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Via Electronic Filing

Honorable Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 1st Street N.E.
Washington, D.C. 20426

February 22, 2013

Subject: **Wells Hydroelectric Project No. 2149**
Gas Abatement Plan and Bypass Operating Plan – License Article 401 (a)

Dear Secretary Bose:

Pursuant to Article 401(a) of the new license for the Wells Hydroelectric Project, the Public Utility District No. 1 of Douglas County (Douglas PUD) hereby submits for approval the 2013 Total Dissolved Gas Abatement Plan (GAP) and the 2013 Bypass Operating Plan (BOP) for the Project.

Article 401(a) requires Douglas PUD to file a GAP approved by the Washington State Department of Ecology (Ecology) by February 28th during each year of the license. The final GAP is attached as Appendix A to this letter and was reviewed and approved by all of the parties to the Aquatic Settlement Agreement (ASA) and Habitat Conservation Plan (HCP) including Ecology, the National Marine Fisheries Service (NMFS), United States Fish and Wildlife Service (USFWS), U.S. Bureau of Land Management (BLM), Washington State Department of Fish and Wildlife (WDFW), the Confederated Tribes of the Colville Reservation (CCT) and the Confederated Tribes and the Bands of the Yakama Nation (YN). The Bureau of Indian Affairs (BIA) was also provided an opportunity to review and comment on the GAP during the 30-day ASA comment period. The BIA is currently a non-voting observer within the ASA process.

The enclosed GAP is consistent with (1) the Water Quality Management Plan that is contained within the ASA and Condition 6.7(2)(a) of Ecology's Clean Water Act section 401 Water Quality Certification (401 Certification) and (2) the NMFS Endangered Species Act Incidental Take Statement (ITS) Reasonable and Prudent Measure No. 2 for the Wells Project. The pre-filing consultation record supporting the review and approval of the GAP is attached as Appendix B to this letter.

Douglas PUD respectfully requests that the FERC approve the enclosed GAP for the Wells Project prior to the start of the fish spill season that begins on April 1, 2013.

Article 401 (a) also requires Douglas PUD to file a BOP that has been approved by the NMFS within year one of the new license. The Wells HCP requires Douglas PUD to annually submit the BOP to the HCP Coordinating Committee for review and approval. Section 6.7(2)(d) of the 401 Certification requires Douglas PUD to closely coordinate the content and review processes for the GAP and BOP within year one of license issuance.

The final BOP is attached as Appendix C to this letter and was reviewed by all of the agencies and tribes participating in the HCP process, including the NMFS. The 2013 BOP was approved by the HCP Coordinating Committee, including the NMFS, at the January 22, 2013 meeting. On January 28, 2013, the NMFS also provided Douglas PUD with independent correspondence reaffirming its approval of the BOP.

A draft copy of the BOP was provided to the Aquatic Settlement Work Group on December 28, 2012 to coordinate the BOP with the GAP. No comments on the BOP were received by the end of the 30-day comment deadline. On February 12, 2013, Ecology provided Douglas PUD with a letter reaffirming its approval of the GAP and indicating that Douglas PUD has appropriately coordinated the GAP and BOP in accordance with the requirements of the 401 Certification, section 6.7 (2)(d). The consultation record supporting the review and approval of the BOP can be found in Appendix D to this letter.

Douglas PUD respectfully requests that the FERC approve the BOP for the Wells Project prior to the start of fish bypass operations that begins on April 9, 2013.

If you have any questions or require further information regarding the enclosed plans or the consultation record supporting the approval and coordination of these plans, please feel free to contact Andrew Gingerich at (509) 881-2323, andrewg@dcpud.org or Tom Kahler at (509) 881-2322, tomk@dcpud.org.

Sincerely,

Shane Bickford
Natural Resources Supervisor

Enclosure:
1) Appendix A – 2013 Total Dissolved Gas Abatement Plan – Wells Project
2) Appendix B – Pre-filing consultation record for the 2013 Gas Abatement Plan
3) Appendix C – 2013 Bypass Operating Plan – Wells Project
4) Appendix D – Pre-filing consultation record for the 2013 Bypass Operating Plan

Cc:
Mr. Douglas Johnson – FERC, Portland
Mr. James Hastreiter – FERC, Portland
Mr. Erich Gaedeke – FERC, Portland
Wells HCP Coordinating Committee
Wells Aquatic Settlement Work Group
Mr. Tom Kahler – Douglas PUD
Mr. Andrew Gingerich – Douglas PUD

Appendix A - 2013 Total Dissolved Gas Abatement Plan – Wells Project

TOTAL DISSOLVED GAS ABATEMENT PLAN

WELLS HYDROELECTRIC PROJECT

(FERC Project No. 2149)

Prepared by:

Public Utility District No. 1 of Douglas County
East Wenatchee, Washington

February 1, 2013

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Table of Contents

1.0 Introduction and Background 1
1.1 Project Description 1
1.2 Regulatory Framework 3
1.2.1 7Q-10 Flood Flows 4
1.2.2 Fish Spill Season 4
1.2.3 Incoming TDG Levels 4
1.2.4 Total Maximum Daily Load 5
1.2.5 Additional 401 Certification Requirements 5
1.2.6 Additional Requirements of the FERC Operating License 7
1.3 History of Operations and Compliance 8
1.3.1 Historical Flows 8
1.3.2 Spill Operations 9
1.3.3 Compliance Activities in Previous Year 11
1.3.4 Compliance Success in Previous Year (2012) 13
2.0 Proposed Operations and Activities 16
2.1 Operational Spill 16
2.1.1 Minimizing Involuntary Spill 16
2.2 Implementation 17
2.2.1 Fisheries Management Plans 17
2.2.2 Biological Monitoring 18
2.2.3 Water Quality Forums 19
2.2.4 Water Quality Attainment Plan and Quality Assurance Project Plans 19
3.0 Structural Activities 20
4.0 Compliance and Physical Monitoring 20

4.1 Monitoring Locations 20
4.1.1 TDG 20
4.2 Quality Assurance 21
4.2.1 TDG 21
4.3 Reporting 22
5.0 Conclusions 22
6.0 Literature Cited 23
7.0 Appendices 24

List of Figures

Figure 1. Map of the Wells Hydroelectric Project in Central Washington. 2

List of Tables

Table 1. Average monthly flows (kcfs) at Wells Dam, by month (2002-2012). 9

Table 2. Wells Hydroelectric Project Juvenile Bypass System Efficiency. 10

Table 3. Average monthly river flow volume (kcfs) during the TDG monitoring season at the Wells Project in 2012 compared to the previous 42-year average (1969-2011), by month. 14

Table 4. Average monthly spill (kcfs) during the TDG monitoring season at the Wells Project in 2012 compared to the 17-year average (1995-2011), by month. 15

Table 5. 2012 compliance summary. 15

Table 6. 1998 -2000, 2010 Wells Hydroelectric Project Juvenile Survival Study Results. 17

Table 7. Wells Hydroelectric Project Habitat Conservation Plan Species Phase Designations. 18

List of Appendices

Appendix 1. Wells Hydroelectric Project Spill Playbook, 2012. 25

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Executive Summary

Washington State Water Quality Standards (WQS) are defined in Washington Administrative Code (WAC) Chapter 173-201A, and are administered by the Washington Department of Ecology. Compliance with the total dissolved gas (TDG) standard requires that TDG not exceed 110 percent at any point of measurement in any state water body. A dam operator is not held to the TDG standards when the river flow exceeds the seven-day, 10-year frequency flood (7Q-10). In addition to allowances for natural flood flows, the TDG criteria may be adjusted to aid fish passage over hydroelectric dams when consistent with an Ecology-approved gas abatement plan. On a per-application basis, Ecology has approved a TDG adjustment to allow spill for juvenile fish passage past Columbia and Snake River dams (WAC 173-201A-200(1)(f)(ii)).

On the Columbia and Snake rivers there are three separate standards for the fish passage TDG adjustment: 1) TDG shall not exceed 125 percent in the tailrace of a dam, as measured in any one-hour period, 2) TDG shall not exceed 120 percent in the tailrace of a dam and 3) shall not exceed 115 percent in the forebay of the next dam downstream. Compliance with the latter two standards is determined using an average of the 12 highest consecutive hourly readings in any 24-hour period. The increased levels of spill, resulting in elevated TDG levels, are intended to allow increased fish passage with less harm to fish populations than what would be caused by turbine fish passage. This TDG adjustment provided by Ecology is based on a risk analysis study conducted by the National Marine Fisheries Service (NMFS) (NMFS 2000).

The goal of the Wells Total Dissolved Gas Abatement Plan (GAP) is to implement a long-term strategy to achieve compliance with the Washington State WQS criteria for TDG in the Columbia River at the Wells Hydroelectric Project (Wells Project) while continuing to provide safe passage for downstream migrating juvenile salmonids. Public Utility District No. 1 of Douglas County (Douglas PUD), which owns and operates the Wells Project, is submitting this GAP to Ecology as required for receipt of a TDG adjustment to aid fish passage at Wells Dam.

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1.0 Introduction and Background

The Wells Hydroelectric Project Gas Abatement Plan (GAP) provides details on operational and structural measures to be implemented by Public Utility District No. 1 of Douglas County, Washington (Douglas PUD) at Wells Dam under the Federal Energy Regulatory Commission (FERC) license for Project No. 2149. These measures are intended to result in compliance with the modified Washington State water quality standards (WQS) for total dissolved gas (TDG) allowed under the TDG adjustment, provided incoming water to the Project is in compliance and flows are below the seven-day, 10-year frequency flood levels (7Q-10: 246 kcfs).

The goal of the GAP is to implement a long-term strategy to achieve compliance with the Washington State WQS for TDG in the Columbia River at the Wells Hydroelectric Project (Wells Project or Project), while continuing to provide safe passage for downstream migrating juvenile salmonids via the Juvenile Bypass System (JBS). Douglas PUD is the owner and operator of the Wells Project and is submitting this GAP to the Washington Department of Ecology (Ecology) for approval as required for receipt of a TDG adjustment for fish passage.

Since 2003, Ecology has approved GAPs and issued a TDG adjustment for the Wells Project. The most recent GAP was approved by Ecology in 2012

This GAP contains three sets of information. Section 1.0 summarizes the background information related to regulatory and project-specific TDG information at the Wells Project. Proposed Wells Project operations and activities related to TDG management are contained in Sections 2.0 and 3.0. Section 4.0 provides a summary of compliance and physical monitoring plans, quality assurance and quality control procedures, and reporting.

1.1 Project Description

The Wells Project is located at river mile (RM) 515.6 on the Columbia River in the State of Washington (Figure 1). Wells Dam is located approximately 30 river miles downstream from the Chief Joseph Hydroelectric Project, owned and operated by the United States Army Corps of Engineers (USACE); and 42 miles upstream from the Rocky Reach Hydroelectric Project owned and operated by Public Utility District No. 1 of Chelan County (Chelan PUD). The nearest town is Pateros, Washington, which is located approximately 8 miles upstream from the Wells Dam.

The Wells Project is the chief generating resource for Douglas PUD. It includes ten generating units with a nameplate rating of 774,300 kW and a peaking capacity of approximately 840,000 kW. The spillway consists of eleven spill gates that are capable of spilling a total of 1,180 thousand cubic feet per second (kcfs). The crest of the spillway is approximately five and a half feet above normal tailwater elevation and two feet below tailwater elevation when plant discharge is 219 kcfs. The design of the Wells Project is unique in that the generating units, spillways, switchyard, and fish passage facilities were combined into a single structure referred to as the hydrocombine. Fish passage facilities reside on both sides of the hydrocombine, which is 1,130 feet long, 168 feet wide, with a dam top elevation of 795 feet above mean sea level (msl). The Juvenile Bypass System (JBS) was developed by Douglas PUD and uses a

barrier system to modify the intake velocities on all even numbered spillways (2, 4, 6, 8 and 10). The Wells Project is considered a "run-of-the-river" project due to its relatively limited storage capacity.

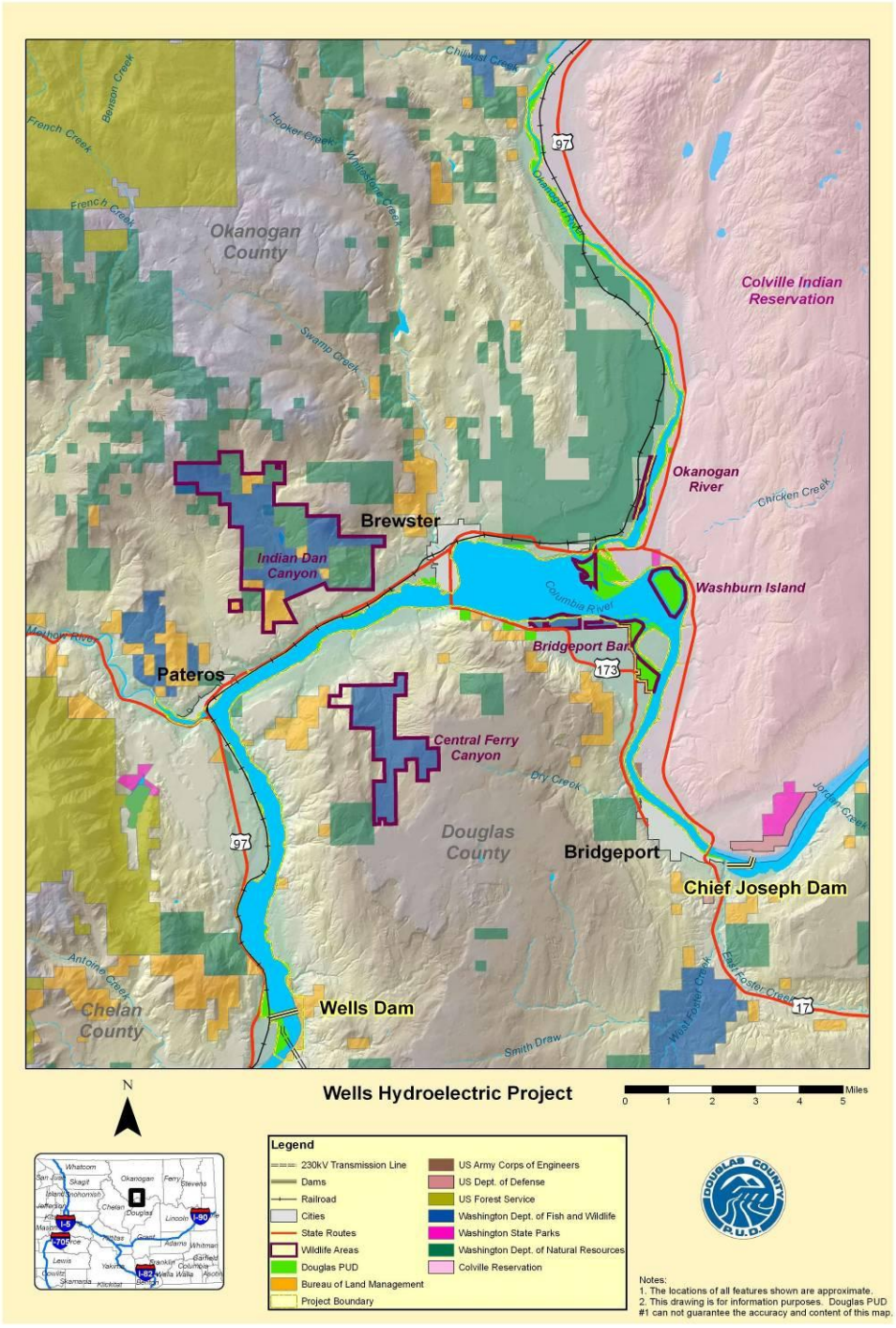

Figure 1. Map of the Wells Hydroelectric Project in Central Washington.

The Wells Reservoir is approximately 30 miles long. The Methow and Okanogan rivers are tributaries of the Columbia River within the Wells Reservoir. The Wells Project boundary extends approximately 1.5

miles up the Methow River and approximately 15.5 miles up the Okanogan River. The surface area of the reservoir is 9,740 acres with a gross storage capacity of 331,200 acre-feet and usable storage of 97,985 acre-feet at the normal maximum water surface elevation of 781 feet.

1.2 Regulatory Framework

Article 401(a) of the FERC license for the Wells Project requires that the GAP be developed in consultation with the National Marine Fisheries Service (NMFS), [United States Fish and Wildlife Service (USFWS)], Washington State Department of Fish and Wildlife, [Washington State Department of Ecology (Ecology)], Confederated Tribes of the Colville Reservation, Confederated Tribes and Bands of the Yakama Nation, United States Bureau of Land Management, and United States Bureau of Indian Affairs. The GAP must then be approved by NMFS and Interior before being submitted to Ecology and the Aquatic Settlement Work Group for approval. Once approved by the Aquatic Settlement Work Group and in particular Ecology, then the GAP is to be filed with the FERC for approval.

WAC Chapter 173-201A defines standards for the surface waters of Washington State. Section 200(1)(f) defines the WQS for TDG, and subsection ii defines the TDG criteria adjustment for fish passage.

Under the WQS, TDG shall not exceed 110 percent at any point of measurement in any state water body. However, the standards exempt dam operators from this TDG standard when the river flow exceeds the 7Q-10 flow. The 7Q-10 flow is the highest calculated flow of a running seven consecutive day average, using the daily average flows that may be seen in a 10-year period. The 7Q-10 total river flow for the Wells Project was computed using the hydrologic record from 1974 through 1998, coupled with a statistical analysis to develop the number from 1930 through 1998. These methods follow the United States Geological Survey (USGS) Bulletin 17B, “Guidelines for Determining Flood Flow Frequency” and determined that the 7Q-10 flow at Wells Dam is 246,000 cfs (Ecology et. al. 2004).

In addition to allowances for natural flood flows, the TDG criteria may be adjusted to aid fish passage over hydroelectric dams when consistent with an Ecology-approved gas abatement plan. This plan must be accompanied by fisheries management and physical and biological monitoring plans. Ecology may approve, on a per application basis, an interim adjustment to the TDG standard (110 percent) to allow spill for juvenile fish passage past dams on the Columbia and Snake rivers. Ecology-approved fish-passage adjustments comprise three separate standards to be met by dam operators: 1)TDG shall not exceed 125 percent in any one-hour period in the tailrace of a dam,2) TDG shall not exceed 120 percent in the tailrace of a dam and 3) shall not exceed 115 percent in the forebay of the next dam downstream, with compliance criteria 2 and 3 measured as an average of the 12 highest consecutive hourly readings in any 24-hour period (12C High). The increased levels of spill resulting in elevated TDG levels are authorized by Ecology to allow salmonid smolts a non-turbine downstream passage route that is less harmful to fish populations than turbine fish passage. This TDG adjustment provided by Ecology is based on a risk analysis study conducted by the National Marine Fisheries Service (NMFS) (NMFS 2000).

