

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Lock & Dam, Fishway and Fish Activities for Week 10 of 2024, which covers the period from 03 to 09 March 2024.

1. ITEMS OUT OF CRITERIA (OOC):

- **Table 1.** FPP Items Out of Criteria.

Date	Location	FPP Violation	Cause	Response
03/03 – 03/09	BON	Unit Priority – U2, U3, U4, U5, U6, U7, U8, U9 & U10 F.O.	U2, U3, U4, U5, U6, U7, U8, U9, & U10 F.O., Oil Leak Investigation	W.O., Next Available Unit(s) Ran in Place (until 26 Feb)
03/03 – 03/09	BON	Unit Priority – U12 F.O.	U12 F.O., Stator Ground	W.O., Next Available Unit Ran in Place
PH1:				
03/03 – 03/09	PH1CC	FG 2-19 Stuck in the Mostly Closed Position, Should be Open	Mechanically Bound	W.O.
03/03 – 03/09	PH1CC	FG 2-21 Closed, Should Be Open	Mechanically Bound	W.O.
Bradford Island:				
03/03, 06, 03/08 – 03/09	A-Branch	A-Branch Staff Gauge High >1.1’	Unknown	N/A
03/03 – 03/05	B-Branch	FG 3-31 Stuck in the Open Position	Unknown	Mech/Electrician Troubleshooting
Cascades Island:				
03/03	CI Fishway	FG 6-11 Closed, Should be Open	Mechanically Bound	W.O.
03/03 – 03/09	CI Fishway	FG 6-12 Closed, Should be Open	Mechanically Bound	W.O.
03/04 – 03/09	CI Fishway	FG 6-18 Open, Should be Closed	Mechanically Bound	W.O.
Washington Shore:				
03/03 – 03/09	WA Shore Fishway	Weir 37 High, >1.1’	Weir 37 Blowdown Valve OOS	W.O.
03/03 – 3/04, 03/06 – 3/09	WA Shore Fishway	Weir 38 High, >1.1’	Weir 37 Blowdown Valve OOS	W.O.

- PH1 Collection Channel diffuser FG 2-19 was found mechanically bound in the mostly closed position on 02/24/22 by PH1 Mechanics. No repairs can be made until the PH1CC can be dewatered.
- PH1 Collection Channel diffuser FG 2-21 was found mechanically bound in the closed position by PH1 Mechanics on 02/24/24. No repairs can be made until the PH1CC can be dewatered.
- The Cascades Island Fishway diffuser FG 6-11 is mechanically bound in the closed position due to stripped shaft threads. A work order has been created and repairs will be made during the next full dewater of the Cascades Island Fishway.
- Cascades Island Fishway diffuser FG 6-12 is mechanically bound in the closed position for unknown

reasons. A work order has been created and repairs will be made during the next full dewater of the Cascades Island Fishway.

- Cascades Island Fishway diffuser FG 6-18 was found stuck in the open position with limiter problems in the fall of 2022. A work order has been created and repairs have been attempted, but full repair requires complete dewatering of the fishway. These repairs will be made during the next full dewater of the Cascades Island Fishway.
- PH1 Unit Priority: Multiple oil sheens have been observed in the PH1 tailrace by Bonneville Staff on several occurrences over the past year. Please refer to MFRs 24BON001, 24BON003, 24BON004, 24BON005, 24BON007, and 24BON009 for details. Consequently, Units 2, 3, 4, 5, 6, 7, 8, 9, and 10 have been forced out of service and will remain OOS until a full dewater, inspection, and investigation of each Unit has been completed.

2. OPERATION SUMMARY:

a. Daily average river flows ranged from 125.0 to 132.4 kcfs. Daily average powerhouse forebay elevation ranged from 74.4' to 75.8' msl. Daily average Project tailwater ranged from 12.3' to 13.4' msl. Secchi disk measurements remained at 7.0+'. Daily average water temperature ranged from 41 to 42°F.

b. Daily average spill ranged from 1.4 to 3.6 kcfs.

c. Unit Operation: PH2 remains the priority powerhouse. Main unit drawdowns are measured every Monday and more frequently as needed.

- **Table 2. Main Unit Outages**

Unit	OOS	RTS	Reason	Duration
4	1631 on 29 Mar 2023	---	F.O., Oil Leak Investigation/5-YR Overhaul	---
3	1105 on 12 Jun 2023	---	F.O., Oil Leak Investigation	---
6	1714 on 03 Jan	---	F.O., Oil Leak Investigation	---
10	1714 on 03 Jan	---	F.O., Oil Leak Investigation	---
12	0731 on 05 Jan	---	F.O., Stator Ground	---
9	1220 on 11 Jan	---	F.O., Oil Leak Investigation	---
7	1409 on 15 Feb	---	F.O., Oil Leak Investigation	---
2	1013 on 26 Feb	---	F.O., Oil Leak Investigation	---
8	1359 on 26 Feb	---	F.O., Oil Leak Investigation	---
5	1433 on 26 Feb	---	F.O., Oil Leak Investigation	---

- Fish Units: Second Powerhouse Fish Units provide attraction flow for the Washington Shore (WS) fish ladder.

Fish Unit Outages: Fish Units are periodically paced into reserve shutdown (RS) to float trash when debris differentials become excessive and trash raking is not possible.

