

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 46 of 2017, which covers the period from 12-18 November.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 119.2 to 130.9 kcfs. Daily average powerhouse forebay elevation ranged from 73.7' to 74.8' msl. Daily average project tailwater ranged from 11.7' to 12.7' msl. Secchi disk measurements ranged from 4' to 7.0'+. Daily average water temperature ranged from 51°F to 52°F.
- b. Daily average spill remained at 1.0 kcfs all week.
- c. Unit Operation. PH2 remains the priority powerhouse. Main unit drawdowns are measured every Monday and more frequently as needed.

(1) Table 1. Unit Outages.

Unit	OOS Date	RTS Date	Reason
03	0003 on 06 Nov	1453 on 16 Nov	Painting
06	0002 on 06 Nov	1508 on 16 Nov	Slip Rings
10	0950 on 15 Nov	1115 on 15 Nov	Trash Raking
11	1531 on 13 Nov	1630 on 13 Nov	Trash Raking, Planned Outage
11	0820 on 14 Nov	324 on 14 Nov	Trash Raking
12	1434 on 13 Nov	1530 on 13 Nov	Trash Raking, Planned Outage
13	1323 on 13 Nov	1432 on 13 Nov	Trash Raking, Planned Outage
14	1147 on 13 Nov	1322 on 13 Nov	Trash Raking, Planned Outage
15	1049 on 13 Nov	1145 on 13 Nov	Trash Raking, Planned Outage
16	0944 on 13 Nov	1047 on 13 Nov	Trash Raking, Planned Outage
17	0717 on 10 Oct	---	4 Year Overhaul
18	0930 on 21 Aug	---	Exciter trip

- d. Fish Units. Second Powerhouse fish units provide attraction flow for the Washington Shore (WS) fish ladder.
 - (1) F1 was forced out of service from 0219 on 14 Nov to 0323 on 14 Nov to float trash (3.4' drawdown).
 - (2) F2 was forced out of service from 0110 on 14 Nov to 0216 on 14 Nov to float trash (5.3' drawdown).

(3) Table 2. Fish unit drawdowns, in feet.

Date	F1	F2
11/12	0.2'	0.2'
11/13	2.1'	2.7'
11/14	0.0'	0.1'
11/15	0.1'	0.2'
11/16	0.3'	0.3'
11/17	0.9'	1.0'
11/18	0.2'	0.3'

2. MAINTENANCE ACTIVITIES:

a. Auxiliary Water System Closures.

- (a) FV 1-1 was closed from 0659 to 0718 on 13 Nov and 0815 to 0826 on 16 Nov for trashrack cleaning.
- (b) FV 3-9 was closed from 0725 to 0746 on 13 Nov 0708 to 0724 on 14 Nov for trashrack cleaning.
- (c) FV6-9 was closed from 0726 to 0733 on 15 Nov for trashrack cleaning.

b. STS/VBS inspections. No inspections occurred this reporting week.

c. Dewatering and Fish Salvages. On 15 Nov project biologists dewatered the Adult Fish Facility and salvaged approximately 77 buckets worth of shad, peamouth, pikeminnow, suckers, and carp. Two juvenile salmonids, two adult Lamprey, and one juvenile lamprey were also salvaged and returned to the river.

3. RESEARCH:

a. Normandeau – Fish counting. Visual counting continues.

4. FISHWAYS:

a. Project biologists inspected 12-14, & 17-18 November.

b. Fish passage plan observations.

(1) Table 3. FPP out of criteria items.

Date	Location	FPP Items	Cause	Response
11/15-16	BON	No Inspection	Lack of personnel	NA
BRADFORD ISLAND				
11/12-14, 17-18	A-Branch	Differential > 1.1'	Unknown	NA
CASCADES ISLAND - Nothing to report				
WASHINGTON SHORE - Nothing to report				

- (1) FG3-3 is currently open and unplugged. The diffuser cannot be repaired until the north PH1CC area is dewatered. The next opportunity will be the 2017-18 winter maintenance period. It should be closed below tailwaters of 8.2' msl.