A significant portion of the Wells Reservoir occupies lands within the boundaries of the Colville Indian Reservation. Wells Project operations do not affect TDG levels in tribal waters, where the Colville Tribes’ TDG standard is a maximum of 110 percent, year-round, at all locations. This TDG standard is also the

U.S. Environmental Protection Agency's (EPA) standard for all tribal waters on the Columbia River, from the Canadian border to the Snake River confluence. TDG levels on the Colville Reservation portion of the mainstem Columbia River within Wells Reservoir result from the operations of upstream federal dams but in particular, the USACE's Chief Joseph Dam (located immediately upstream of Wells Dam) and the US Bureau of Reclamation's Grand Coulee Dam (located immediately upstream of Chief Joseph Dam).

1.2.1 7Q-10 Flood Flows

The 7Q-10 flood flow at the Wells Project is 246.0 kcfs. The Project is not required to comply with state WQS for TDG when project flows exceed this value.

1.2.2 Fish Spill Season

Although not defined in state regulations, the fish spill season at Wells Dam is determined by the Habitat Conservation Plan (HCP) Coordinating Committee and is intended to aid downstream juvenile salmonid fish passage over Wells Dam as an alternative to passage through the Project turbines. The fish spill season is generally April to end of August, but may vary from year to year. During non-fish spill, Douglas PUD will make every effort to remain in compliance with the 110 percent standard. During the fish spill season, Douglas PUD will make every effort not to exceed an average of 120 percent as measured in the tailrace of the dam. TDG at the Wells Project also must not exceed an average of 115 percent as measured in the forebay of the next downstream dam (Rocky Reach). These averages are calculated using the twelve (12) highest consecutive hourly readings in any 24-hour period. In addition, there is a maximum one-hour average of 125 percent, relative to atmospheric pressure, during fish spill season. Nothing in these special conditions allows an impact to existing and characteristic uses.

1.2.3 Incoming TDG Levels

During the fish spill season, TDG concentrations in the Wells Project forebay are primarily determined by the USACE's upstream water management activities at Chief Joseph Dam and the Bureau of Reclamation's activities at Grand Coulee Dam.

Since the completion of spill deflectors at Chief Joseph Dam in 2008, there has been a significant increase in the amount of spill at the Chief Joseph Project resulting from Federal Columbia River Power System (FCRPS)-wide operations. Recent increases in the amount of spill at Chief Joseph Dam have resulted in a dramatic rise in the volume of supersaturated water entering the Wells Project. For example, in 2012 Wells Dam received non-compliant water (>110%) on 125 days of the 133 days fish spill season. This mass influx of supersaturated water has resulted in significantly higher TDG concentrations observed in the forebay of Wells Dam that often exceeds TDG values of 115%.

Despite the absence of fish passage at Chief Joseph Dam, the USACE has operated under the assumption that the fish passage TDG adjustment approved by Ecology applies to all FCRPS dams, rather than the eight dams with fish passage in the lower Snake and Columbia rivers. Chief Joseph and Grand Coulee dams do not currently have upstream or downstream fish passage and subsequently do not have Ecology approved fish passage adjustment for spilling water above the 110% statewide uniform TDG

standard. As a result, both the USACE and the Bureau of Reclamation are out of compliance with Washington State WQS, as well as the EPA TDG standard and the Colville Tribe's TDG standard, whenever TDG in the Chief Joseph dam or Grand Coulee dam tailraces exceeds 110 percent.

In 2012 the USACE revamped their proposed spill priority list for the FCRPS in recognition of the 110 percent TDG standard for joint operations of Grand Coulee and Chief Joseph Dams. Douglas PUD strongly supported the USACE's proposed 2012 spill priority as it was expected to reduce the future frequency and duration of non-compliant water entering the Wells Reservoir. Despite the spill priority modification in 2012, Douglas PUD consistently received non-compliant water from the upstream federal hydro-system above 110% on all but 8 days of the 133 day spill season. In addition Wells received water containing TDG over the 115% (12C-High) standard for more than 50% of the spill season days in 2012.

1.2.4 Total Maximum Daily Load

In June 2004, a total maximum daily load (TMDL) for TDG was jointly established for the Mid-Columbia River and Lake Roosevelt by Ecology, the Spokane Tribe of Indians, and EPA (Ecology et al. 2004). EPA's issuance covers all waters above Grand Coulee Dam and all tribal waters; EPA's TMDL covers all tribal waters of the Colville Confederated Tribes, including the right bank of the Columbia River from Chief Joseph Dam downstream to the Okanogan River confluence. Ecology's issuance covers all state waters downstream from Grand Coulee Dam to the Snake River confluence.

A summary implementation strategy prepared by Ecology and the Spokane Tribe of Indians describes proposed measures that could be used to reduce TDG levels in the Columbia River. Short-term actions primarily focus on meeting Endangered Species Act (ESA) requirements, while long-term goals address both ESA and TMDL requirements (Ecology et. al., 2004). Many of the recommended TMDL actions are currently being addressed by Douglas PUD through the implementation of the Wells Anadromous Fish Agreement and Habitat Conservation Plan (HCP) for anadromous salmon, the Bull Trout Management Plan resulting from consultation with the U.S. Fish and Wildlife Service, and requirements described in current and past GAPs.

The Wells Project occupies waters both upstream and downstream of the Okanogan River. In waters upstream of the Okanogan River, the TMDL does not provide an exemption for fish passage spills (except as a temporary waiver or special condition as part of the short-term compliance period, as described in the Implementation Plan, Appendix A of the TMDL). Downstream of the Okanogan River, allocations are provided based on both the 110 percent criteria and the criteria established for fish passage in the Washington State WQS. Any adjustment for fish passage downstream of the Okanogan River requires an Ecology-approved Gas Abatement Plan or GAP (Ecology et al. 2004).

1.2.5 Additional 401 Certification Requirements

On May 27, 2010 Douglas PUD filed an application for a new license with the FERC for the Wells Project. On September 30, 2010, Ecology received an application for a 401 Certification from Douglas PUD, requested pursuant to the provisions of 33 USC §1341 (§401 of the Clean Water Act). On September 12, 2011, Douglas PUD withdrew its request and reapplied. On February 27, 2012, Ecology concluded that

the Wells Project, as conditioned by its 401 Certification/Order No. 8981, would comply with all applicable provisions of 33 USC 1311, 1312, 1313, 1316, 1317 and appropriate requirements of Washington State law. The 401 Certification general conditions that are relevant to the GAP and the abatement of TDG under the TDG adjustment are as follows:

- Douglas PUD shall consult with Ecology before it undertakes any change to the Project or Project operations that might significantly and adversely affect compliance with any applicable water quality standard (including designated uses) or other appropriate requirement of state law.

- Copies of the Wells Project 401 Certification and associated permits, licenses, approvals and other documents shall be kept on site and made readily available for reference by Douglas PUD, its contractors and consultants, and by Ecology.

- Douglas PUD shall allow Ecology access to inspect the Project and Project records required under the 401 Certification for the purpose of monitoring compliance with conditions of the 401 Certification. Access will occur after reasonable notice, except in emergency circumstances.

- Douglas PUD shall, upon request by Ecology, fully respond to all reasonable requests for materials to assist Ecology in making determinations under the 401 Certification and any resulting rulemaking or other process.

- Douglas PUD shall operate the Wells Project in compliance with a GAP approved by Ecology. By February 28 of each year, Douglas PUD shall submit a GAP to Ecology for approval. Pending Ecology's approval of each subsequent GAP, Douglas PUD shall continue to implement the activities identified within the previously approved plan.

- The GAP will include the Spill Operations Plan and will be accompanied by a fisheries management plan (section 2.2.1) and physical (section 4.1.1) and biological (section 2.2.2) monitoring plans. The GAP shall include information on any new or improved technologies to aid in the reduction in TDG.

- Commencing one year after issuance of a new FERC license, Douglas PUD shall monitor and report spills and TDG during non-fish spill season to determine TDG compliance with the 110 percent standard (see section 4.1.1). The non-fish spill season is defined as the times of the year that are not considered the fish spill season (generally April to end of August).

- If Douglas PUD, at any point, considers modifying any of the measures identified in the spill playbook, they will immediately develop proposed alternative(s) that will produce levels of TDG equal to or less than those estimated to be produced by the measures to be replaced. These measures should be implementable in a similar timeframe and must be submitted to Ecology for review and approval prior to implementation.

- The Project shall be deemed in compliance with the TMDL for TDG as long as it remains in compliance with the terms of the 401 Certification. The certification, including the GAPs and the

Water Quality Attainment Plan (section 2.2.4), is intended to serve as the Project's portion of the Detailed Implementation Plan for the TDG TMDL.

The 401 Certification also contains specific conditions that are relevant to the GAP and the abatement of TDG under the TDG adjustment are as follows:

- Commencing one year after issuance of the new license, Douglas PUD shall monitor and report spills and TDG during non-fish spill season to determine compliance with the 110% standard.
- Douglas PUD shall maintain a TDG monitoring program at its Fixed Monitoring Locations in the forebay and tailrace of Wells Dam and/or at other locations as determined by Ecology, in order to monitor TDG and barometric pressure. Douglas PUD shall monitor TDG hourly throughout the year.
- The TDG monitoring program shall conform to the Ecology Quality Assurance Project Plan (QAPP) requirements per Section 6.7 (f) of the [license] order and the procedures shall be at least as stringent as the quality assurance/quality control calibration and monitoring procedures developed by the USGS for the Columbia River.
- Douglas PUD shall provide an annual TDG report to Ecology for review and approval by February 28th of each year.
- Within one year of issuance of the new license, Douglas PUD shall coordinate the annual HCP Project Fish Bypass/Spill Operations Plan with the GAP, using best available information to minimize the production of TDG. This coordination shall be accomplished in consultation with the Wells HCP Coordinating Committee and the aquatic SWG.
- Within one year of license issuance, Douglas PUD shall submit a Water Quality Attainment Plan for Ecology to review and approve. The plan shall include a compliance schedule to ensure compliance with the water quality criteria with 10 years.
- Douglas PUD shall manage spill toward meeting water quality criteria for TDG during all flows below 7Q10 by minimizing voluntary spill through operations, including scheduling maintenance based upon predicted flows, avoiding spill by coordinating operations with updstream dams to the extent that it reduces TDG, maximize power house discharge, especially during periods of high river flows, and manage voluntary spill in real time in an effort to continue to meet TDG numeric criteria consistent with the GAP.

1.2.6 Additional Requirements of the FERC Operating License

Article 401(a) of the FERC operating license for P-2149 requires that the Gas Abatement Plan be filed with the Commission for approval following the approval of the GAP by NMFS, USFWS and Ecology. Article 401(b) requires the TDG report be submitted to the Commission by February 28th of each year.

Article 401(c) requires Commission authorization of an application to amend the license, prior to the implementation of measures to address non-compliance with numeric water quality criteria.

1.3 History of Operations and Compliance

1.3.1 Historical Flows

Flow from the Columbia River originates in the headwaters of the Canadian Rockies and picks up snow melt from tributary streams as it travels over 1,243 miles before emptying into the Pacific Ocean. There are 85,300 square miles of drainage area above Wells Dam. The natural hydrograph had low flows in November through January with high flows in May through July. Storage dams on the Columbia River and its tributaries upstream of the Wells Project in the U.S. and Canada capture spring and summer high flows to hold for release in the fall and winter months. Table 1 presents information on Columbia River flow, as measured at Wells Dam from 2002 to 2012, and shows that the current hydrograph of the Columbia River is controlled by upstream, federally managed storage and release regimes. Juvenile anadromous salmonid migration occurs within a regime of reduced high flows during the spring migration period.

In general, the hydropower system and reservoir operations in the Columbia River are coordinated through a set of complex agreements and policies that are designed to optimize the benefits and minimize the adverse effects of project operations. The Wells Project operates within the constraints of the Pacific Northwest Coordination Agreement, Canadian Treaty, Canadian Entitlement Agreement, Hourly Coordination Agreement, the Hanford Reach Fall Chinook Protection Program and the FERC regulatory and license requirements.

Table 1. Average monthly flows (kcfs) at Wells Dam, by month (2002-2012).

	Month											
Year	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
2002	91	91.9	66.1	116.9	135	205.6	176.5	115.1	73.9	79.4	96.7	93.3
2003	75.7	69.9	82.2	106.7	130.7	137.6	106.2	96.4	64	74.6	87.7	105.5
2004	96.2	80.5	70	87.3	114.2	132.3	101.5	95.7	75.7	79.3	90.9	112
2005	102	104.4	94.9	85.4	122.1	130.8	136.8	107.9	67.6	78.5	90.9	91.8
2006	101.2	104.5	87.3	148.4	165.3	195.1	127.9	103.9	66.3	66.3	77.1	90.8
2007	114.5	85.3	120.3	154.7	159.2	152	133	113.1	60	64.4	80.2	86.8
2008	104	88.6	82.4	90.3	158.7	206.8	135.3	86.5	60.7	63	75.2	94.2
2009	107.8	80.2	71.5	111	122.7	146.6	103.1	74.5	53.5	58.1	80.1	101.8
2010	71.1	72.1	65.2	70.7	112.2	173	119.9	83.6	53.8	67.7	85.8	86.2
2011	114.9	136.6	124.1	145.7	206	259	206.6	139.9	73.8	74.9	89.9	98.2
2012	93.4	83.5	118.4	174.1	217.2	232.9	253.8	158.6	79.5	64	88.4	NA
All	97.4	90.7	89.3	117.4	149.4	179.2	145.5	106.8	66.3	70.0	85.7	96.1

1.3.2 Spill Operations

1.3.2.1 General Operation

The Hourly Coordination Agreement is intended to integrate power operations for the seven dams from Grand Coulee to Priest Rapids. "Coordinated generation" is assigned to meet daily load requirements via Central Control in Ephrata, WA. Automatic control logic is used to maintain pre-set reservoir levels to meet load requirements and minimize involuntary spill. These pre-set reservoir levels are maintained at each project via management of a positive or negative "bias". Positive or negative bias assigns a project more or less generation based on its reservoir elevation at a given time and thus, maximizes system benefits and minimizes involuntary spill.

1.3.2.2 Spill for Fish

Wells Dam is a hydrocombine design where the spillway is situated directly above the generating units. Research at Wells Dam in the mid-1980s showed that a modest amount of spill effectively guided 92.0-96.2% of the spring and summer downstream migrating juvenile salmonids through the JBS (Skalski et al. 1996; Table 2). The operation of the Wells JBS utilizes the five even-numbered spillways. These spillways have been modified with constricting barriers to improve the attraction flow while using modest levels of water. These spillways are used to provide a non-turbine passage route for downstream migrating juvenile salmonids from April through August. Normal operation of the JBS uses 10 kcfs. During periods of extreme high flow, one or more of the JBS barriers will be removed to provide adequate spill capacity to respond to an emergency plant load rejection. Spill barriers may also be removed to minimize TDG production during high spill events, or when flood flows are forecast. Bypass gates are opened when adjacent turbines are operating.

Typically, the JBS will use approximately 6 to 8 percent of the total river flow for fish guidance. Between the years 1997 and 2004, the volume of water dedicated to JBS operations has ranged from 1.5 to 3.2 million acre-feet annually. The operation of the JBS adds a small amount of TDG (up to 2 percent) while meeting a very high level of fish guidance and protection. This high level of fish protection at Wells Dam has met the approval of the fisheries agencies and tribes and is vital to meeting the survival performance standards contained within the FERC-approved HCP. The Wells Project JBS is the most efficient bypass system on the mainstem Columbia River.

Table 2. Wells Hydroelectric Project Juvenile Bypass System Efficiency.

Species	% JBS Passage
Yearling (spring) Chinook	92.0
Steelhead	92.0
Sockeye	92.0
Subyearling (summer/fall) Chinook	96.2

The JBS is used to protect downstream migrating juvenile salmonids. Fish bypass operations at Wells Dam falls into two seasons, Spring Bypass and Summer Bypass. For 21 years, the status of the fish migration for both spring and summer periods was monitored by an array of hydroacoustic sensors placed in the forebay of Wells Dam. The operation period for the juvenile bypass begins in April and ends in August; actual start and stop dates are set by the HCP Coordinating Committee, and are based on long-term monitoring to bracket the run timing of greater than 95 percent of both the spring and summer migrants. Up to thirteen million juvenile salmonids migrate past Wells Dam each year.

1.3.2.3 Flows in Excess of Hydraulic Capacity

The Wells Project is a “run-of-the river” project with a relatively small storage capacity (~98,000 acre ft). By comparison, Grand Coulee Dam, two projects upstream of Wells Dam, has 58 times the storage capacity of the Wells Reservoir. River flows in excess of the ten-turbine hydraulic capacity (219 kcfs) at Wells Dam must be passed over the spillways.

The forebay elevation at Wells Dam is maintained between 781.0 and 771.0 msl. The Wells Project has a hydraulic generating capacity of 219 kcfs (ASL 2007) and a spillway capacity of 1,180 kcfs. In recent years however the Wells project has had less than 200 kcfs plant capacity due to ongoing generator and turbine rebuild and upgrade projects. Data for Columbia River flows for eighty-five years at Priest Rapids yielded a peak daily average discharge of 690 kcfs on June 12, 1948 (USGS web page for historical flows at Priest Rapids on the Columbia River, http://waterdata.usgs.gov/wa/nwis/dv/?site_no=12472800). Therefore, the hydraulic capacity of Wells Dam is well within the range of recorded flow data.

1.3.2.4 Flow in Excess of Power Demand

Spill may occur at flows less than the Wells Project hydraulic capacity when the volume of water is greater than the amount required to meet electric power system loads. This may occur during temperate weather conditions and when power demand is low or when non-power constraints on river

control results in water being moved through the Mid-Columbia at a different time of day than the power is required (i.e. off-peak periods). Hourly coordination (Section 3.2) between hydroelectric projects on the river was established to maximize generation by minimizing spill. Spill in excess of power demand provides benefit to migration juvenile salmonids. Fish that pass through the spillway survive at a higher rate relative to passage through a turbine and the turbulence in the tailrace generated by spill in excess of power demand increases tailrace velocity and reduces tailrace egress times. The reductions in tailrace egress time and increases in water turbulence and velocity reduce predation in the Wells tailrace.

