

Electronically filed September 1, 2017

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Mr. John
Oregon D
700 SE E

Mr. John Dadoly Oregon Department of Environmental Quality 700 SE Emigrant Ave - Suite 330 Pendleton, OR 97801

Subject: Wallowa Falls Hydroelectric Project, FERC No. P-308 Forebay Flushing Report, September 2017

## Dear Addressee:

The Federal Energy Regulatory Commission (Commission) issued a new operating license for the Wallowa Falls Hydroelectric Project (Project) January 5, 2017. Annual flushing of the Project forebay is permitted under Appendix A, Condition 5 of the license. On August 2, 2017 the Commission issued an Order Modifying and Approving the Turbidity Monitoring Plan for Forebay Flushing under Appendix B, Condition 10 of the Project license. This letter report satisfies the annual reporting requirement for forebay flushing.

PacifiCorp first attempted to flush the Project forebay the week of June 25, 2017. Prior to this planned flush, PacifiCorp held a forebay flushing coordination conference call with agency stakeholders June 12, 2017. As described in PacifiCorp's July 20, 2017 letter to the Commission, initial flushing of the Project forebay was unsuccessful. On June 29, 2017 PacifiCorp held another conference call with agency stakeholders to notify them that forebay flushing was unsuccessful and requested permission to flush, using alternative methodology, outside of the month of June. The agencies agreed that flushing could occur prior to July 31, 2017 using the alternative schedule and work plan provided by PacifiCorp.

Forebay flushing was successfully completed July 24 through 28, 2017. The final Turbidity Monitoring Plan for Forebay Flushing, dated June 2, 2017, requires that natural inflow to the Project must be greater than or equal to 15 cubic feet per second (cfs) for flushing to occur. On two separate readings, taken July 24 and July 26, 2017, the staff gage immediately below the Wallowa Falls Dam indicated that flows were approximately 44.77 cfs. Assuming that the diversion from Royal Purple Creek was flowing at full capacity (1 cfs), this would indicate natural inflow into the forebay was approximately 43.77 cfs during flushing.

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The following narrative provides a summary of dredging and flushing operations and key milestones:

July 24, 2017 – Hydrolab MS5 mini sondes were deployed in the East Fork Wallowa River upstream of the inlet to the Project Forebay and downstream of the Project dam at the compliance gage site. Sondes recorded top of the hour nephelometric turbidity units (NTU) through July 31, 2017. Turbidity data is provided at Attachment 1 to this letter report.

July 24, 2017 – The PacifiCorp fish biologist conducted fish salvage of Project tailrace per the final Fish Salvage plan dated May 2, 2017. The temporary fish passage barrier was also installed at tailrace outlet at that time.

July 24, 2017 – Contractor mobilized equipment and work crew to the Project forebay and closed the penstock intake gate and verified that the low level outlet sluice gate remained closed. The work crew consisted of two divers, one dive tender and three laborers.

July 24, 2017 – Upon delivery of equipment to the forebay, the work crew assembled a six inch dredge hose by connecting 100 foot long sections into a continuous 200 foot long hose that was installed over the dam spillway crest. The assembled dredge hose was secured in multiple places using rope. Approximately 40 feet of the hose was installed upstream of the spillway and the remaining 160 feet was installed over the spillway and continued down the spillway into the bypassed reach of the East Fork Wallowa River (Attachment 2 – Photos 1 and 2).

The siphon dredge hose was primed and started and the crew was able to dredge half-moon shaped areas extending approximately 15 feet upstream of the penstock intake and the low level sluice gates. Divers continued suction dredging at the low level sluice gate area and cleared the gate which was buried in more than four feet of sediment.

July 25, 2017 – Dive crew made a short dive and performed more suction dredging. Diving and dredging work was temporarily suspended and the low level sluice gate was hoisted and opened to the full open position. Material was flushed out through the low level sluice outlet for the remainder of the eight hour shift. The crew worked continuously to move and reconfigure large rocks within the forebay to direct stream flow into different areas of the forebay to facilitate sediment cutting and transport through the low level sluice outlet (Attachment 2 – Photos 3 and 4).

The low level sluice gate was partially closed to reduce the discharge of any sediment, but maintain the minimum flow release at the end of each 8-hour workday.