- (2) The FG3-4 diffuser shaft was found to be vibrating unusually. The diffuser was closed on 29 Dec 2016 to prevent further damage to the gate. The next opportunity for repair is the 2017-18 winter maintenance period.
- (3) FG3-8 was found to be banging loudly on 11 May. It was closed until repairs can be made. It should be open above tailwaters of 28.2' msl.
- (4) Bonneville had the majority of its avian lines broken due to ice storms during the 2016/17 winter. Avian lines will be replaced after the new FY & pending results from hydro surveys scheduled to occur 25-26 September.
- (5) PH2 diffuser B4 was discovered to have its stem bent on 24 May. It likely occurred while trying to close and is believed to be open. It should be closed at tailwaters above 31.0' and below 11.0' msl.
- (6) The NDE cannot open past 5' putting the entrance into FPP violation for submergence (>13.0'). It is believed to be full of sand. The NDE gate will have to be removed at a future date and the sand sucked in order for this entrance be in compliance.

b. Adult Fishways.

- (1) The AFF was dewatered on 15 November.
- (2) Sensor calibration occurred on 14 November.
- (3) SLEDs are installed in all fishway entrances.

c. Juvenile Fishways.

- (1) The ITS remains in service.
- (2) The hydro-cannon is on.
- (3) The B2CC is out of service.
 - (a) B2CC was open from 0830 to 1335 on 14 Nov to remove debris from the PH2 forebay.
- (4) The DSM remains in service.

d. Lamprey Fishways.

- (1) The NDE LFS/LPS went out of service for the season on 24 August due to extremely low fish counts.
- (2) The BI, CI, and WA AWS LPSs were taken out of service on 31 October.

e. Avian Monitoring. Bird counts are r between 01 April and 31 October.

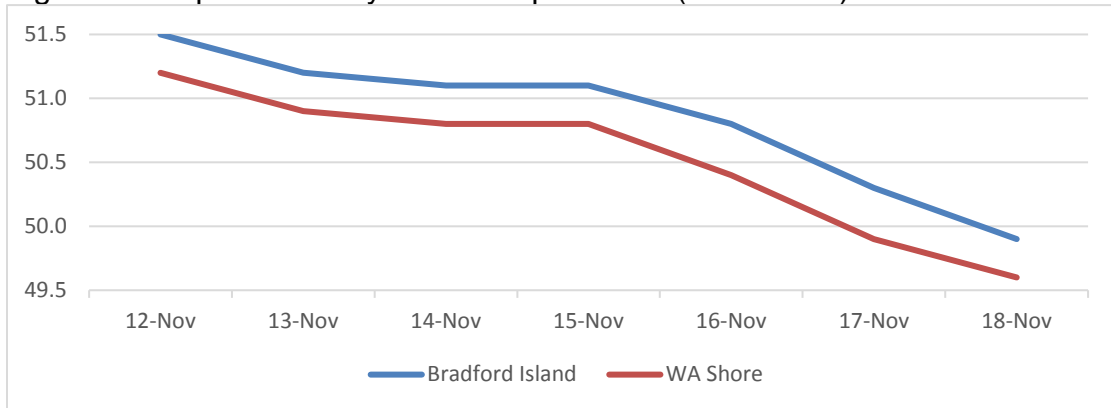
2. WATER QUALITY MONITORING:

a. Fishway Temperatures. Temperatures are taken from 01 March through 30 November. Forebay temperatures can be found [online](#).

(1) Table 4. Average daily fishway water temperatures (Fahrenheit).

Date	Bradford Island	WA Shore
12-Nov	51.5	51.2
13-Nov	51.2	50.9
14-Nov	51.1	50.8
15-Nov	51.1	50.8
16-Nov	50.8	50.4
17-Nov	50.3	49.9
18-Nov	49.9	49.6

b. Figure 1. Graph of fishway water temperatures (Fahrenheit).



c. Zebra Mussel Monitoring. No signs of colonization were observed this reporting week.

3. CONSTRUCTION: Nothing to report.

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

5. TELETYPES CURRENTLY IN EFFECT:

- a. A teletype updated on 21 June provides spill caps and lack of load spill conditions to be used from 0000 on 01 April until further notice.
- b. A teletype sent on 02 October outlines operations for Chum spawning. Effective 0600 on 07 November until further notice, as project outflows increase, operate the Bonneville tailrace at all hours in the range of 11.5' to 13.0'. Then if necessary to increase project outflow, tailwater may be operated up to 16.5' from 1700 to 0600, while concentrating the highest elevations around 2400. Then, if necessary operate up to 18.5' from 1700 to 0600. Then, if increasing river flows preclude the ability to manage the tailwater within the steps above, operate to provide a tailwater in the range of 13.0' to 16.5' during daytime hours (0600 to 1700) and up to the maximum within project 24-ramp rate limits during nighttime hours (1700-0600). The goal of this operations is to improve conditions at the Ives/Piece island complex for Chum Salmon spawning.

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