1.3.2.5 Gas Abatement Spill

Gas Abatement Spill is used to manage TDG levels throughout the Columbia River Basin. The Technical Management Team (including NMFS, USACE, and Bonneville Power Administration [BPA]) implements and manages this spill. Gas Abatement Spill is requested from dam operators at other projects in the Columbia and Snake Rivers where gas levels are high. A trade of power generation for spill is made between operators, providing power generation in the river with high TDG and trading an equivalent amount of spill from a project where TDG is lower. Historically, the Wells Project has accommodated requests to provide Gas Abatement Spill. However, in an effort to limit TDG generated at the Wells Project, Douglas PUD has adopted a policy of not accepting Gas Abatement Spill at Wells Dam.

1.3.2.6 Other Spill

Other spill includes spill as a result of maintenance or plant load rejection. A load rejection occurs when the generating plant is forced off-line by an electrical fault, which trips breakers and shuts off generation. At a run-of-the-river hydroelectric dam, if water cannot flow through operating turbines, then the river flow that was producing power has to be spilled until turbine operation can be restored. These events are extremely rare, and would account for approximately 10 minutes in every ten years.

Maintenance spill is utilized for any activity that requires spill to assess the routine operation of individual spillways and turbine units. These activities include checking gate operation, conducting index and generator load testing and all other maintenance activities that would require spill to pass water. The FERC requires that all spillway gates be operated once per year. To control TDG levels associated with maintenance spill, Douglas PUD limits, to the extent practical, maintenance spill during period of peak flow .

1.3.3 Compliance Activities in Previous Year

1.3.3.1 Operational

Since the Wells Project is a “run-of-the river” project with a relatively small storage capacity, river flows in excess of the ten-turbine hydraulic capacity must be passed over the spillways. Outside of system coordination and gas abatement spill (Douglas PUD has adopted a policy of not accepting the latter), minimization of involuntary spill has primarily focused on minimizing TDG production dynamics of water spilled based upon a reconfiguration of spillway operations. The 2009 Wells Project GAP (Le and Murauskas, 2009) introduced the latest numerical model developed by the University of Iowa’s IIHR-

Hydroscience and Engineering Hydraulic Research Laboratories. The two-phase flow computational fluid dynamics tool was used to predict hydrodynamics of TDG distribution within the Wells Dam tailrace and further identify operational configurations that would minimize TDG production at the Project. In an April 2009 report, the model demonstrated that Wells Dam can be operated to meet the TDG adjustment criteria during the passage season with flows up to 7Q-10 levels provided the forebay TDG levels are below 115 percent. Compliance was achieved through the use of a concentrated spill pattern through Spillbay No. 7 and surplus flow volume through adjacent odd numbered spillbays in a defined pattern and volume. These preferred operating conditions create surface-oriented flows by engaging submerged spillway lips below the ogee, thus increasing degasification at the tailrace surface, decreasing supersaturation at depth, and preventing high-TDG waters from bank attachment. These principles were the basis of the 2009 Wells Project Spill Playbook and were fully implemented for the first time during the 2009 fish passage (spill) season with success. Overall, no exceedances were observed in either the Wells Dam tailrace or the Rocky Reach forebay in 2009.

In 2010, the concepts from the 2009 Spill Playbook were integrated into the 2010 Wells Project Spill Playbook given their effectiveness in maintaining levels below TDG criteria during the previous year. High Columbia River flows in June, which exceeded the preceding 15-year average flow, resulted in several exceedances of the hourly (125 percent maximum) and 12C-High (120 percent) TDG limits in the Wells Dam tailrace, and Rocky Reach forebay (115 percent). In response, Douglas PUD implemented an in-season analysis of the 2010 Spill Playbook and determined that full implementation of the recommendations from IIHR Engineering Laboratory would require the removal of the juvenile fish bypass system flow barriers in one even numbered spillbay. Following the in-season analysis and consultation with the HCP Coordinating Committee, changes were made to the 2010 Spill Playbook that allowed for the removal of the juvenile fish bypass system barriers in spillbay 6. Specifically, the Spill Playbook was modified to state that when spill levels approach the 53 kcfs threshold, the JBS barriers in spillbay 6 would be removed in order to remain in compliance with the TDG criteria in the Wells Dam tailrace and Rocky Reach Dam forebay. When spill exceeded 53 kcfs, excess spill would be directed through spillbays 6 and 7 rather than through spillbays 5 and 7. This operational configuration resulted in a more compact spill pattern that reduced the air-water interface surface area between spillway flows and the subsequent potential for lateral mixing and air entrainment.

In February 2011, Douglas PUD conducted an additional technical analysis of the 2010 Spill Playbook (after in-season changes) and confirmed that continued implementation would be appropriate for 2011 with additional minor modifications. Following approval of the 2011 GAP by Ecology, the 2011 Spill Playbook was implemented. Only minor changes were made to the 2012 spill playbook as a result of high compliance during the 2011 spill season.

In December of 2012 the final GAP report was completed for the 2012 spill season. After analysis it was determined that the 2012 spill season had the 3rd highest average monthly flows since 1969 (April-August). In addition incoming flows were reliably above 115%. Despite these conditions Wells Dam demonstrated high compliance with all standards aside from the Rocky Reach 115% 12C-high forebay standard since incoming flows to Wells were above 115% greater than 50% of the spill season days.

Given these unique conditions, and high compliance performance in 2011 and 2012, no changes are suggested for the 2013 spill playbook.

1.3.3.2 Structural

No structural modifications were implemented (none were scheduled) during the 2012 monitoring season, other than the removal of the JBS barriers, if needed, to accommodate high spill volumes in accordance with the Spill playbook. No structural modifications are planned for the 2013 spill season.

1.3.3.3 Biological Monitoring

NMFS has shown that Gas Bubble Trauma (GBT) is low if the level of TDG can be managed to below 120 percent (NMFS 2000). They recommend that "the biological monitoring components will include smolt monitoring at selected smolt monitoring locations and daily data collection and reporting only when TDG exceeds 125 percent for an extended period of time." The 2012 Wells Project GAP has included the NMFS recommendation to sample for GBT in juvenile salmon when TDG levels exceed 125 percent saturation (NMFS 2000). In 2012, the 125 percent standard was exceeded on numerous occasions, but almost always when flows at Wells Dam were above 7Q-10 flood flows (246.0 kcfs). Regardless of 7Q-10 conditions, Douglas PUD conducted GBT sampling of juvenile salmonids at the Rocky Reach juvenile fish bypass, and in addition, sampled adult salmon at the Wells fish ladder traps. Over 800 adult salmon were collected and sampled from Wells Dam fish ladders, with none showing signs of GBT expression in 2012. Juvenile biological monitoring was initiated on May 3 and continued on days subsequent to 125% exceedences, which require monitoring. Daily monitoring continued until June 29, 2012, after which a three day/week sampling schedule was implemented due to TDG levels being sustained above 125 percent. Douglas PUD continued to monitor TDG conditions and biological responses until July 25, 2012.

Biological sampling indicated that GBT expression in juvenile salmonids examined at Rocky Reach averaged 1.25% for all 24 days of sampling, with a maximum daily occurrence of <6% of the fish examined. In all cases, GBT expression was mild with only a few cases of moderate expression (score of 1 or 2 on the 1-4 expression score scale). GBT expression peaked in late June and early July when the highest TDG values were observed in the Wells and Rocky Reach forebays. GBT expression was confounded by species specific sensitivities to levels of TDG coupled with changes to the species run composition during the spill season. Juvenile salmonids expressed varied amount of GBT by species. Coho expressed the highest incidence of GBT with steelhead and yearling Chinook expressing intermediate GBT and sockeye and subyearling Chinook appearing to be the most resilient to high TDG concentrations. Throughout the season, adult spring Chinook sampled at Wells Dam appeared to have few symptoms of GBT, even when TDG was above 130 percent in the Wells tailrace.

1.3.4 Compliance Success in Previous Year (2012)

TDG river flows in 2012 were much higher than historic flows at the Wells Project (Table 3); 156 percent of the 42-year average for the entire spill season. Flows in 2012 were the third-highest on record since Wells Dam was constructed (1997 and 1972 were slightly higher). The maximum hourly flow observed during the spill season was 314 kcfs on June 25 and flows frequently exceeded the 7Q-10 value of 246.0

kcfs. The average monthly flow from mid-June to the end of July exceeded the 7Q-10 value for the Wells Project in 2012.

Table 3. Average monthly river flow volume (kcfs) during the TDG monitoring season at the Wells Project in 2012 compared to the previous 42-year average (1969-2011), by month.

Month	1969-2011 Mean	2012 Mean	Percent Difference from 42-year Average
April	115.6	174.1	+151%
May	149.4	217.2	+145%
June	164.5	232.9	+142%
July	132.2	253.8	+192%
August	104.6	158.7	+152%
All	133.3	207.34	+156%

High flows and incoming water out of compliance with the TDG standards, resulted in elevated TDG. On June 29 forced spill reached 167.5 kcfs, the maximum hourly value for the 2012 season (total outflow was 312.8 during the same hour). These high spill events were attributed to both flow volumes in excess of the Project's hydraulic capacity, and flows in excess of the power system needs and/or transmission system capacity. Spill volume across the April-August spill season was over 260 percent of the preceding 17-year average (Table 4).

Table 4. Average monthly spill (kcfs) during the TDG monitoring season at the Wells Project in 2012 compared to the 17-year average (1995-2011), by month.

	1995-2011		2012	
Month	**Mean**	**Std Dev**	**Mean**	**Std Dev**
April	10.9	7.0	20.6	13.7
May	21.9	20.7	59.0	18.6
June	36.4	39.6	65.4	41.9
July	15.1	11.2	84.4	28.4
August	7.9	2.1	12.5	9.4
Spill Season	18.4	16.1	48.4	37.0

As a result of these high spill volumes and the reception of non-compliant upstream water from the federal hydro-system, TDG exceeded the fish passage exception levels in early May, through early August. Of the 133 days during the spill season, there were 56 days when one or more hours had flows at Wells Dam above the 7Q-10 value. During the 2012 monitoring season, the TDG criterion for the forebay of Wells Dam was exceeded on all but 8 days (94.0 % of the spill season). If days where the Wells forebay exceedances are not excluded from compliance analysis except when TDG levels in the Wells tailrace are equal to or less than incoming forebay TDG levels, compliance for all three standards range from 49-98%. The 2012 compliance summary is reported in table 5.

Table 5. 2012 compliance summary.

	Compliance	
	Days with 7Q-10 flows removed	**Considering 7Q-10 flows**
Wells Tailrace 125% hourly standard		
Days out of compliance	2	2
Spill/bypass season	77	133
DCPUD Percent compliance	**97%**	**98%**
Wells Tailrace 120% 12C-High standard		
Days out of compliance	14	14
Spill/bypass season	77	133
DCPUD Percent compliance	**82%**	**89%**
Rocky Reach Forebay 115% 12C-High standard		
Days out of compliance	39	39
Spill/bypass season	77	127*
DCPUD Percent compliance	**49%**	**69%**

* Six days where the Rocky Reach forebay sensor failed has been removed from the analysis.

Despite extended periods of high flows, incoming TDG and spill, unit 7 rebuild, the Wells Project attained a high percentage of compliance when periods of flows in excess of 7Q-10, and periods when incoming water to the Project exceeded TDG criteria, are removed from the analysis. These encouraging results support the continued implementation of the 2012 Spill Playbook in 2013 during the fish passage season.

2.0 Proposed Operations and Activities

2.1 Operational Spill

2.1.1 Minimizing Involuntary Spill

Based on the Wells Project'simproved TDG performance as a result of 2012 operations associated with implementation of the Wells Project Spill Playbook, similar operating principles will be implemented for the 2013 fish passage season.

As discussed in Section 1.3.3.1 above, high Columbia River flows in 2012 resulted from high flood flows and subsequent forced spill. Often, incoming water in the forebay was already above tailrace compliance levels. However, operations following the 2012 Spill Playbook, when forebay inflows were below 115 percent TDG adjustment criterion and below 7Q-10 flows, resulted in high rates of compliance. Similarly to 2012, the 2013 Spill Playbook is proposing to shift concentrated spill away from spillway 7 to spillway 5. Spillway 5 was selected because spill through this bay can be more reliably supported by discharge from adjacent turbine units. The turbine discharge from Units 4 and 5 are expected to further enhance the surface jet being spilled through spillway 5. The updated Spill Playbook for 2012 is attached as Appendix 1.

In addition to minimizing involuntary spill through the implementation of the Spill Playbook, Douglas PUD shall manage spill toward meeting water quality criteria for TDG during all flows below 7Q-10 as follows:

- Minimize voluntary spill through operations including to the extent practicable, by scheduling maintenance based on predicted flows;
- Avoid spill by continuing to coordinate operations with upstream dams, to the extent that it reduces TDG;
- Maximize powerhouse discharge, especially during periods of high river flows; and
- During fish passage season, manage voluntary spill levels in real time in an effort to continue to meet TDG numeric criteria.

2.2 Implementation

2.2.1 Fisheries Management Plans

Juvenile salmon and steelhead survival studies conducted at the Wells Project in accordance with the HCP have shown that the operation of the Wells Project, of which the JBS is an integral part, provides an effective means for outmigrating salmon and steelhead to pass through the Wells Project with a high rate of survival (Bickford et al. 2001, Bickford et al. 2011) (Table 6). The Wells JBS is the most efficient juvenile fish bypass system on the mainstem Columbia River (Skalski et al. 1996). The Wells Anadromous Fish Agreement and HCP (Douglas PUD 2002) is the Wells Project's fisheries management plan for anadromous salmonids, and directs operations of the Wells JBS to achieve the No Net Impact (NNI) standard for HCP Plan Species. The Aquatic Resource Management Plans (for white sturgeon, bull trout, Pacific lamprey, resident fish, water quality, and aquatic nuisance species) in the Wells Project's Aquatic Settlement Agreement (developed in support of the pending Wells Project operating license) are the fisheries management plans for all other aquatic life designated uses.

Table 6. 1998 -2000, 2010 Wells Hydroelectric Project Juvenile Survival Study Results.

Species	% Project Survival
Yearling Chinook (2010)	96.4
Yearling Chinook and Steelhead (1998, 1999)	96.2

In spring 2010, Douglas PUD conducted a survival verification study with yearling Chinook salmon, a required 10-year follow-up study to confirm whether the Wells Project continues to achieve survival standards of the Wells Anadromous Fish Agreement and HCP. Approximately 80,000 Passive Integrated Transponder (PIT)-tagged yearling summer Chinook were released over a 30 day period in 15 replicates. The study determined that juvenile Chinook survival from the mouth of the Okanogan and Methow rivers averaged 96.4 percent over the 15 replicate releases of study fish (Table 6). This result confirms conclusions from the three previous years of study and documents that juvenile fish survival through the Wells Project continues to exceed the 93 percent Juvenile Project Survival Standard required by the HCP (Bickford et al. 2011).

The current phase designations (status of salmon and steelhead species reaching final survival determination) for the HCP Plan Species are summarized in Table 7. Specific details regarding survival study design, implementation, analysis, and reporting are available in annual summary reports prepared and approved by the Wells HCP Coordinating Committee.

Table 7. Wells Hydroelectric Project Habitat Conservation Plan Species Phase Designations.

Species	Phase Designation
Yearling (spring) Chinook	Phase III[1] – Standards Achieved (22-Feb-05)
Steelhead	Phase III – Standards Achieved (22-Feb-05)
Sockeye	Phase III – Additional Juvenile Studies (22-Feb-05)
Subyearling (summer/fall) Chinook	Phase III – Additional Juvenile Studies (22-Feb-05)
Coho	Phase III – Additional Juvenile Studies (27-Dec-06)

In 2013, Douglas PUD shall continue to operate Wells Dam adult fishways and the JBS in accordance with HCP operations criteria to protect aquatic life designated uses. Furthermore, all fish collection (hatchery broodstock and/or evaluation activities) or assessment activities that occur at Wells Dam will require approval by Douglas PUD and the HCP Coordinating Committee to ensure that such activities protect aquatic life designated uses.

Douglas PUD shall continue to operate the Wells Project in a coordinated manner toward reducing forebay fluctuations and maintaining relatively stable reservoir conditions that are beneficial to multiple designated uses (aquatic life, recreation, and aesthetics). Coordinated operations reduce spill, thus reducing the potential for exceedances of the TDG numeric criteria and impacts to aquatic life associated with TDG.

2.2.2 Biological Monitoring

As in past years, if hourly TDG levels exceed 125 percent in the tailrace of Wells Dam, Douglas PUD will conduct adult and juvenile salmonid GBT sampling. Douglas PUD will work with the Washington Department of Fish and Wildlife hatchery programs to monitor the occurrence of GBT on adult salmon collected in the Wells Dam and Wells Hatchery fishways. Upon collection of broodstock, hatchery staff will inoculate each fish, place a marking identification tag on them and look for any fin markings or unusual injuries. It is expected that adult broodstock sampled for GBT will consist of spring and summer Chinook and sockeye since they are the species migrating through the Wells Project during fish spill periods where high TDG is a concern, however all encountered salmonids including steelhead and bull trout will be examined.

The JBS at Wells Dam does not have facilities to allow for juvenile fish sampling and observation. To address GBT sampling for juvenile anadromous salmonids if hourly TDG levels exceed 125 percent in the tailrace of Wells Dam, Douglas PUD will request biological sampling of migrating juveniles for symptoms of GBT at the Rocky Reach juvenile bypass sampling facility on the day subsequent to the exceedence. Target species for juvenile GBT sampling will consist of coho, sockeye, and yearling and subyearling Chinook and steelhead. If flood flows above 7Q-10 persist for extended timeframes (more than one

[1] Phase III = Dam survival >95 percent or project survival >93 percent or combined juvenile and adult survival >91 percent (Standard Achieved).

week), sampling effort will be reduced to 3 days per week. Proposed biological monitoring for 2013 is consistent with 2012 sampling measures.

2.2.3 Water Quality Forums

Douglas PUD is currently involved in the Water Quality Team meetings held in Portland, Oregon. The purpose of the Water Quality Team is to address regional water quality issues. This forum allows regional coordination for monitoring, measuring, and evaluating water quality in the Columbia River Basin. Douglas PUD will continue its involvement in the Water Quality Team meetings for further coordination with other regional members.

Douglas PUD is also currently involved in the Transboundary Gas Group that meets annually to coordinate and discuss cross border dissolved gas issues in Canada and the U.S. Douglas PUD will continue its involvement with the Transboundary Gas Group.

In 2012, Douglas PUD actively participated in regional water quality forums with Ecology, Washington Department of Fish and Wildlife, Tribal Agencies, the U.S. Fish and Wildlife Service, NMFS, the USACE, and other Mid-Columbia PUDs (i.e., Grant and Chelan counties). These meetings, ranging from the Transboundary Gas Group to meetings with the USACE to individual telephone and email information exchange, allow for regional coordination for monitoring, measuring, and evaluating water quality in the Columbia River Basin. Douglas PUD is proposing to continue its involvement in such forums to further improve coordination with other regional water quality managers.

