

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Lock & Dam, Fishway and Fish Activities for Week 05 of 2024, which covers the period from 28 January to 03 February 2024.

1. ITEMS OUT OF CRITERIA (OOC):

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

Date	Location	FPP Violation	Cause	Response
01/28 – 02/03	BON	Unit Priority – U3, U6, U9 & U10 F.O.	U3, U6, U9, & U10 F.O., Oil Leak Investigation	W.O.; Next Available Unit(s) Ran in Place
01/28 – 02/03	BON	Unit Priority – U12 F.O.	U12 F.O., Stator Ground	W.O., Next Available Unit Ran in Place
<b>Bradford Island: Nothing to Report.</b>				
<b>Cascades Island:</b>				
01/29	CI Fishway	FG 6-10 Closed, Should be Open	Electrical Failure	W.O.
01/29 – 02/01	CI Fishway	FG 6-11 Closed, Should be Open	Mechanically Bound	W.O.
01/29 – 02/01	CI Fishway	FG 6-12 Closed, Should be Open	Mechanically Bound	W.O.
01/29 – 02/01	CI Fishway	FG 6-19 Closed, Should be Open	Electrical Failure	W.O.
01/29 – 02/01	CI Fishway	Excessive Drawdown on FV 5-3/5-4 Trash Racks	Lack of Cranes at PH2	Cleaning Attempts W/O Crane + Spill to Draw Debris from Trash Racks
01/29 – 02/01	CI Fishway	CI Fishway Ent/TW Diff <1.0'	FV 5-3/5-4 Trash Racks Full + Malfunctioning FVs and FGs at CI	W.O.
<b>Washington Shore:</b>				
01/29 – 31	WA Shore Fishway	Weir 37 High, >1.1'	Weir 37 Blowdown Valve OOS	W.O.
01/29 – 31	WA Shore Fishway	Weir 38 High, >1.1'	Weir 37 Blowdown Valve OOS	W.O.

- 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 torque 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, and 24BON005 for details. Consequently, Units 3, 4, 6, 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:**

- Daily average river flows ranged from 147.3 to 171.0 kcfs. Daily average powerhouse forebay elevation ranged from 74.1’ to 75.5’ msl. Daily average Project tailwater ranged from 14.7’ to 16.7’ msl. Secchi disk measurements ranged from 3.0 to 7.0’. Daily average water temperature ranged from 37 to 38°F.
- Daily average spill ranged from 0.5 to 2.1 kcfs.
  - Spillbay 18 remains closed for the duration of IWWP and winter maintenance activities in the Bradford Island Fishway.
  - Spill occurred from Spillbays 2 and 3 on 01 February to assist in cleaning the FV 5-3/5-4 trash racks.
- 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	---
17	0902 01 Feb	0926 on 01 Feb	F.O., Unit Tripped Due to Low Level on King Gage	24 mins
17	0647 on 03 Feb	1112 on 03 Feb	F.O., Unit Tripped Due to Low Level on King Gage	4 hours, 25 mins

- 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. Single Fish Unit Operations (**FPP Table BON-12**) began on 04 December when F2 was placed OOS for a 2-YR OH.

**Table 3. Fish Unit Outages**

Unit	OOS/RS	RTS	Reason	Duration
F2	0001 on 04 Dec	---	P.O., 2-YR Overhaul	---
F1	2206 on 29 Jan	2313 on 29 Jan	R.S., Float Trash	1 hour, 7 mins
F1	1922 on 01 Feb	2009 on 01 Feb	R.S., Float Trash	47 mins

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

Date	F1	F2
01/28	0.4'	---
01/29	2.4'	---
01/30	0.5'	---
01/31	1.8'	---
02/01	12.1'	---
02/01	0.1'	---
02/02	0.3'	---
02/03	1.0'	---

## 2. MAINTENANCE ACTIVITIES:

- Auxiliary Water System Closures:
  - FV 6-9 was closed for cleaning from 0803 to 0814 on 29 January.
  - FV 6-9 was placed in manual for cleaning from 0912 to 0918 on 01 February.
  - FV 5-3 and FV 5-4 were closed to clean their trash racks on the morning of 01 February.
- STS/VBS Inspections: STS's remain OOS for the winter maintenance season.
- Dewatering and Fish Salvages: Nothing to report.

## 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.

## 4. FISHWAYS:

- Project Biologists inspected on 29 January to 01 February.
- Adult Fishways:
  - (1) The AFF remains out of service for the winter maintenance season.
  - (2) Sensor calibration checks were unable to occur this week.
  - (3) SLEDs are installed at all locations.
  - (4) The Cascades Island and Washington Shore Fishways remain in service. The Bradford Island Fishway was taken out of service for the winter maintenance season on 05 December.
- Juvenile Fishways:
  - (1) The ITS remains in service.
  - (2) The hydro-cannon remains out of service for the season.

(3) The B2CC was closed for the season on 01 September but remains available to flush trash or provide surface passage for fish if involuntary spill occurs outside of fish passage spill season. (**FPP BON Section 2.2.2.**)

(4) The DSM was taken out of service on 18 December for the winter maintenance season.

(5) STSs remain out of service for the winter maintenance season.

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 in the B-Branch Entrance Bay is underway.

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

**9. TELETYPES 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 5<sup>th</sup> 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 5<sup>th</sup> 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.

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