at 103 ("Data Gaps").

CONCLUSION

The Lemhi River Basin is uniquely important to fish conservation and recovery efforts in the Upper Salmon River Basin, and has been the focus of many years of such efforts by IDFG and other entities, including local water user groups. The Lemhi River Basin is still critically flow-limited from a fish conservation and recovery perspective. Approving the Application will further deplete stream flows that are already far too low to achieve recovery objectives, and will increase risks to ESA-listed fish species that are

already at high risk of extirpation from the Lemhi River Basin. The proposed 13 CFS "bypass" condition would not avoid or meaningfully mitigate these adverse effects.

DATED this 27th day of September 2019.

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on 27th day of September 2019, I caused the original of the foregoing to be filed with the Idaho Department of Water Resources, and copies to be served upon the following, in the manner listed below:

1. Original to:

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2. Copies to the following:

IDAHO DEPARTMENT OF WATER RESOURCES ATTN: JEAN HERSLEY, TECHNICAL RECORDS SPECIALIST II 322 E. FRONT STREET, SUITE 648 BOISE, ID 83720-0098	☐ U.S. Mail, postage prepaid ☐ Hand Delivery ☐ Federal Express ☒ Statehouse Mail ☐ Facsimile:
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