2.2.4 Water Quality Attainment Plan and Quality Assurance Project Plans

In November 2012, Douglas PUD received a new operating license for Wells Dam from the FERC. By October 2013 Douglas PUD is required to submit a Water Quality Attainment Plan (WQAP) and Water Quality Assurance Project plans (QAPP) for temperature and total dissolved gas monitoring to Ecology for review and approval. After Ecology approval, Douglas PUD shall submit the WQAP and QAPP plans to FERC for approval prior to implementation.

The WQAP shall include a compliance schedule to ensure compliance with TDG criteria within 10 years. The WQAP will also allow time for the completion of the necessary studies or for the resolution of the issue of elevated incoming TDG from upstream projects through rule-making or other means. The WQAP shall be prepared in consultation with the Aquatic Settlement Work Group (Aquatic SWG) and the HCP Coordinating Committee and shall meet the requirements of WAC 173-201A-510(5). The WQAP shall:

- Identify all reasonable and feasible improvements that could be used to meet TDG criteria. Data on high TDG levels and flow coming into the Wells forebay and its effects on Project compliance shall be included;
- Contain the analytical methods that will be used to evaluate all reasonable and feasible improvements;

- Provide for any supplemental monitoring that is necessary to track compliance with the numeric WQS; and
- Include benchmarks and reporting sufficient for Ecology to track Douglas PUD's progress toward implementing this plan and achieving compliance within ten years of Ecology's approval of the plan.

If implementing the compliance schedule does not result in compliance with TDG criteria at the time the compliance schedule expires, Douglas PUD may explore other alternative approaches available in the water quality standards, including a second compliance schedule or alternatives provided in WAC 173-201A-510(5)(g).

3.0 Structural Activities

No structural modifications related to spill are scheduled to occur at the Wells Project in 2013. As in 2012, high flow volume and spill may require JBS barrier removal per this GAP (see Appendix 2: 2013 Spill Playbook). The removal of JBS barriers to reduce TDG production at Wells Dam has been integrated into the Juvenile Fish Bypass Operating Plan that is annually approved by the HCP Coordinating Committee.

4.0 Compliance and Physical Monitoring

4.1 Monitoring Locations

4.1.1 TDG

TDG monitoring has been implemented in the Wells Dam forebay since 1984. Douglas PUD began monitoring TDG levels in the Wells Dam tailrace in 1997 by collecting data from a boat and drifting through the tailrace at four points across the width of the river. During the transect monitoring, no TDG "hot spots" were detected; the river appeared completely mixed horizontally. A fixed TDG monitoring station was established in 1998. The placement of the fixed monitoring station was determined based upon the 1997 work and was further verified as collecting data representative of river conditions during a 2006 TDG assessment at Wells Dam (EES et. al. 2007). Results of the 2008-2009 TDG numerical modeling activities conducted by University of Iowa/IIHR also confirmed that the tailrace monitoring station is located at a site representative of the mixed river flow, particularly during higher flows. Furthermore, locations of both forebay and tailrace sensors had to be protected to avoid sensor/data loss and damage and for safe accessibility during extreme high flows. The current locations of both the forebay and tailrace monitors took these criteria into consideration.

TDG monitoring at the Wells Project typically commences on April 1 and continues until September 15 annually. This monitoring period encompasses the operation of the Wells JBS as well as when river flows are at their highest and when a majority of spill occurs. Throughout this period, data from both forebay and tailrace sensors are transmitted by radio transmitters to a master radio at Wells Dam. This system is checked at the beginning of the season for communication between the probes and

transmitters by technicians at Wells Dam. TDG data are sent and logged at the Douglas PUD Headquarters' building in 15-minute intervals. Information on barometric pressure, water temperature and river gas pressure is sent to the USACE on the hour over the Internet. The four data points (15 minute) within an hour are used in compiling hourly TDG values, the 24-hour TDG average and the 12C-High readings in a day (24-hour period).

In 2013, Douglas PUD intends to operate a redundant TDG sensor in the tailrace location. Should the primary sensor fail data gaps can be filled from the second sensor. Installation timeframe will be contingent upon regulatory agencies' approvals for in-water work and modification of the shoreline within the ordinary high water mark. Hourly TDG data transmissions to the USACE of Wells forebay and tailrace station data will be expanded to cover the year-round monitoring requirement (starting April 1, 2013.

Starting in 2013, Douglas PUD is planning on installing and operating a new TDG sensor station in the Wells Reservoir located several miles downstream of Chief Joseph Dam. This new TDG sensor station will provide reliable mixed flow TDG readings from Chief Joseph Dam. The current system operated by the USACE below Chief Joseph Dam collects TDG values from the spillways at the dam and does not provide information on TDG passing through the turbines at Chief Joseph Dam originating from Grand Coulee Dam and does not provide an accurate reading of mixed flow TDG being directed at the Wells forebay.

4.2 Quality Assurance

The broad purpose of a well-designed Quality Assurance Project Plan (QAPP) is to attain data of the type and quality needed to make future decisions surrounding the need, or lack thereof, for changes to project operation and construction related to compliance with TDG and temperature standards.

4.2.1 TDG

Douglas PUD will develop a QAPP for TDG in early 2013 in coordination with the Department of Ecology. Briefly, as part of the Douglas PUD's Quality Assurance/Quality Control (QA/QC) program, Douglas PUD's water quality consultant will visit the TDG sensor sites monthly for maintenance and calibration of TDG instruments. Calibration follows criteria established by the USACE, with the exception of monthly rather than bi-weekly calibration of sensors. A spare probe will be available and field-ready in the event that a probe needs to be removed from the field for repairs.

The consultant will inspect instruments during the monthly site visits and TDG data will be monitored weekly by Douglas PUD personnel. If, upon inspection of instruments or data, it is deemed that repairs are needed, they will be promptly made. Occasionally during the monthly sensor calibration, an error may develop with the data communication. These problems are handled immediately by technicians located at Wells Dam. Generally, the radio transmitters at each fixed station will run the entire season without any problems.

Douglas PUD will collect TDG data year round beginning April 1, 2013 but spill season data (April 9 – August 19) will be reported separately in an annual GAP report submitted to the Department of Ecology

and FERC. As part of the quality assurance process, data anomalies will be removed. This would include data within a 2-hour window of probe calibration and any recording errors that result from communication problems. Data errors will prompt a technician or water quality specialist or consultant site visit, to inspect the instrument and repair or replace, if necessary. Real time data will be made available to the public by November 2013.

4.3 Reporting

Upon approval of the Wells GAP and issuance of a Wells Project TDG adjustment, Douglas PUD will submit an annual report to Ecology no later than February 28 subsequent to each year that the TDG adjustment is approved. The annual report will summarize all GAP activities conducted for the prior year (i.e., annual report filed February 28, 2013 will be for all GAP activities conducted in 2012) as required by Ecology and the FERC. In addition to reporting on spill season compliance, the annual report will include TDG compliance outside the spill season (110%), per the 401 Certification Section 6.7 2) c) iii).

5.0 Conclusions

Pending approval by Ecology, implementation of the measures identified within the 2013 GAP are intended to serve as a long-term strategy to maintain compliance with the Washington State WQS for TDG in the Columbia River at the Wells Project while continuing to provide safe passage for downstream migrating juvenile salmonids.

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National Marine Fisheries Service (NMFS). 2000. Endangered Species Act – Section 7 Consultation: Biological Opinion. Consultation on Remand for Operation of the Columbia River Power System and 19 Bureau of Reclamation Projects in the Columbia Basin. F/NWR/2004/00727. November 30, 2005. Pages 5-6, 5-7, 5-53, 10-9, and Appendix E: Risk Analysis.

Skalski, J. R., G. E. Johnson, C. M. Sullivan, E. Kudera and M. W. Erho. 1996. Statistical Evaluation of Turbine Bypass Efficiency at Wells Dam on the Columbia River, Washington. Canadian Journal of Fisheries and Aquatic Science. Volume 53, No. 10, 1996. Pages 2188-2198.

Washington Department of Ecology, Spokane Tribe of Indians and U.S. Environmental Protection Agency. 2004. Total Maximum Daily Load for Total Dissolved Gas in the Mid-Columbia River and Lake Roosevelt: Submittal Report. Accessed online December 7, 2010 at: http://www.ecy.wa.gov/biblio/0403002.html

7.0 Appendices

Appendix 1. Wells Hydroelectric Project Spill Playbook, 2012.

I. No Forced Spill

The Wells Dam JBS should be operated continuously throughout the juvenile salmon outmigration (April 9 to August 19 for 2013). The standard Wells HCP operating criteria, as described in Section 4.3.1 of the Wells HCP, will apply to the 2013 operating season. The operating criteria includes requirements that at least one bypass bay be operated during the entire JBS season, requires that no turbine is operated without an adjacent bypass bay being open and requires that all five bypass bays be operated continuously for 24 hours when the Chief Joseph Dam uncoordinated discharge estimate for that day is 140 kcfs or greater. The Wells JBS is normally operated with 1.7 kcfs passed through S2 and S10, and 2.2 kcfs through S4, S6, and S8. Figure 1 (below) assumes that the Chief Joseph Dam uncoordinated discharge estimate is greater than 140 kcfs or sufficient turbines units are operating that all five bypass bays are open .

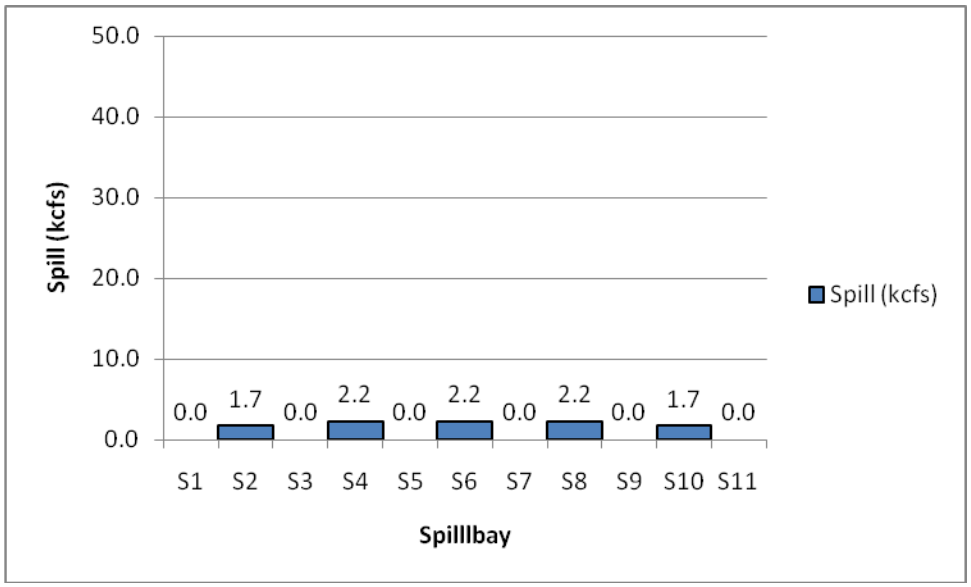

Figure 2. Operational configuration under no forced spill (JBS only).

I. Total Spill ≤ 53.0 kcfs, JBS barriers in place

As forced spill increases, Project Operators should allocate all spill through *S5* until the maximum capacity is reached through that spillbay (~43.0 kcfs). Note that *S5* spill requires support of generation flows from units 4 and 5 to minimize TDG production. This, along with the already established JBS spill (10.0 kcfs) would equal 53.0 kcfs (Figure 3). Over 90% of the spill events over the past decade could have been handled under this configuration.

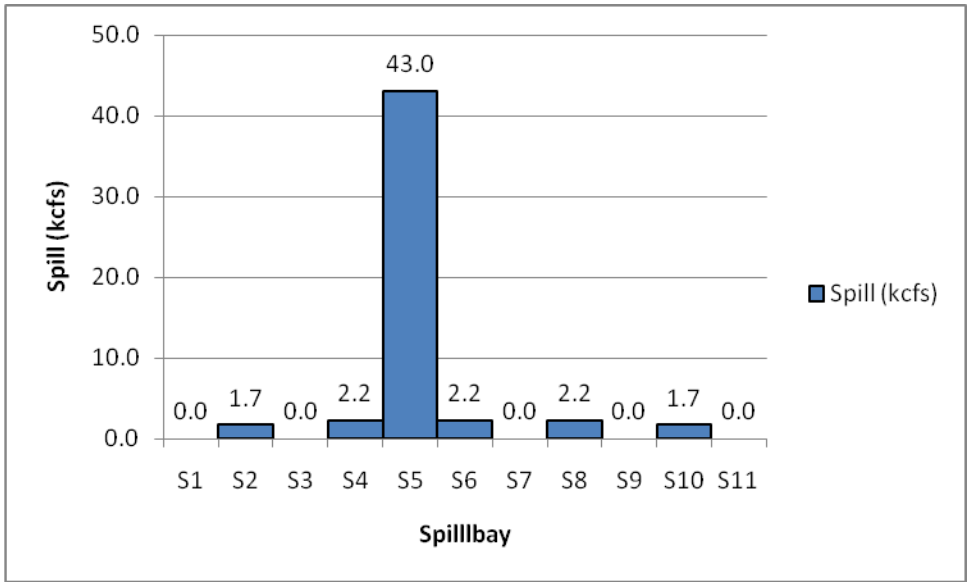

Figure 3. Operational configuration under spill ≤ 53.0 kcfs (including JBS).

II. JBS Barrier Removal Criteria

When either of the following occurs, remove the JBS barrier in *S6*:

Spill in *S5* reaches 30 kcfs and total spill is expected to exceed 40 kcfs for more than 8 hours, *or* total spill is expected to exceed 53 kcfs. After the JBS barrier is removed from *S6* and when flow through S5 is at least 30kcfs, shift 15 kcfs to *S6* (Figure 3). It is best to have generating units 4, 5, and 6 operating to support this spill configuration. Once at least 15 kcfs is being spilled through *S6*, spill can be allocated to *S5* until 43.0 kcfs is reached.

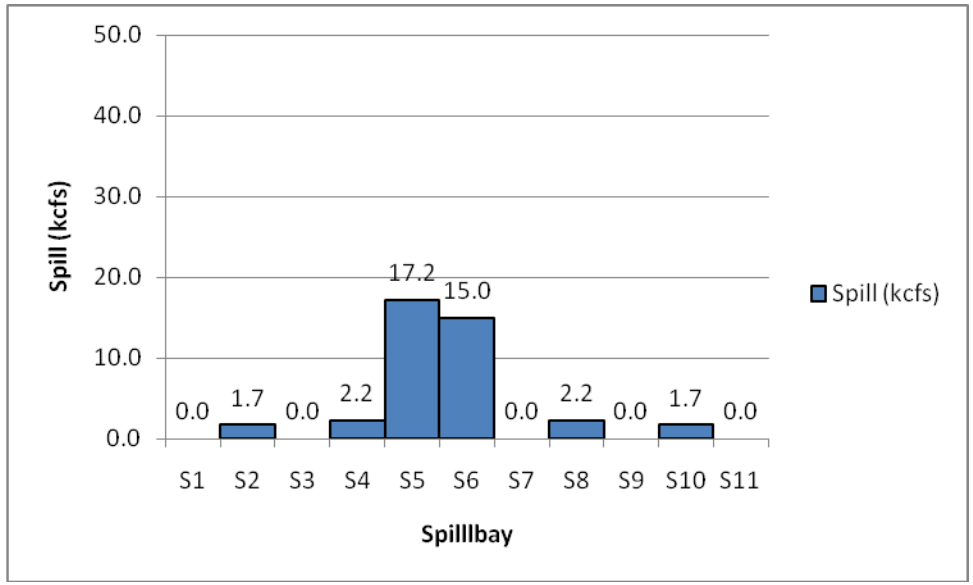

Figure 3. Operational configuration once spill reaches 30 kcfs in S5 and is expected to be above 40 kcfs for more than 8 hours (JBS removed). Shift sufficient spill from S5 to maintain a minimum of 15 kcfs spill at S6. Note that the 15.0 kcfs includes the existing 2.2 kcfs JBS flow.

III. Short duration decreases in Forced Spill (<53.0 kcfs) and JBS Barriers in *S6* Removed

If after removal of JBS barrier in *S6*, total spill drops below 53 kcfs (between 10-53 kcfs), and is expected to stay in this range for only a short period (4 days or less), direct spill through *S6* up to 15 kcfs (total spill < 22.9 kcfs). When total spill exceeds 22.8 kcfs, direct the remainder of spill through *S5*.

IV. Forced Spill (> 53.0 kcfs) and JBS Barriers in *S6* Removed

After *S5* reaches 43.0 kcfs, additional spill should be allocated to *S6* (*S6* is already spilling at least 15.0 kcfs need to fully engage the submerged spillway lip below the ogee). As flow increases, spill should continually increase through *S6* until paired with *S5* (e.g., 43.0 kcfs through *S5* and 26.0 kcfs through *S6*) (Figure 4). Eventually, *S6* will reach 43.0 kcfs (93.8 kcfs, **Figure** 4).

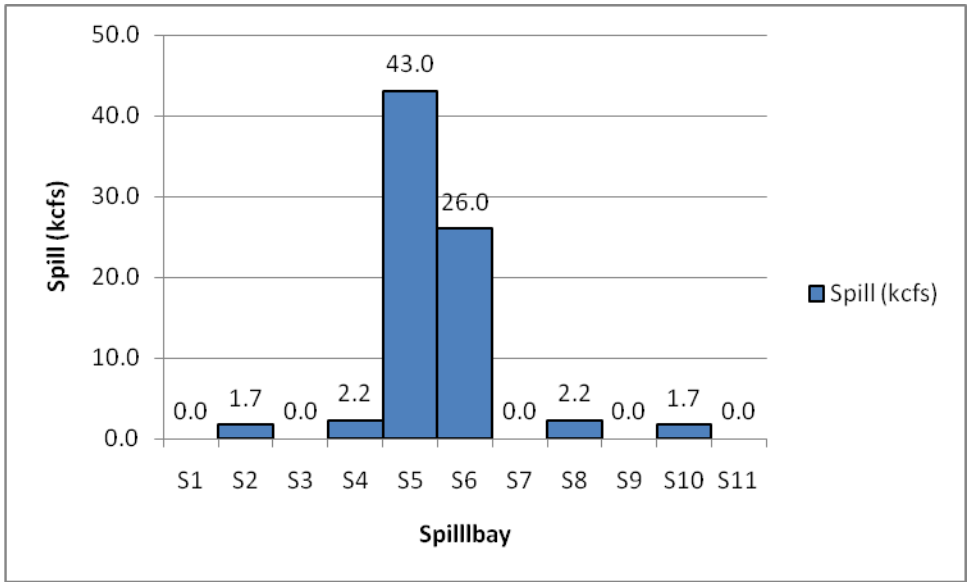

Figure 4. Operational configuration under forced spill > 53.0 kcfs (including JBS flow, with removal of JBS barriers in *S6*). In this instance spill has reached the 43.0 kcfs maximum in S5 and additional spill is being allocated to S6 (26.0 kcfs).