Table 3. Fish Unit Outages

Unit	OOS/RS	RTS	Reason	Duration
F1	1529 on 07 Mar	1537 on 07 Mar	Gov oil pump not building pressure	8 mins

- **Table 4.** Fish Unit Drawdowns, in Feet.

Date	F1	F2
03/03	0.1'	0.2'
03/04	0.3'	0.2'
03/05	0.2'	0.2'
03/06	0.3'	0.2'
03/07	0.4'	0.4'
03/08	0.1'	0.1'
03/09	0.1'	0.1'

2. MAINTENANCE ACTIVITIES:

- Auxiliary Water System Closures:
 - FV 6-9 was closed for cleaning from 0725 to 0735 on 07 March.
- STS/VBS Inspections: Nothing to report.
- Dewatering and Fish Salvages: The upper Nav Lock sill was dewatered for annual maintenance. No fish were present

3. RESEARCH

- Four Peaks Environmental - Fish counting contract: Daytime video counting (0400 to 2000 PDT) began on 01 December. Fish counts can be viewed [here](#).
- USFWS – Lamprey Metamorphosis Study: Juvenile lamprey researchers are onsite and the work is underway.
- Pacific States Marine Fisheries Commission – Smolt Monitoring: Sample collections at the Smolt Monitoring Facility (SMF) began on 02 March at 0700. Debris at the primary dewatering structure (PDS) and fish/debris separator ranged from moderate to heavy consisting mostly of sticks. Fallbacks observed this week: three steelhead.
A total of 14 fin clips were obtained from Pacific Lamprey macrophthalmia for Columbia River Inter-Tribal Fish Commission’s genetic studies this week.

4. FISHWAYS:

- Project Biologists inspected from 03 – 09 March.
- Adult Fishways:
 - (1) The AFF remains out of service for the winter maintenance season.
 - (2) Sensor calibration checks were occurred on 04 March
 - (3) SLEDs are installed at all locations.
 - (4) Bradford Island, Cascades Island, and Washington Shore Fishways remain in service.
- Juvenile Fishways:
 - (1) The ITS remains in service.

- (2) The hydro-cannon remains in service.
- (3) The B2CC began operating 01 March according to the FPP criteria found in section BON 2.3.2.5.v. and listed below:
 - (a) March 01 – 08: Open the B2CC daily from 0600 – 1000 HRS. Open within 30 minutes of the start time and shift the closure time as necessary to maintain the 4-HR duration.
 - (b) March 09 – 25: Open the B2CC daily from 0600 – 1000 and 1600 – 2000. Open within 30 minutes of the start time and shift the closure time as necessary to maintain the 4-HR duration.
 - (c) March 25 – August 31: Beginning at 0600 on March 26, operate the B2CC continuously (24 HRS/day) through August 31. Close the B2CC within one hour of the end of summer spill on August 31.
- (4) The DSM remains in service.
- (5) STSs remain in service.

d. Lamprey Fishways:

- (1) BI, CI, and WA Shore LPS's remain out of service.
- (2) The Bradford Island Wetted Wall (BIWW) remains out of service.
- (3) The PH2 Lamprey Flume Structure (LFS) remains out of service.
- (4) The 2023 lamprey trapping and translocation activities have concluded for the 2023 season.
- (5) Avian Monitoring: Avian counts are recorded 01 April – 31 October.

5. WATER QUALITY MONITORING:

- a. Fishway Temperatures: Fishway temperature monitoring has concluded for the 2023 season.
- b. Zebra Mussel Monitoring: No signs of colonization were observed this reporting week.

7. CONSTRUCTION:

- Installation of the B-Branch LPS concluded this week.

8. HAZMAT, SPILLS AND CLEANUP: Nothing to report.

9. TELETYPE CURRENTLY IN EFFECT:

- A teletype was distributed on 30 August detailing the fall/winter spill priority list and fall/winter spill caps. This teletype provides the order that projects spill for lack of load conditions and is to be used until further notice. Please see teletype BON R 083023 1555 for further details.
- A teletype was distributed on 20 December replacing the previous teletype BON R 122023 1131 Tailwater Operation for Chum Incubation 4. This 5th revision to the teletype states: Effective, Sunday 31 December 2023, at 0001 HRS, until further notice, Bonneville Dam minimum tailwater elevation is 11.3 ft during all hours. The intent of this operation is to ensure sufficient tailwater elevation to protect chum redds in the Ives/Pierce Island area during the egg incubation period. This 5th revision's updated minimum tailwater elevation was based on an updated WDFW chum salmon survey data that occurred on 20 December. Please see teletype BON R 122023 1340 for more details.

- A teletype was distributed on 29 February detailing a Bonneville Forebay operation and spillway outages. Bonneville is to maintain the Forebay above a minimum of 75 FT, hard constraint, during the following dates and times:
 - 04 March, from 0830 to 1500 HRS
 - 05 March, from 0830 to 1500 HRS
 - 06 March, from 0830 to 1500 HRSOn 06 March between 0800-1200 HRS, Spillway Gates 2-17 will be tagged out and not available for spill, and the Spillbay 1 and 18 will remain open 0.5 FT during the operating for fish attraction flow (approximately 2.2 kcfs). This operation supports a pre-spill bathymetric survey. Please see teletype BON R 022924 1630 for more details.

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