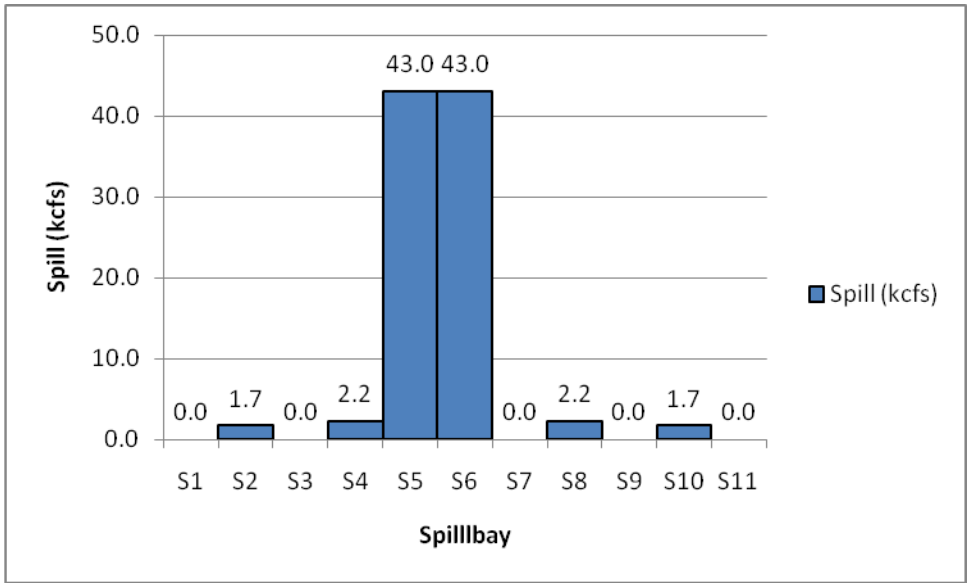

Figure 5. Operational configuration under forced spill > 53.0 kcfs (including JBS). In this instance (93.8 kcfs of spill), S6 has been fully allocated and 43.0 kcfs is now allocated through both *S5* and *S6*.

V. Forced Spill (> 93.8 kcfs) and JBS Barriers in *S6* Removed

After both *S5* and *S6* reach 43.0 kcfs, spill can also be allocated to *S7*. Since a minimum of 15.0 kcfs is needed to fully engage the submerged spillway lip below the ogee, spill through *S6* should be relocated to *S7* (Figure 6). As flow increases, spill can be continually increased through *S7* until paired with *S6* (30.0 kcfs through S6 and S7, while S5 continues at 43.0 kcfs). After this point, both *S6* and *S7* can be increased until all three spillbays have reached 43.0 kcfs (136.8 kcfs of spill, Figure 7).

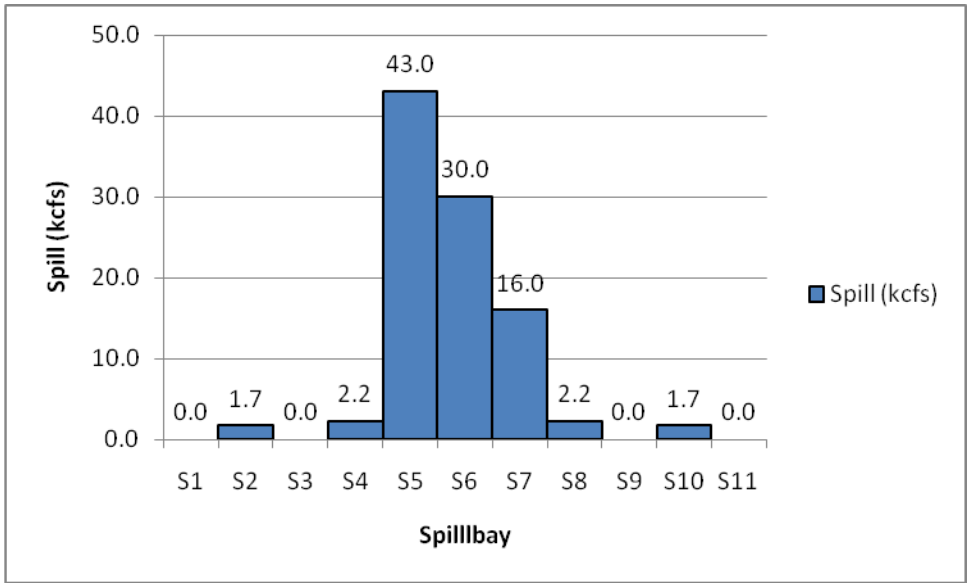

Figure 6. Operational configuration under forced spill > 96.0 kcfs. In this instance (96.8 kcfs of total spill), spill from *S6* is relocated to *S7* to maintain concentrated flow with *S5*. A spill of 16.0 kcfs is maintained in *S7* as to engage the submerged spillway lip.

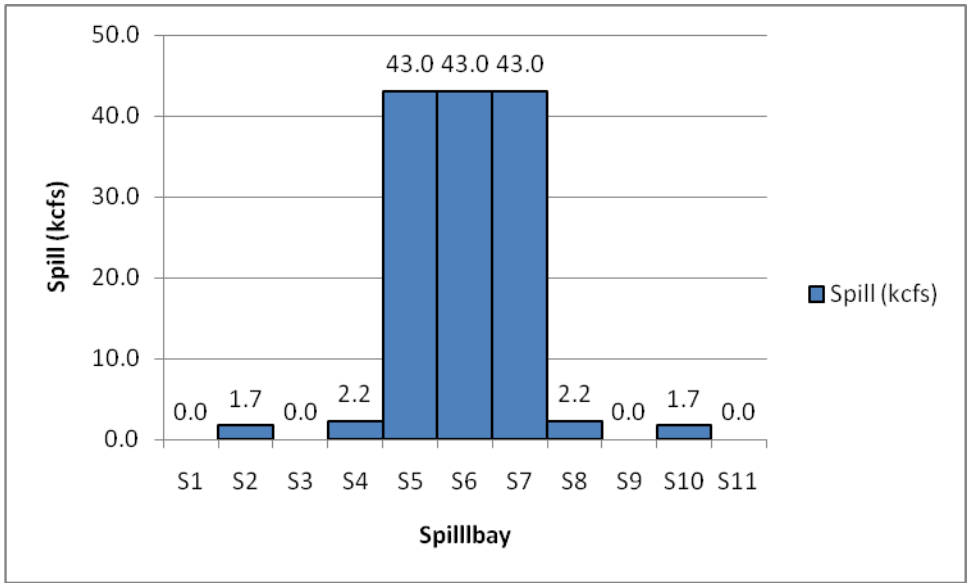

Figure 7. Operational configuration under forced spill > 96.0 kcfs (with removal of JBS barriers in *S6*). In this instance (136.8 kcfs of total spill), 43.0 kcfs is allocated through *S5*, *S6*, and *S7*.

VI. Forced Spill (> 136.8 kcfs)

Forced spill exceeding 136.8 kcfs rarely occurs (less than 0.5%). If these conditions arise and total river flow exceeds 246.0 kcfs, then 7Q-10 conditions are occurring and Wells Dam is exempt from the TDG standards. Under this situation, Project Operators may perform any combination of operations to ensure that flood waters are safely passed. Also, at this point, JBS barriers will likely be removed allowing additional flexibility to spill up to 43 kcfs each through *S2*, *S4*, *S6*, and *S8*. Project Operators may pass spill through *S3* in a similar fashion to operations mentioned above (starting at a minimum of 15.0 kcfs to ensure that spillway lips are engaged).

VII. JBS Re-Installment Criteria

Once spills of less than 40.0 kcfs are predicted for at least four days, JBS barriers should be re-installed in *S6*.

II. Spill Lookup Table

Operation	Total Spill	Spillbay Number										
		S1 -	*S2* JBS	***S3***	*S4* JBS	***S5***	*S6* JBS	***S7***	*S8* JBS	***S9***	*S10* JBS	*S11* -
I. No Forced Spill	10.0	0.0	1.7	0.0	2.2	0.0	2.2	0.0	2.2	0.0	1.7	0.0
II. Spill (≤ 53.0 kcfs), min.	11.0	0.0	1.7	0.0	2.2	1.0	2.2	0.0	2.2	0.0	1.7	0.0
II. Spill (≤ 53.0 kcfs), max.	53.0	0.0	1.7	0.0	2.2	43.0	2.2	0.0	2.2	0.0	1.7	0.0
III. Spill (> 53.0 kcfs, *S6* JBS out), min.	54.0	0.0	1.7	0.0	2.2	31.2	15.0	0.0	2.2	0.0	1.7	0.0
III. Spill (> 53.0 kcfs, *S6* JBS out), max.	93.8	0.0	1.7	0.0	2.2	43.0	43.0	0.0	2.2	0.0	1.7	0.0
IV. Spill (> 93.8 kcfs, *S6* JBS out), min.	96.8	0.0	1.7	0.0	2.2	43.0	38.8	15.0	2.2	0.0	1.7	0.0
IV. Spill (> 93.8 kcfs, *S6* JBS out), max.	136.8	0.0	1.7	0.0	2.2	43.0	43.0	43.0	2.2	0.0	1.7	0.0
V. Spill (>137.0 kcfs), min.	137.0	0.0	1.7	15.0	2.2	43.0	43.0	28.2	2.2	0.0	1.7	0.0
V. Total Flow (>246 kcfs), max.	-	*Operators may adjust as needed.* *TDG exemption in place when total river flows exceed 246.0 kcfs.*										

Notes: (1) No spill through *S1* and *S11* as to minimize interference with fish ladders. (2) Even-numbered spillbays are designated as the Juvenile Bypass System (JBS). (3) Primary spillbays for forced spill are *S5*, *S6*, *S7*, *S3*, and *S9* (in that order).

Appendix B – Pre-filing consultation record for the 2013 Gas Abatement Plan

Andrew Gingerich

From: Kristi Geris <kgeris@anchorqea.com>
Sent: Friday, December 28, 2012 5:05 PM
To: Andrew Gingerich; Bao Le; Beau Patterson; Bill Towey (bill.towey@colvilletribes.com); Bob Jateff (jatefrjj@dfw.wa.gov); Bob Rose; 'Brad James'; 'Bret Nine'; 'Chad Jackson'; Charlie McKinney (cmck461@ecy.wa.gov); Chas Kyger; 'Donella Miller'; Jason McLellan; Jeff Korth (korthjwk@dfw.wa.gov); 'Jessi Gonzales'; Joe Peone (joe.peone@colvilletribes.com); kirk.truscott@colvilletribes.com; Mary Mayo; Mike Schiewe; Molly Hallock (hallomh@dfw.wa.gov); Pat Irle (pirl461@ecy.wa.gov); 'Patrick Luke'; Patrick Verhey (Patrick.Verhey@dfw.wa.gov); Paul Ward (ward@yakama.com); Shane Bickford; 'Steve Lewis'; 'Steve Parker (parker@yakama.com)'; Steve Rainey
Subject: FW: 2013 Wells Dam GAP 12-28-2012 clean
Attachments: 2012_12_28 Douglas - 2013 Douglas - Bypass Operating Plan Memo - draft 12-26-12.pdf; 2012_12_28 Douglas - 2013 Wells Dam GAP 12-28-2012 clean.doc

Hi Aquatic SWG: please see the email below from Andrew and the attached proposed 2013 Wells Dam Gas Abatement Plan and 2013 Bypass Operating Plan.

Thanks!
Kristi ☺

Kristi Geris

ANCHOR QEA, LLC
kgeris@anchorqea.com

From: Andrew Gingerich [mailto:andrewg@dcpud.org]
Sent: Friday, December 28, 2012 4:07 PM
To: Kristi Geris
Cc: Mike Schiewe; Shane Bickford; Chas Kyger; Tom Kahler
Subject: 2013 Wells Dam GAP 12-28-2012 clean

Kristi,

Attached is the proposed *2013 Wells Dam Gas Abatement Plan*. For some years now Douglas PUD has worked in collaboration with the Department of Ecology to obtain an adjustment to the 110% TDG water quality criteria during the fish spill season. The adjustment allows for higher TDG values in order to provide fish with higher bypass efficiency via spill routes past virtually all main-stem Columbia and Snake River Projects. In summary, although this may appear to be a new process to some, we go through this process every year in preparation for the upcoming spill season.

This year we will, as always Douglas PUD will work with the WA Dept. of Ecology to obtain the TDG standard adjustment for out-migrating smolts, but also we are sharing it with the ASWG and the HCP Coordinating Committee to provide an opportunity to comment. The *Gas Abatement Plan* fits within the context *Bypass Operating Plan* that is prepared with the HCP-CC every year as well. As such, I have also attached the HCP bypass plan for 2013 to provide additional context related to Wells Dam fish spill and project operations in the spring/summer.

Aquatic SWG members will find that we have put these documents on the agenda for the Jan 9th ASWG meeting, but of course if people have specific questions prior to the meeting I would encourage them to ask away. In the meantime

please distribute this message and the document to the ASWG and the HCP CC. As is typical with our vetting process comments are welcome.

Thanks!
Andrew
509-881-2323

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Andrew Gingerich

From: Kristi Geris <kgeris@anchorqea.com>
Sent: Friday, December 28, 2012 5:09 PM
To: Andrew Gingerich; Bill Tweit (tweitwmt@dfw.wa.gov); Bob Rose (rosb@yakamafish-nsn.gov); 'Bryan Nordlund (bryan.nordlund@noaa.gov)'; Jerry Marco (Jerry.Marco@colvilletribes.com); Jim Craig (jim_l_craig@fws.gov); Mike Schiewe; Rick Klinge; Steve Hemstrom (steven.hemstrom@chelanpud.org); Steve Parker (pars@yakamafish-nsn.gov); 'Teresa Scott (teresa.scott@dfw.wa.gov)'; Tom Kahler
Cc: beichdvb@dfw.wa.gov; Gallaher, Becky; Joe Miller (Joseph.Miller@chelanpud.org); 'Josh Murauskas (josh.murauskas@chelanpud.org)'; Keith Truscott; Lance Keller; Lee Carlson (carl@yakamafish-nsn.gov); Shane Bickford
Subject: FW: 2013 Wells Dam GAP 12-28-2012 clean
Attachments: 2012_12_28 Douglas - 2013 Wells Dam GAP 12-28-2012 clean.doc

Hi HCP-CC: please see the email below from Andrew and the attached proposed 2013 Wells Dam Gas Abatement Plan.

Thanks!
Kristi ☺

Kristi Geris

ANCHOR QEA, LLC
kgeris@anchorqea.com

From: Andrew Gingerich [mailto:andrewg@dcpud.org]
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This year we will, as always Douglas PUD will work with the WA Dept. of Ecology to obtain the TDG standard adjustment for out-migrating smolts, but also we are sharing it with the ASWG and the HCP Coordinating Committee to provide an opportunity to comment. The *Gas Abatement Plan* fits within the context *Bypass Operating Plan* that is prepared with the HCP-CC every year as well. *Note: the Bypass Operating Plan was distributed to the Coordinating Committees on Wednesday, December 26, 2012 –kristi ☺

Aquatic SWG members will find that we have put these documents on the agenda for the Jan 9th ASWG meeting, but of course if people have specific questions prior to the meeting I would encourage them to ask away. In the meantime please distribute this message and the document to the ASWG and the HCP CC. As is typical with our vetting process comments are welcome.

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Andrew Gingerich

From: Irle, Pat (ECY) <PIRL461@ECY.WA.GOV>
Sent: Wednesday, January 16, 2013 3:00 PM
To: Andrew Gingerich
Cc: Le, Bao (Bao.Le@hdrinc.com); McKinney, Charlie (ECY)
Subject: RE: 2013 GAP

Follow Up Flag: Follow up
Flag Status: Completed

Andrew:

Two small fixes, and then it looks good for approval:

In Section 4.2, Quality Assurance, the broad purpose of a well-designed QAPP is to attain data of the type and quality needed to make future decisions; in this case, the data will be used to evaluate the need for changes to project operation and construction related to compliance with TDG and temperature standards.

In Section 4.3, Reporting, the annual report should include TDG levels outside the spill season (as well as during the spill season), per the 401 Certification Section 6.7 2) c) iii), third sentence.

Please give me a call or email if you have any questions.

Sincerely,
Pat Irle
WA Dept of Ecology
Hydropower Projects Manager

From: Andrew Gingerich [mailto:andrewg@dcpud.org]
Sent: Thursday, January 10, 2013 11:36 AM
To: Irle, Pat (ECY)
Subject: RE: 2013 GAP

No apologies necessary. I had this on my to do list for today.

In the future I will try and send this to Ecology first…before sending it to the work group as we discussed yesterday. I know you wanted to see the QAPP too. I am busily working on it for the remainder of this week and likely next week as well.

Thanks Pat.
Andrew

From: Irle, Pat (ECY) [mailto:PIRL461@ECY.WA.GOV]
Sent: Thursday, January 10, 2013 10:49 AM
To: Andrew Gingerich
Subject: 2013 GAP

Hi, Andrew -

I think you said yesterday that you had already sent out a copy of the 2013 GAP? I know I've seen a copy of the 2012 GAP report, but I don't remember this year's GAP (plan). Could you send it again?

My apologies…

Pat Irle, MA, LG
Hydropower Projects Manager
Department of Ecology
Washington State
(509) 454-7864

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Andrew Gingerich

From: Shane Bickford
Sent: Monday, January 28, 2013 11:14 AM
To: Mary Mayo; Andrew Gingerich
Subject: FW: 2013 Wells Dam operations

Follow Up Flag: Follow up
Flag Status: Flagged

Mary and Andrew,

NMFS approval of the BOP and GAP can be found in the e-mail below. Please add this to the agency approval correspondence.

Thanks,

Shane

From: Bryan Nordlund - NOAA Federal [mailto:bryan.nordlund@noaa.gov]
Sent: Monday, January 28, 2013 10:23 AM
To: Shane Bickford
Cc: Tom Kahler
Subject: 2013 Wells Dam operations

Shane - After distribution of draft documents, at the December 2012 meeting of the Wells HCP Coordinating Committee, Douglas PUD presented the Total Dissolved Gas Abatement Plan and the 2013 Juvenile Fish Bypass Operating Plan for Wells Dam, followed by Committee discussion.

I have completed my review of these plans and find them consistent with NMFS expectations for Wells Dam operations in 2013. As such, please consider this email to construe NMFS approval of these plans.

Bryan Nordlund

--
Bryan Nordlund, P.E.
360-534-9338
National Marine Fisheries Service
510 Desmond Drive, Suite 103
Lacey, WA 98503

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United States Department of the Interior
Fish and Wildlife Service
Mid-Columbia River Fishery Resource Office
7501 Icicle Road
Leavenworth, WA 98826
Phone: (509) 548-7573
Fax: (509) 548-5743

January 28, 2013

Shane Bickford
Natural Resources Supervisor
Public Utility District No. 1 of Douglas County
1151 Valley Mall Parkway
East Wenatchee, Washington 98802-4497

Dear Mr. Bickford,

In December 2012 Douglas PUD submitted to the HCP Coordinating Committees coordinated plans for juvenile fish bypass operations and total dissolved gas abatement at the Wells Hydroelectric Project in 2013. I, as the U.S. Fish and Wildlife Service representative, reviewed those plans and along with the other agency and tribal Coordinating Committee representatives approved those plans. Specifically, the plans approved were: *Total Dissolved Gas Abatement Plan*, submitted for Coordinating Committee review on 28 December 2012, and the *Wells Dam 2013 Juvenile Fish Bypass Operating Plan* submitted for Coordinating Committee review on 26 December 2012.

I hope this letter assists Douglas PUD with their FERC submission. Feel free to contact me if you need anything further.

Sincerely,

Jim L Craig
Project Leader

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Andrew Gingerich

From: Andrew Gingerich
Sent: Friday, February 01, 2013 2:15 PM
To: 'Irle, Pat (ECY)'
Cc: McKinney, Charlie (ECY); Shane Bickford; Tom Kahler; Mary Mayo
Subject: RE: 2013 GAP
Attachments: 2013 Wells Dam GAP and BOP final 02-01-13.pdf

Pat, attached is the final Gas Abatement Plan for 2013. Included in the document are Ecology's suggested revisions and comments. No comments were received from the Aquatic Settlement Workgroup aside from those provided by Ecology. The HCP Coordinating Committee did provide two small editorial changes ('JSB' was changed to 'JBS' in appendix 1 and 'complaint' was changed to 'compliance' earlier in the document.) Both your comments and the HCP's have been incorporated in the final version attached.

As we are required by the FERC, we would like to file this document along with the bypass operating plan (also attached) by Feb 28th.

If acceptable would you please return to me a letter from Ecology that we can file with the submission to the FERC. The letter would have the following similar statements:

1. Approval of a fish passage exemption for the 2013 spill season
2. Acknowledgement of the integration of the Bypass Operating Plan and the GAP towards meeting measure 6.7-2(d) in the 401 certification "*Within one year of issuance of the new license, Douglas PUD shall coordinate the annual HCP project fish bypass spill operations plan with the GAP, using best available information to minimize the production of TDG during periods of spill. In consultation with the Wells HCP Coordinating Committee and ASWG, the spill operations plan will be reviewed and updates, as necessary.*" Recall that this year Tom Kahler and I (POC at DCPUD for the Bypass operating Plan) drafted these two documents in concert. Both documents were sent to the HCP and ASWG on Dec 28th, an approach designed to meet this requirement.

Let me know if the above sounds appropriate.
Thanks for the ongoing collaboration. As always give me a call if you'd like to discuss any of the info provided 509-881-2323.

Andrew

From: Irle, Pat (ECY) [mailto:PIRL461@ECY.WA.GOV]
Sent: Wednesday, January 16, 2013 3:00 PM
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Cc: Le, Bao (Bao.Le@hdrinc.com); McKinney, Charlie (ECY)
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My apologies…

Pat Irle, MA, LG
Hydropower Projects Manager
Department of Ecology
Washington State
(509) 454-7864

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Revised Meeting Minutes

Aquatic Settlement Work Group

To: Aquatic SWG Parties **Date**: February 4, 2013

From: Michael Schiewe, Chair (Anchor QEA)

Re: Revised Minutes of the January 9, 2013 Aquatic SWG Meeting

The January Aquatic Settlement Work Group (SWG) met in person at the Wells Dam Hydroelectric Project on Wednesday, January 9, 2013, from 10:00 am to 4:00 pm. Attendees are listed in Attachment A of these meeting minutes.

I. Summary of Action Items

1. Steve Lewis will provide revisions to the draft December 13, 2012 Aquatic SWG conference call minutes to Kristi Geris for incorporation prior to finalizing and distributing to the Aquatic SWG (Item VI-2).
2. Chas Kyger will provide photos of the Wells Dam count window modifications to Kristi Geris for distribution to the Aquatic SWG (Item VI-3).
3. Andrew Gingerich will provide Douglas PUD's draft 2012 Gas Abatement Plan (GAP) Report to Kristi Geris for distribution to the Aquatic SWG for review prior to filing the report with the Federal Energy Regulatory Commission (FERC) in February 2013 (Item VI-4).
4. The Aquatic SWG will submit comments on Douglas PUD's draft 2013 Action Plan to Kristi Geris no later than Friday, January 18, 2013 (Item VI-4).
5. Andrew Gingerich will provide contact information for the new Aquatic SWG U.S. Bureau of Land Management (BLM) Technical and Policy Representative, Chris Sheridan, to Kristi Geris for distribution to the Aquatic SWG (Item VI-8).

II. Summary of Decisions

1. There were no Statements of Agreement (SOAs) approved at today's meeting.

III. Agreements

1. There were no agreements discussed at today's meeting.

IV. Review Items

1. The Douglas PUD draft 2013 Action Plan is available for review with comments due to Kristi Geris by Friday, January 18, 2013.
2. Kristi Geris sent an email to the Aquatic SWG on January 11, 2013, notifying them that the Douglas PUD 2012 GAP Report is available for a 30-day review period, with comments due to Andrew Gingerich by Monday, February 11, 2013.

V. Reports Finalized

1. No reports have been finalized since the last Aquatic SWG meeting.

VI. Summary of Discussions

1. **Wells Dam Hydroelectric Project Tour – Part I: Power Production** (Brian Hicks, Andrew Gingerich, Chas Kyger): Brian Hicks, the Wells Dam Hydroelectric Project Superintendent, Andrew Gingerich, and Chas Kyger led a tour of the power production facilities at the Wells Dam Hydroelectric Project. Hicks provided an overview of power production at the dam while touring several areas of the project, including the Operations Center.

2. **Welcome, Agenda Review, and Meeting Minutes Review** (Mike Schiewe): Mike Schiewe welcomed the Aquatic SWG members (attendees are listed in Attachment A) and introduced Jessi Gonzales, the Aquatic SWG Policy Representative for U.S. Fish and Wildlife Service (USFWS). Gonzales also introduced Doug Tangen, a new office assistant at USFWS. Tangen has a background in Environmental Sciences and came to USFWS from the U.S. Navy. Schiewe welcomed them both and reviewed the agenda. He asked for additional agenda items, and the following revisions were made to the agenda:

    - Andrew Gingerich requested two additions: 1) a brief announcement regarding the new Aquatic SWG Technical and Policy Representative for BLM; and 2) a discussion of the Pacific Lamprey count window modifications and head differential license amendment.

    Kristi Geris reported that one additional revision was received on the draft December 13, 2012 conference call minutes from Patrick Verhey on January 2, 2013. Verhey requested a modification regarding Washington Department of Fish and Wildlife's (WDFW's) review of the new Wells Project FERC license. Steve Lewis requested a revision to the discussion regarding the installation of infrared (IR) cameras for improved lamprey enumeration. He said that he would like it noted that the Aquatic SWG did not conclude whether to use IR cameras in the future; and he added that he would like to see what angles the existing cameras are capable of viewing. Gingerich said that he had not intended to give the impression that the IR cameras are no longer being considered. He said that the Aquatic SWG did collectively decide to postpone

installation of the IR cameras to first investigate if fish can effectively be enumerated without installation of the IR cameras; Gingerich added that this question will be investigated this year. Lewis said that he will provide revisions to the draft December 13, 2012 Aquatic SWG conference call minutes to Geris for incorporation prior to finalizing and distributing these minutes to the Aquatic SWG.

3. **Pacific Lamprey Count Window Modifications and Head Differential License Amendment** (Chas Kyger): Chas Kyger said that the modifications to the count windows have been installed, and that the Aquatic SWG will have an opportunity to view the improvements during the tour of the Wells Dam east and west fish ladders. Kyger said that he will also take photos of the count window modifications and provide them to Kristi Geris for distribution to the Aquatic SWG.

   Andrew Gingerich reminded the Aquatic SWG members that the new FERC license requires a license amendment for all permanent modifications to project facilities. He said that Douglas PUD is in the process of discussing the package of information to prepare for FERC that describes and shows that the Aquatic SWG has thoroughly reviewed and discussed the lamprey study and the related operational and structural modifications. Gingerich said that Douglas PUD should have a package ready for discussion for the Aquatic SWG February 13, 2013 meeting. Bao Le asked if Douglas PUD planned to state that the proposed head differential changes will occur each year, or just in 2013. Gingerich said that FERC is requesting a license amendment for these changes, so they must be viewing the changes as potentially permanent. He added that if FERC determines that the changes are a temporary measure, then an amendment will not be needed.

   Kyger said that Douglas PUD is discussing logistics with the Yakama Nation (YN) to obtain adult lamprey from Bonneville Dam, and he also noted that Douglas PUD is coordinating with Grant PUD to obtain fish from Priest Rapids Dam, which Kyger said in total, covers all of the 125 study fish needed for the 2013 Pacific Lamprey radio telemetry study. Kyger said that arrangements should be finalized by spring. Steve Lewis asked if the U.S. Army Corps of Engineers (who operates Bonneville Dam) is requesting federal approval for securing the lamprey, and Kyger said that Douglas PUD is investigating whether that is a requirement. Kyger said that the YN would collect and transport the fish from Bonneville Dam to Wells Dam for tagging.

4. **2013 Aquatic SWG Action Plan** (Andrew Gingerich): Andrew Gingerich said that the Douglas PUD 2013 Aquatic SWG Action Plan was distributed to the Aquatic SWG by Kristi Geris on January 2, 2013. A PowerPoint presentation of the 2013 Aquatic SWG Action Plan (Attachment B) was also distributed to the Aquatic SWG on January 9, 2013.

Gingerich reviewed Aquatic SWG actions planned for 2013, by management plan. Actions included those associated to the Aquatic SWG Annual Report and webpage development, white sturgeon, bull trout, water quality, Pacific Lamprey, aquatic nuisance species (ANS), and resident fish. He reviewed planned activities and key dates associated with each respective management plan including planned studies, reports, and monitoring; regional coordination; and deadlines to FERC. Gingerich said that all 2013 activities will be incorporated into an Aquatic Settlement Agreement Annual Report and submitted to FERC. He noted that 2013 action dates were structured to comply with FERC deadlines.

Gingerich said that the new FERC license requires Douglas PUD to develop a webpage to post study plans, meeting minutes, and other relevant Aquatic SWG material. He said that the webpage will also include links to water quality data. Mike Schiewe asked if the webpage would be similar to a SharePoint site, and Gingerich replied that he was not yet certain what exactly the webpage will entail, but that an internal meeting is scheduled for this week to discuss these details. He said that Douglas PUD has a relicensing webpage, and that this new webpage may be similar to that. He also added that the Douglas PUD Information Technology (IT) staff is interested in including SharePoint as one of the options.

Steve Lewis asked about the status of Colville Confederated Tribe's (CCT's) and YN's white sturgeon professional services contract development, and Gingerich said that they both are near finalization. Specifically, the CCT contract process is complete and Douglas PUD is waiting on insurance information from the YN to finalize that contract. Lewis asked about the areas of collection, and Gingerich indicated that they have not yet been finalized, and that before they are, he would like the Aquatic SWG to review and reach agreement on options.

Gingerich noted that for bull trout monitoring in 2013, Douglas PUD plans to employ a "greater than 10 per year" rule that would require additional monitoring activities for sub-adults at Wells Dam. Bao Le explained that if more than 10 bull trout are detected in a one-year period, additional protective measures will be triggered.

Gingerich said that there are several water quality reports and plans slated for 2013. He noted that Douglas PUD has already received and incorporated comments on the 2012 Gas Abatement Plan (GAP) Report from the Washington Department of Ecology (Pat Irle); however, he would like to also provide the Aquatic SWG an opportunity to provide comments prior to filing the report with FERC in late February 2013. He added that he will provide the draft report to Geris for distribution to the Aquatic SWG for review prior to filing the report with the FERC. Gingerich said that the 2013 GAP Report and 2013 Bypass Operating Memorandum were distributed to the Aquatic SWG on December 28, 2012; and he noted that in 2013, Douglas PUD will now look to meet the 110 percent

total dissolved gas (TDG) standard year-round, and not just monitor compliance during the spill season, which has different TDG guidelines. Lewis asked what the target species are for the TDG compliance and Gingerich said that incidental sampling will be performed on all juvenile salmonid species.

Gingerich also said that the Annual Water Temperature Report will not be available until 2014 because 2013 will be the year of infrastructure installation and the first year of data collection. He went on to say that reporting will increase with the new FERC license, which means there will be a lot more for the Aquatic SWG to review. Le noted that the Section 401 deadline for a Spill Prevention, Control and Countermeasures Plan (SPCC) is not until March 2014, as opposed to the September 2013 FERC deadline. He asked if Douglas PUD will be able to forego the FERC deadline due to the existing deadline. Pat Irle said that she could not speak to what FERC will require, but that Ecology will want to review the SPCC if it is updated in September 2013.

Gingerich clarified that "STT-WQ" means "Sovereign Technical Team – Water Quality," and that this team is associated with the Columbia River Treaty. He said that participating in forums with the STT-WQ will help inform decisions in addressing the treaty in the future.

Gingerich noted that several Pacific lamprey actions are tentative and will be carried forward on an "as needed" basis (see third grouping of bullets in Attachment B). Shane Bickford added that, with the exception of the Lamprey Entrance Efficiency Plan, Douglas PUD has five years to complete these tentative items.

Gingerich said, in summary, that Douglas PUD has a lot planned for 2013 and he asked that the Aquatic SWG submit comments on Douglas PUD's draft 2013 Action Plan to Geris no later than Friday, January 18, 2013. He added that he would like to request approval on the draft 2013 Action Plan at the Aquatic SWG February 13, 2013 meeting.

5. **FERC License** (Andrew Gingerich and Shane Bickford): Shane Bickford reviewed that in early December 2012, Douglas PUD submitted a request for rehearing. Bickford said that Douglas PUD had raised three overarching issues: 1) the new license term; 2) how encroachment of Wells Dam on Chief Joseph Dam is calculated; and 3) the inclusion of Article 204 to address Canadian Storage. Bickford explained that the proposed new license term of 40 years is based on the incorrect assumption that the Wells HCP would expire on the same date as the HCPs for the Rock Island and Rocky Reach Project in 2052. Bickford clarified that the Wells HCP does not expire until 2054. FERC's intent is to synchronize the license terms for all of the mid-Columbia River dams; however, as noted by many state, federal and tribal stakeholders, a coordinated relicensing is not appealing due to work load. He also noted that the Rock Island Dam FERC license

expires in 2028, and therefore could not be synchronized with the FERC licenses for Rocky Reach and Priest Rapids.

Bickford said that Douglas PUD believes that the second issue was an error within the language in the license, in that the U.S. Corp Army of Engineers, Bonneville Power Administration, and Douglas PUD have all agreed to the terms of future encroachment calculations and payments, and that FERC simply incorrectly carried those terms into the license. He added that Douglas PUD is seeking to overturn the third issue as it is inconsistent with the license articles for the other PUD dams and represents an outdated characterization of the Columbia River Treaty. Bickford also added that there were other minor issues that Douglas PUD mentioned in the request for rehearing, including the correction of the Wells Project boundary and peak generating capacity.

Jessi Gonzales asked if the Canadian Storage language was about to change again, and Bickford replied that the Canadian Storage that is referred to in the request for rehearing will not change (it is already built). However, the terms of operation between the U.S. and Canada is expected to change (i.e., the Columbia River Treaty) and Douglas PUD would like to have the ability to change with it rather than be stuck in the past as the new license article 204 requires. Bickford said that it may take up to 7 to 8 months before Douglas PUD hears back from FERC, and he noted that the group that handles the rehearings is separate from the licensing group.

Andrew Gingerich said that Douglas PUD is now working to develop a FERC compliance matrix that includes all of the complex requirements of the new license including the requirements mandated within the CWA Section 401 water quality certification, the ESA consultations for bull trout, steelhead and spring Chinook, the Federal Power Act section 18 fishway prescriptions and the requirements imposed by FERC.

6. **Water Quality Management Plan/401 Certification Priorities** (Andrew Gingerich): This agenda item was covered in the draft 2013 Aquatic SWG Action Plan Update discussion.

7. **White Sturgeon** (Andrew Gingerich): This agenda item was covered in the draft 2013 Aquatic SWG Action Plan Update discussion.

8. **New Aquatic SWG U.S. Bureau of Land Management Technical and Policy Representative** (Andrew Gingerich): Andrew Gingerich announced that Chris Sheridan is now the new Aquatic SWG Policy and Technical Representative for BLM. Gingerich said that he will send Sheridan's contact information to Kristi Geris for distribution to the Aquatic SWG.

9. **Wells Dam Hydroelectric Project Tour – Part II: East and West Fish ladders** (Shane Bickford, Andrew Gingerich, Tom Kahler and Chas Kyger): Shane Bickford, Andrew

Gingerich, Tom Kahler and Chas Kyger lead a tour of the east and west fish ladders at the Wells Dam Hydroelectric Project. Sites visited included the east and west fish ladders, the fish trap, the count station, the interpretive center, and the fish hatchery facilities. The 2012/2013 winter annual maintenance was underway; therefore, the east ladder was completely dewatered, which permitted access to view the recently installed count window modifications to improve lamprey enumeration. While discussing the modifications, Bickford and Kyger noted that in 2013, Douglas PUD also plans to install radio telemetry antennas in both Wells Dam fishways. They said that those arrays will help determine if the new wall diffuser screening and ramp perform as expected (i.e., if Pacific lamprey entry into the counting station is improved or if it is delayed, etc.).

VII. Next Meetings

1. Upcoming meetings: ***February 13, 2013 (conference call); March 13, 2013 (conference call); and April 10, 2013 (conference call)***.

List of Attachments

Attachment A – List of Attendees

Attachment B – Douglas PUD 2013 Aquatic SWG Action Plan Presentation

Attachment A
List of Attendees

Name	Role	Organization
Mike Schiewe	SWG Chair	Anchor QEA, LLC
Kristi Geris	Administration/Technical Support	Anchor QEA, LLC
Andrew Gingerich	SWG Technical Representative	Douglas PUD
Shane Bickford	SWG Policy Representative	Douglas PUD
Tom Kahler	Technical Support	Douglas PUD
Chas Kyger	Technical Support	Douglas PUD
Steve Lewis	SWG Technical Representative	U.S. Fish and Wildlife Service
Jessi Gonzales	SWG Policy Representative	U.S. Fish and Wildlife Service
Doug Tangen	Observer	U.S. Fish and Wildlife Service
Patrick Verhey	SWG Technical Representative	Washington Department of Fish and Wildlife
Pat Irle†	SWG Technical Representative	Washington State Department of Ecology
Bao Le†	Technical Support	HDR Engineering, Inc.

Notes:

† Joined by phone

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Andrew Gingerich

From: Kristi Geris <kgeris@anchorqea.com>
Sent: Friday, February 01, 2013 8:27 AM
To: Andrew Gingerich; Bao Le; Beau Patterson; Bill Towey (bill.towey@colvilletribes.com); Bob Jateff (jatefrjj@dfw.wa.gov); Bob Rose; 'Brad James'; 'Bret Nine'; 'Chad Jackson'; Charlie McKinney (cmck461@ecy.wa.gov); Chas Kyger; Chris Sheridan; 'Donella Miller'; Jason McLellan; Jeff Korth (korthjwk@dfw.wa.gov); 'Jessi Gonzales'; Joe Peone (joe.peone@colvilletribes.com); kirk.truscott@colvilletribes.com; Mary Mayo; Mike Schiewe; Molly Hallock (hallomh@dfw.wa.gov); Pat Irle (pirl461@ecy.wa.gov); 'Patrick Luke'; Patrick Verhey (Patrick.Verhey@dfw.wa.gov); Paul Ward (ward@yakama.com); Shane Bickford; 'Steve Lewis'; 'Steve Parker (parker@yakama.com)'; Steve Rainey
Subject: Aquatic SWG: 2013 Gas Abatement Plan

ASWG members,

Douglas County PUD's 2013 GAP (Gas Abatement Plan) was distributed to the group on Dec 28th, 2012 for comments. This document has be submitted annually to Ecology in order to obtain an adjustment to the 110% TDG standards for the purposes of passing salmonids during the fish spill season. In addition, this year and in subsequent years this plan will be filed with FERC for approval.

The HCP Coordinating Committee, specifically the USFWS, and NMFS reps within the HCP, have provided feedback and approval of the 2013 GAP. The WA department of Ecology (Pat Irle) has provided comments directly to Douglas PUD on the 2013 GAP and comments were received through the Aquatic SWG during the January 2013 work group meeting (refer to meeting minutes). As such, the comment period is closed and Douglas PUD will file the final GAP with Ecology and FERC on, or prior to, the Feb 28th deadline.

Please contact Andrew directly if you have questions about this document (andrewg@dcpud.org 509-881-2323). Thanks all.

Kristi Geris
Scientist

ANCHOR QEA, LLC
kgeris@anchorqea.com
1060 Jadwin Avenue, Suite 275
Richland, WA 99352
T 509.392.4548 x104
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Please consider the environment before printing this email.

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Commissioners:
T. JAMES DAVIS
LYNN M. HEMINGER
RONALD E. SKAGEN

General Manager:
WILLIAM C. DOBBINS

Public Utility District No. 1 of Douglas County

1151 Valley Mall Parkway • East Wenatchee, Washington 98802-4497 • 509/884-7191 • FAX 509/884-0553 • www.douglaspud.org

Ms. Pat Irle
Hydropower Projects Manager
Washington State Department of Ecology
15 West Yakima Avenue, Suite 200
Yakima, WA 98802-3452

February 1, 2013

Subject: **2013 Total Dissolved Gas Abatement Plan – Wells Hydroelectric Project**

Dear Pat:

Pursuant to section 6.7 a) of the Clean Water Act 401 Water Quality Certification (401 Certification) for the Wells Project, please find enclosed for your review and approval a copy of the 2013 Total Dissolved Gas Abatement Plan (GAP). A draft copy of the GAP was provided to the Aquatic Settlement Work Group (Aquatic SWG) and the Habitat Conservation Plan Coordinating Committee (HCP CC) on December 28, 2012. The only comments received on the GAP were provided by Ecology. Ecology's suggested revisions, received on January 16, 2013, have been incorporated into the enclosed version of the GAP. If the enclosed version of the GAP satisfies your requirements, please send us written notification that Douglas PUD's request for a seasonal fish passage exemption to the 110 percent total dissolved gas standard has been approved. Please note that license Article 401 (a) requires Douglas PUD to file the Ecology approved GAP with the Federal Energy Regulatory Commission (FERC) for approval by February 28th.

Pursuant to section 6.7 d) of the 401 Certification, please also find enclosed a copy of the HCP CC approved Juvenile Fish Bypass Operating Plan (BOP) for the Wells Project. A draft copy of the BOP was provided to Ecology and the Aquatic Settlement Work Group (Aquatic SWG) on December 28, 2012. No comments on the BOP were received by the comment deadline. Per the requirements of the Habitat Conservation Plan, the HCP CC approved the BOP on January 22, 2013. License Article 401 (a) requires that the HCP CC approved BOP be filed with the FERC for approval within one year of license issuance.

Section 6.7 d) of the 401 Certification further requires Douglas PUD to coordinate the development and review of the GAP and BOP with both the Aquatic SWG and the HCP CC toward the minimization of total dissolved gas during periods of spill. Douglas PUD submits that the annual GAP and BOP coordination requirements found within the 401 Certification and within Article 401 (a) of the FERC license have been met through the multi-workgroup collaborative review and approval process described above.

If you have any questions or require further information regarding the enclosed plans, please feel free to contact Andrew Gingerich at (509) 881-2323, andrewg@dcpud.org.

Sincerely,

Shane Bickford
Natural Resources Supervisor

Enclosure (1): 2013 Total Dissolved Gas Abatement Plan – Wells Hydroelectric Project
(2): 2013 Juvenile Fish Bypass Operating Plan – Wells Hydroelectric Project

Cc: Mr. Charlie McKinney, Ecology
Mr. Andrew Gingerich, Douglas PUD
Mr. Chas Kyger, Douglas PUD

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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
15 W Yakima Ave, Ste 200 • Yakima, WA 98902-3452 • (509) 575-2490

February 12, 2013

Andrew Gingerich
Douglas County Public Utility District No. 1
1151 Valley Mall Parkway
East Wenatchee, WA 98802

Re: Wells Hydroelectric Project No. 2149
2013 TDG Gas Abatement Plan

Dear Andrew Gingerich:

The Washington State Department of Ecology approves the 2013 Gas Abatement Plan (GAP) for the Wells Hydropower project, submitted in accordance with WAC 173-201A-200(1)(f)(ii)) and the Clean Water Act (CWA) 401 certification Section 6.7(2)(a). Approval of this GAP allows higher TDG levels that occur during spill for downstream fish passage during spring and summer of 2013.

In addition, it appears that the GAP and the Bypass Operating Plan are appropriately coordinated, in accordance with the 401 Certification, Section 6.7(2)(d).

Thank you for the quality of your products. If you have any questions, please feel free to call me at (509) 454-7864.

Sincerely,

Patricia S. Irle
Hydropower Projects Manager

By Certified Mail 7006 0100 0002 8191 2315

Appendix C - 2013 Bypass Operating Plan – Wells Project

Commissioners:
T. JAMES DAVIS
LYNN M. HEMINGER
RONALD E. SKAGEN

General Manager:
WILLIAM C. DOBBINS

Public Utility District No. 1 of Douglas County

1151 Valley Mall Parkway • East Wenatchee, Washington 98802-4497 • 509/884-7191 • FAX 509/884-0553 • www.douglaspud.org

Memorandum

TO: Wells HCP Coordinating Committee

FROM: Tom Kahler, Shane Bickford, Douglas PUD

DATE: December 26, 2012

SUBJECT: Wells Dam 2013 Juvenile Fish Bypass Operating Plan

Anticipated Juvenile Migrants during the 2013 Juvenile Fish Bypass Period

The 2013 spring and summer outmigration of naturally produced juvenile HCP Plan Species at Wells Dam will consist of offspring of adults that spawned above Wells Dam during brood years (BY) 2011 and 2012 (Table 1). The spring migration will include juvenile spring Chinook, coho, sockeye, and steelhead, and summer/fall Chinook sub-yearlings will migrate during both spring and summer bypass operations.

Table 1. Ladder counts at Wells Dam of HCP Plan Species whose progeny are anticipated to migrate through the Wells Project during the 2013 bypass period. Juvenile steelhead migrate predominantly as yearlings from the Okanogan River and as age-2 and age-3 fish from the Methow River; thus, 2009, 2010, and 2011 steelhead adult counts are included (BY 2010, 2011, and 2012, respectively).

Species	Adult Migration Year	Ladder Count	Juvenile Migration
Spring Chinook	2011	8,122	Spring
Summer/Fall Chinook	2012	46,835	Summer
Coho	2011	5,796	Spring
Sockeye	2011	111,508	Spring
Summer Steelhead	2009	25,422	Spring
Summer Steelhead	2010	12,929	Spring
Summer Steelhead	2011	12,069	Spring

Scheduled hatchery releases above Wells Dam in 2013 include yearling spring Chinook from the Methow Fish Hatchery (495,000) and the Winthrop National Fish Hatchery (WNFH; 375,000). The WNFH also will release approximately 300,000 coho. Summer Chinook yearlings will be released from the Carlton (420,000) and Similkameen (620,000) acclimation ponds. Hatchery steelhead scheduled for release above Wells Dam include approximately 150,000 fish to the Methow Basin and 100,000 to the Okanogan Basin from Wells Hatchery, and 114,000 to the Methow Basin from WNFH. In general, the hatchery yearling Chinook, coho and steelhead are

scheduled for release after April 15th with Winthrop coho and Wells steelhead scheduled for release after April 20th. By mid-May, all of the yearling Chinook and coho will have been released. The steelhead releases have historically continued into late May.

2013 Juvenile Fish Bypass Operations

Operation of the bypass system throughout the 2013 season will follow the criteria contained within the Wells Dam Juvenile Dam Passage Survival Plan (Wells Juvenile Bypass Plan) found in Section 4.3 of the Wells HCP. One of the main goals of the Wells Juvenile Bypass Plan is to provide bypass operations for at least 95% of both the spring and summer migration of juvenile plan species.

From 2004 through 2011, the timing of the implementation of bypass operations was based upon an analysis of 21 years of hydroacoustic and 14 years of species composition information collected on juvenile run patterns at Wells Dam. From the data available to the Wells HCP Coordinating Committee in February 2004, they agreed that initiation of the Wells bypass system on April 12th and termination on August 26th would conservatively provide bypass operations for more than 95% of both the spring and summer migrations of juvenile Plan Species.

In 2011, Columbia Basin Research performed an analysis using seven years of passage data obtained from daily sampling at the Juvenile Sampling Facility of the Rocky Reach Juvenile Fish Bypass System to more accurately estimate the contemporary percentage of the migration of spring and summer migrants that passed during bypass operations at Wells Dam. From that analysis, the Wells HCP Coordinating Committee adjusted the starting and ending dates for bypass operations at Wells Dam, moving the starting date three days earlier to April 9 to cover early-migrating natural origin spring Chinook, and moving the ending date seven days earlier to August 19 to more accurately reflect the contemporary passage timing of the sub-yearling Chinook outmigration. Thus, for 2012, bypass operations at Wells Dam commenced at 00:00 on April 9 and ended at 24:00 hours on August 19. For accounting purposes, the end of the 2012 spring bypass season was June 13th at 24:00 hours and the beginning of the summer bypass season was June 14th at 00:00 hours.

Upon completion of the 2012 bypass season, Columbia Basin Research updated the original analysis that supported the decision by the Wells Coordinating Committee to adjust the dates of bypass operations. The updated analysis determined that the adjusted dates of bypass operations at Wells Dam in 2012 provided bypass passage for 99.96 percent of yearling Chinook, 99.86 percent of steelhead, 100 percent of sockeye, and 99.30 percent of subyearling Chinook. Based upon this high level of compliance with the HCP bypass operating criteria (exceeding the 95% bypass-passage criteria for all species), Douglas PUD proposes to commence operation of the bypass system starting at 00:00 on April 9 and to end operations at 24:00 hours on August 19. For accounting purposes, the 2013 spring bypass season will end on June 13th at 24:00 hours and the summer bypass season will begin on June 14th at 00:00 hours.

Dam safety emergency action planning, as required by the Federal Energy Regulatory Commission (FERC), calls for Douglas PUD to operate Wells Dam with sufficient automatic-gate-opening capacity in the spillways to pass the flow from a plant load rejection of up to 200 thousand cubic feet per second (kcfs), in addition to any concurrent initial spillway discharge.

Of the 11 spillways at Wells Dam, only spillways 3 through 9 have automated gate hoists. Thus, the seasonal installation of bypass barriers in spillways 2, 4, 6, 8 and 10, substantially reduces the automatic-gate-opening capacity of Wells Dam by reducing the capacity of each bypass spillway to 8.6 kcfs. Consequently, Douglas PUD must remove bypass barriers systematically when discharge estimates exceed certain flow thresholds, as per Table 2, sufficient to provide the necessary automatic-gate-opening flow capacity as described in the FERC-required Emergency Action Plan for the Wells Project (EAP, Appendix I). Decisions to remove bypass barriers for dam safety considerations will be made each Monday (or at other times as necessary) during the bypass period and will be based on weekly forecasts of combined discharge from Chief Joseph Dam and side-flows from the Okanogan and Methow rivers (from the National Weather Service Northwest River Forecast Center [NWRFC]; http://www.nwrfc.noaa.gov/stp/stp.cgi).

Table 2. Schedule for removal of spillway flow-barriers (bypass barriers) to accommodate flood flows and load rejections.

Inflow Forecast (kcfs)	Bypass Barriers Removed
Up to 200	None
200 – 240	Spillway 6
240 – 275	Spillways 6, 8
275 – 310	Spillways 4, 6, 8
310 – 350	Spillways 4, 6, 8, 10, & preset gates 10, 11 to spill excess of 312 kcfs
350 – 400	Spillways 4, 6, 8,10, & preset gates 1, 10, 11 to spill excess of 312 kcfs
400 – 450	All spillways (2, 4, 6, 8, 10)

Juvenile Fish Bypass Operations and Clean Water Act TDG Compliance

Seasonal bypass operations generally coincide with the spring freshet, an event during which operators of hydroelectric projects must cope with flows that often exceed the hydraulic capacity of their powerhouses. When flows exceed the hydraulic capacity of the generating units, water must be passed via the spillway in what is termed "involuntary spill." Involuntary spill increases the concentration of atmospheric gases in the water below hydroelectric projects, and can result in excessive levels of total dissolved gas (TDG) that may injure fish. To minimize the potential for fish injury, the Washington Department of Ecology (WDOE) imposes TDG standards on operators of hydroelectric projects.

Extensive study of spill operations at Wells Dam and modeling exercises at the University of Iowa provide the basis for the development of annual spill "playbooks" for operations at Wells Dam aimed at achieving the WDOE standards for TDG in the Wells tailrace. From modeling and physical-spill studies over the past several years, Douglas PUD has determined that concentrating spill through the middle of the spillway and supporting that concentrated spill with turbine discharge results in the most effective minimization of TDG in the Wells tailrace. Specifically, the best TDG performance is achieved when concentrating involuntary spill through Spillway 5, and allocating additional spill, beyond the capacity of Spillway 5, to Bypass Bay 6 and then to Spillway 7, up to a maximum of 43 kcfs per spillway.

To accomplish this TDG-minimizing pattern of concentrated spill requires the removal of the bypass barriers from at least one spillway during periods with excessive involuntary spill. The removal of the bypass barriers from one bypass bay takes approximately eight hours and requires

the use of a four-man mechanical crew and the powerhouse gantry cranes. To comply with the TDG standards below Wells, the bypass barriers must be removed from at least one spillway whenever involuntary spill exceeds 30 kcfs and one or both of the following conditions applies: 1) prolonged (> 8 hours) involuntary spill in excess of 40 kcfs is predicted (based on forecasted tributary inflows from the NWRFC and estimated discharge from Chief Joseph Dam provided by the US Army Corps of Engineers); or 2) total spill is predicted to exceed 53 kcfs, regardless of duration. Once involuntary spill of less than 40 kcfs, for a period of at least four days is predicted, the respective bypass barriers would be reinstalled. At river flows greater than 240 kcfs, bypass barriers would be removed from additional bypass bays as described above (see Table 2) and reinstalled sequentially as appropriate.

Juvenile Fish Bypass Contingency Plan

The failure of a gate-hoist cable in a bypass spillway at Wells Dam in late August 2010 provided the impetus for the development of a contingency plan for bypass operations during similar events that could occur in the future. Under the 2010 Juvenile Fish Bypass Contingency Plan (Bypass Contingency Plan), in the event of a failure of a bypass gate or other such accident or unanticipated mechanical failure that rendered impossible normal bypass operations, Douglas PUD's initial response would follow the Wells Juvenile Bypass Plan, shutting down associated turbine units as prescribed in Section 4.3 of the Wells HCP. However, high river discharge in 2011 and 2012 highlighted the need to incorporate the consideration of TDG into the Bypass Contingency Plan, and we have modified the plan accordingly.

During periods of high river discharge, mid-Columbia hydroprojects maximize powerhouse discharge to minimize spill and associated increases in TDG. Shutting down a turbine at Wells Dam when all other turbines are loaded would increase spill by 20 kcfs, which would also increase TDG. However, losing function of one bypass unit at Wells Dam affects two turbine units; thus, shutting down both turbine units associated with the malfunctioning bypass spillway would increase spill by 40 kcfs. Therefore, Douglas PUD has modified the Bypass Contingency Plan to avert unnecessary increases in TDG from shutting turbine-units due to a mechanical failure of the bypass system.

Section 4.3 of the Wells HCP directs Douglas PUD to shut down the turbine units adjacent to the bypass spillway that is not operating due to either a lack of water or an inability to operate the bypass spillway. Under the 2010 Bypass Contingency Plan, the associated turbine units would have remained inactive until personnel at Wells Dam could determine the cause of the bypass failure and the nature of and time required for the necessary repair. Under the new Bypass Contingency Plan, if shutting down the turbines would not threaten compliance with TDG standards, Douglas PUD would shut down the associated turbine units. However, if doing so would threaten compliance with TDG standards, Douglas PUD would not shut down the associated turbines but would instead direct spill through spillways adjacent to the affected turbine units in a manner that provides bulk flow for fish passage while minimizing TDG (Figure 1, Option 1). Douglas PUD would consult the Spill Playbook (see above) to select such spill configurations, and would spill at least 10 kcfs through selected spillways to engage the submerged flip-lip as a TDG minimization measure and to provide bulk flow for fish attraction to the surface passage route. In circumstances where turbine shutdown would not jeopardize TDG compliance, Douglas PUD would shut down the associated turbine units to evaluate and

repair the malfunction, but may then elect to move the bypass barriers from the inoperable bypass spillway to an adjacent, non-bypass spillway to obtain the use of an additional turbine unit (see Figure 1, options 2 and 3). The gate for that substitute bypass spillway would then be set at the standard 1-foot opening for bypass spillways and the adjacent turbine unit could be operated without constraints. This configuration would meet the intent of HCP Section 4.3 by providing bypass spill immediately adjacent to every operating turbine unit and would comply with the goal of the Total Dissolved Gas Abatement Plan.

During the repair of a bypass malfunction, Douglas PUD would daily reevaluate forecasts of Chief Joseph Dam discharge, tributary inflows, and TDG conditions, as well as repair progress, and determine which bypass option to implement.

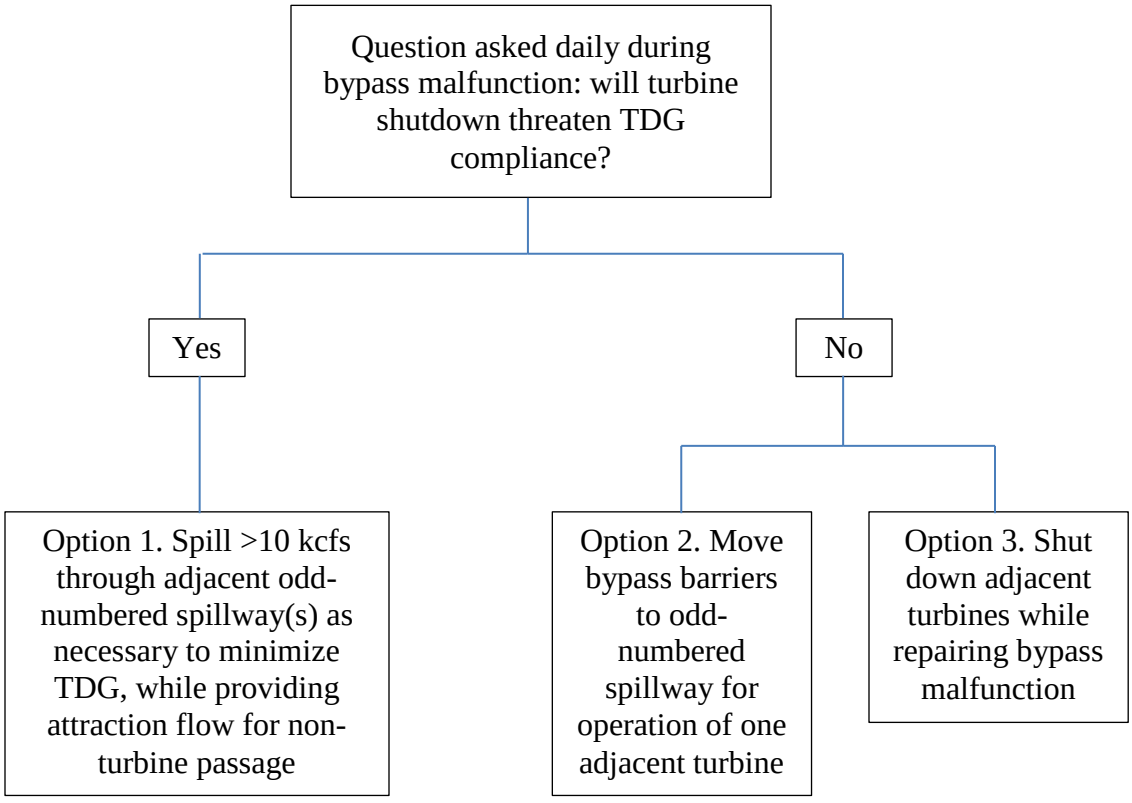

Figure 1. Evaluation flow chart for daily decisions regarding bypass, spill, and turbine operations during a bypass malfunction.

Appendix D – Pre-filing consultation record for the 2013 Bypass Operating Plan

Andrew Gingerich

From: Kristi Geris <kgeris@anchorqea.com>
Sent: Wednesday, December 26, 2012 4:22 PM
To: Andrew Gingerich; Bill Tweit (tweitwmt@dfw.wa.gov); Bob Rose (rosb@yakamafish-nsn.gov); 'Bryan Nordlund (bryan.nordlund@noaa.gov)'; Jerry Marco (Jerry.Marco@colvilletribes.com); Jim Craig (jim_l_craig@fws.gov); Mike Schiewe; Rick Klinge; Steve Hemstrom (steven.hemstrom@chelanpud.org); Steve Parker (pars@yakamafish-nsn.gov); 'Teresa Scott (teresa.scott@dfw.wa.gov)'; Tom Kahler
Cc: beichdvb@dfw.wa.gov; Gallaher, Becky; Joe Miller (Joseph.Miller@chelanpud.org); 'Josh Murauskas (josh.murauskas@chelanpud.org)'; Keith Truscott; Lance Keller; Lee Carlson (carl@yakamafish-nsn.gov); Shane Bickford
Subject: FW: Douglas Draft 2013 Bypass Plan
Attachments: 2012_12_26 Douglas - 2013 Douglas - Bypass Operating Plan Memo - draft 12-26-12.pdf

Follow Up Flag: Follow up
Flag Status: Completed

Hi HCP-CC: please see the email below from Tom and the attached Douglas PUD draft 2013 Bypass Operating Plan Memo for discussion, and perhaps approval, at the Coordinating Committees January 22, 2013 meeting.

Hope your holidays are going well!
Kristi ☺

Kristi Geris

ANCHOR QEA, LLC
kgeris@anchorqea.com

From: Tom Kahler [mailto:tomk@dcpud.org]
Sent: Wednesday, December 26, 2012 4:10 PM
To: Kristi Geris
Cc: Mike Schiewe; Shane Bickford; Andrew Gingerich
Subject: Douglas Draft 2013 Bypass Plan

Hi Kristi,

I hope your Christmas isn't over. My recycle bin hopes mine is.

As promised (though a week late), attached is the draft of our 2013 bypass operations report for the CC. Because we now have a FERC-review step with a deadline, I'm hoping for a CC decision on this at the January meeting. Please pass this on to the CC for their review in preparation for a discussion and (we hope) a decision at the January meeting. I'll send out our Gas (TDG) Abatement Plan later this week or next in case the CC has any questions regarding the relationship between the two documents (no one panic—the GAP isn't a review document for the CC!).

Helpful hint—don't burn all that wrapping paper at the same time!

Thanks,

Tom

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Andrew Gingerich

From: Kristi Geris <kgeris@anchorqea.com>
Sent: Friday, December 28, 2012 5:05 PM
To: Andrew Gingerich; Bao Le; Beau Patterson; Bill Towey (bill.towey@colvilletribes.com); Bob Jateff (jatefrjj@dfw.wa.gov); Bob Rose; 'Brad James'; 'Bret Nine'; 'Chad Jackson'; Charlie McKinney (cmck461@ecy.wa.gov); Chas Kyger; 'Donella Miller'; Jason McLellan; Jeff Korth (korthjwk@dfw.wa.gov); 'Jessi Gonzales'; Joe Peone (joe.peone@colvilletribes.com); kirk.truscott@colvilletribes.com; Mary Mayo; Mike Schiewe; Molly Hallock (hallomh@dfw.wa.gov); Pat Irle (pirl461@ecy.wa.gov); 'Patrick Luke'; Patrick Verhey (Patrick.Verhey@dfw.wa.gov); Paul Ward (ward@yakama.com); Shane Bickford; 'Steve Lewis'; 'Steve Parker (parker@yakama.com)'; Steve Rainey
Subject: FW: 2013 Wells Dam GAP 12-28-2012 clean
Attachments: 2012_12_28 Douglas - 2013 Douglas - Bypass Operating Plan Memo - draft 12-26-12.pdf; 2012_12_28 Douglas - 2013 Wells Dam GAP 12-28-2012 clean.doc

Hi Aquatic SWG: please see the email below from Andrew and the attached proposed 2013 Wells Dam Gas Abatement Plan and 2013 Bypass Operating Plan.

Thanks!
Kristi ☺

Kristi Geris

ANCHOR QEA, LLC
kgeris@anchorqea.com

From: Andrew Gingerich [mailto:andrewg@dcpud.org]
Sent: Friday, December 28, 2012 4:07 PM
To: Kristi Geris
Cc: Mike Schiewe; Shane Bickford; Chas Kyger; Tom Kahler
Subject: 2013 Wells Dam GAP 12-28-2012 clean

Kristi,

Attached is the proposed *2013 Wells Dam Gas Abatement Plan*. For some years now Douglas PUD has worked in collaboration with the Department of Ecology to obtain an adjustment to the 110% TDG water quality criteria during the fish spill season. The adjustment allows for higher TDG values in order to provide fish with higher bypass efficiency via spill routes past virtually all main-stem Columbia and Snake River Projects. In summary, although this may appear to be a new process to some, we go through this process every year in preparation for the upcoming spill season.

This year we will, as always Douglas PUD will work with the WA Dept. of Ecology to obtain the TDG standard adjustment for out-migrating smolts, but also we are sharing it with the ASWG and the HCP Coordinating Committee to provide an opportunity to comment. The *Gas Abatement Plan* fits within the context *Bypass Operating Plan* that is prepared with the HCP-CC every year as well. As such, I have also attached the HCP bypass plan for 2013 to provide additional context related to Wells Dam fish spill and project operations in the spring/summer.

Aquatic SWG members will find that we have put these documents on the agenda for the Jan 9th ASWG meeting, but of course if people have specific questions prior to the meeting I would encourage them to ask away. In the meantime

please distribute this message and the document to the ASWG and the HCP CC. As is typical with our vetting process comments are welcome.

Thanks!
Andrew
509-881-2323

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ANCHOR QEA

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Seattle, Washington 98101
Phone 206.287.9130
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www.anchorqea.com

MEMORANDUM

To:	Wells, Rocky Reach, and Rock Island HCP Coordinating Committees	**Date:**	January 25, 2013
From:	Michael Schiewe, Chair		
Cc:	Kristi Geris		
Re:	Action Items and Agreement Summary from January 22, 2013, HCP-CC Meeting		

This memorandum provides a summary of Action Items, decisions, and documents out for review as agreed on at the Wells, Rocky Reach, and Rock Island Hydroelectric Projects Habitat Conservation Plans (HCP) Coordinating Committees (CC) meeting that met at the Radisson Hotel in SeaTac, Washington on Tuesday, January 22, 2013, from 9:30 am to 1:00 pm. These action items include the following:

ACTION ITEM SUMMARY

- Tom Kahler will send Kristi Geris the Douglas PUD Final 2013 HCP Action Plan for distribution to the Coordinating Committees (Item II-A).
- Bryan Nordlund will send Shane Bickford a letter or email documenting National Marine Fisheries Service (NMFS) approval of the Douglas PUD Final 2013 Bypass Operations Plan, no later than Friday, February 1, 2013 (Item II-B).
- Jim Craig will send Shane Bickford a letter or email documenting United States Fish and Wildlife Service (USFWS) approval of the Douglas PUD Final 2013 Bypass Operations Plan, no later than Friday, February 1, 2013 (Item II-B).
- Bryan Nordlund will review the Douglas PUD Draft 2013 Gas Abatement Plan, and upon approval, will send Shane Bickford a letter or email documenting NMFS approval of the plan, no later than Friday, February 1, 2013 (Item II-C).
- Jim Craig will review the Douglas PUD Draft 2013 Gas Abatement Plan, and upon approval, will send Shane Bickford a letter or email documenting USFWS approval of the plan, no later than Friday, February 1, 2013 (Item II-C).
- Coordinating Committees representatives will review the Douglas PUD Draft 2013 Gas Abatement Plan and provide comments to Tom Kahler and Kristi Geris no later than Friday, February 1, 2013 (Item II-C).

- Coordinating Committees representatives will review the Douglas PUD Draft 2013 10-year No Net Impact (NNI) Comprehensive Check-in Report and provide comments to Tom Kahler no later than Monday, February 11, 2013 (Item II-D).
- Coordinating Committees representatives will review the Douglas PUD Draft 2012 Wells Post-Season Bypass Report and provide comments to Tom Kahler no later than Friday, February 15, 2013 (Item II-E).
- Steve Hemstrom will add information on juvenile survival estimates (dates tested and results) to the Statement of Agreement (SOA) to Re-approve Phase III Standards Achieved for Combined Adult and Juvenile Survival at Rocky Reach and Rock Island, and will provide the revised SOA to Kristi Geris for distribution to the Coordinating Committees (Item IV-C).
- Chelan PUD will incorporate the latest revisions to the Chelan PUD Draft 2013 NNI Report and redistribute the revised report to the Coordinating Committees; the report will be considered for approval at the Coordinating Committees February 26, 2013 meeting (Item IV-D).
- Chelan PUD and Douglas PUD will explore options for developing a shared HCP filing system and will report back to the Coordinating Committees for further discussion (Item VI-A).

DECISION SUMMARY

- No SOAs were approved at this meeting.

AGREEMENTS

- Coordinating Committees representatives present approved the Douglas PUD 2013 HCP Action Plan, as revised (Item II-A).
- Coordinating Committees representatives present approved the Douglas PUD 2013 Bypass Operations Plan (Item II-B).
- Coordinating Committees representatives present agreed to include in the Douglas PUD Draft 2013 10-year NNI Comprehensive Check-in Report the Executive Summary of the Fish and Water Management Tool (FWMT) Report from Dr. Kim Hyatt, Department of Fisheries and Oceans Canada (DFO) in lieu of the full report, with the expectation that the full report will be appended when available about August 2013 (Item II-D).

- Coordinating Committees representatives present approved the Rocky Reach Juvenile Bypass Final Operating Plan for April 2013 (Item IV-A).

REVIEW ITEMS

- The Douglas PUD Draft 2013 Gas Abatement Plan is available for review, with comments due to Tom Kahler and Kristi Geris no later than Friday, February 1, 2013.
- Kristi Geris sent an email to the Coordinating Committees on December 11, 2012, notifying them that the Douglas PUD Sub-yearling Report is available for a 60-day review period, with comments due to Tom Kahler and Andrew Gingerich no later than Monday, February 11, 2013.
- Kristi Geris sent an email to the Coordinating Committees on December 27, 2012, notifying them that the Douglas PUD Draft 2013 10-year NNI Comprehensive Check-in Report is available for review. Comments are due to Tom Kahler no later than Monday, February 11, 2013.
- Kristi Geris sent an email to the Coordinating Committees on January 17, 2013, notifying them that the Douglas PUD Draft 2012 Wells Post-Season Bypass Report is available for a 30-day review period, with comments due to Tom Kahler no later than Friday, February 15, 2013.

REPORTS FINALIZED

- There are no reports that have been recently finalized.

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United States Department of the Interior
Fish and Wildlife Service
Mid-Columbia River Fishery Resource Office
7501 Icicle Road
Leavenworth, WA 98826
Phone: (509) 548-7573
Fax: (509) 548-5743

January 28, 2013

Shane Bickford
Natural Resources Supervisor
Public Utility District No. 1 of Douglas County
1151 Valley Mall Parkway
East Wenatchee, Washington 98802-4497

Dear Mr. Bickford,

In December 2012 Douglas PUD submitted to the HCP Coordinating Committees coordinated plans for juvenile fish bypass operations and total dissolved gas abatement at the Wells Hydroelectric Project in 2013. I, as the U.S. Fish and Wildlife Service representative, reviewed those plans and along with the other agency and tribal Coordinating Committee representatives approved those plans. Specifically, the plans approved were: *Total Dissolved Gas Abatement Plan*, submitted for Coordinating Committee review on 28 December 2012, and the *Wells Dam 2013 Juvenile Fish Bypass Operating Plan* submitted for Coordinating Committee review on 26 December 2012.

I hope this letter assists Douglas PUD with their FERC submission. Feel free to contact me if you need anything further.

Sincerely,

Jim L Craig
Project Leader

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Andrew Gingerich

From: Shane Bickford
Sent: Monday, January 28, 2013 11:14 AM
To: Mary Mayo; Andrew Gingerich
Subject: FW: 2013 Wells Dam operations

Follow Up Flag: Follow up
Flag Status: Flagged

Mary and Andrew,

NMFS approval of the BOP and GAP can be found in the e-mail below. Please add this to the agency approval correspondence.

Thanks,

Shane

From: Bryan Nordlund - NOAA Federal [mailto:bryan.nordlund@noaa.gov]
Sent: Monday, January 28, 2013 10:23 AM
To: Shane Bickford
Cc: Tom Kahler
Subject: 2013 Wells Dam operations

Shane - After distribution of draft documents, at the December 2012 meeting of the Wells HCP Coordinating Committee, Douglas PUD presented the Total Dissolved Gas Abatement Plan and the 2013 Juvenile Fish Bypass Operating Plan for Wells Dam, followed by Committee discussion.

I have completed my review of these plans and find them consistent with NMFS expectations for Wells Dam operations in 2013. As such, please consider this email to construe NMFS approval of these plans.

Bryan Nordlund

--
Bryan Nordlund, P.E.
360-534-9338
National Marine Fisheries Service
510 Desmond Drive, Suite 103
Lacey, WA 98503

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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
15 W Yakima Ave, Ste 200 • Yakima, WA 98902-3452 • (509) 575-2490

February 12, 2013

Andrew Gingerich
Douglas County Public Utility District No. 1
1151 Valley Mall Parkway
East Wenatchee, WA 98802

Re: Wells Hydroelectric Project No. 2149
2013 TDG Gas Abatement Plan

Dear Andrew Gingerich:

The Washington State Department of Ecology approves the 2013 Gas Abatement Plan (GAP) for the Wells Hydropower project, submitted in accordance with WAC 173-201A-200(1)(f)(ii)) and the Clean Water Act (CWA) 401 certification Section 6.7(2)(a). Approval of this GAP allows higher TDG levels that occur during spill for downstream fish passage during spring and summer of 2013.

In addition, it appears that the GAP and the Bypass Operating Plan are appropriately coordinated, in accordance with the 401 Certification, Section 6.7(2)(d).

Thank you for the quality of your products. If you have any questions, please feel free to call me at (509) 454-7864.

Sincerely,

Patricia S. Irle
Hydropower Projects Manager

By Certified Mail 7006 0100 0002 8191 2315

Document Content(s)

GAP and BOP - FERC approval request.PDF.....1-97