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July 26, 2017 – Although some material was exiting the forebay through gravity flushing, heavy granitic sand continued to be deposited and build up immediately upstream of the low level sluice gate. The low level sluice gate was again closed and a dive crew again suction dredged the area upstream of the penstock intake and low level outlet. The dive crew also used the suction dredge to dredge out several small channels, approximately three feet wide by 10 feet long, upstream of the larger dredged area (Attachment 2 – Photo 5). Dive work was suspended and the low level sluice gate was again hoisted to the full-open position. The combination of the dredged channels through the forebay and the crew continuing to move the current in the forebay using hand placement of large rocks to channel flows, made this period of flushing much more effective.

July 27, 2017 – July 28, 2017 - Continued same procedure of dive crew suction dredging out areas upstream of the intakes, and then opening the low level sluice gate periodically to concentrate material movement down towards that gate. This procedure proved to be the most effective way of moving the heavy granitic material downstream through the forebay and out the low level sluice outlet (Attachment 2 - Photos 6 and 7). All dredging work was completed July 28, 2017.

July 28, 2017 – Biologist walked the entire bypassed reach of the East Fork Wallowa River and visually monitored for stranded, distressed or dead fish. None were observed.

July 31, 2017 - Hydrolab MS5 mini sondes were removed from East Fork Wallowa River upstream and downstream locations.

This letter report and its attachments are being filed electronically. If you have any questions, please contact Briana Weatherly at 503-813-7039.

Sincerely,

Mark A. Sturtevant

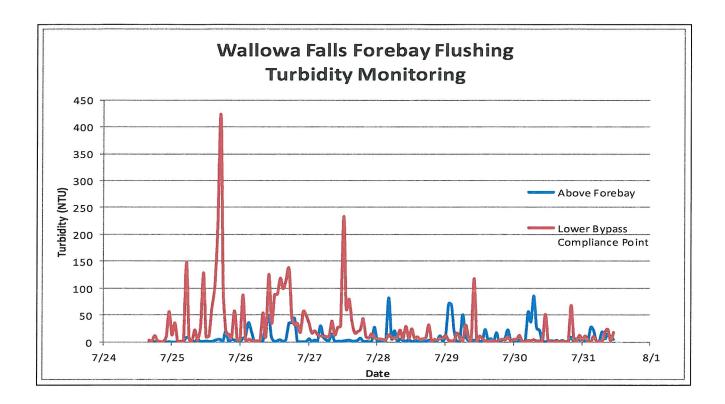
Managing Director, Renewable Resources

MAS:BW:km

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Encl:	Letter - Public
	Attachment 1 – Wallowa Falls 2017 Forebay Flushing Turbidity Data – Public
Attachment 2 – Wallowa Falls 2017 Forebay Flushing Photos - Public	

File:	Kimberly D. Bose, Secretary	eMail: John Dadoly, ODEQ
	Via eLibrary at	DADOLY.John@deq.state.or.us
	www.ferc.gov	
cc:	Gretchen Sausen, USFWS	cc: Dan Gonzalez, USFS
cc:	Curtis Booher, USFS	cc: Elizabeth Moats, ODFW



Turbidity (NTU)

	<b>A</b> In	Lauran Branana
	Above	Lower Bypass
Date	Forebay	Compliance Point
7/24/2017 16:00	0.6	2.7
7/24/2017 17:00	0.6	0
7/24/2017 18:00	0.6	11
7/24/2017 19:00	0.7	1.8
7/24/2017 20:00	0.2	0
7/24/2017 21:00	0.1	0
7/24/2017 22:00	0.1	8.9
7/24/2017 23:00	0.2	55.9
7/25/2017 0:00	0	12.4
7/25/2017 1:00	0.1	34.8
7/25/2017 2:00	0.1	0
7/25/2017 3:00	1.4	0
7/25/2017 4:00	0.8	0
7/25/2017 5:00	8.4	147.9
7/25/2017 6:00	6.9	5
7/25/2017 7:00	0.7	0
7/25/2017 8:00	0.9	21.6
7/25/2017 9:00	4.5	2.5
7/25/2017 10:00	0.9	28.6
7/25/2017 11:00	1.2	128
7/25/2017 12:00	1.9	9
7/25/2017 13:00	1.3	10
7/25/2017 14:00	1.2	62.9
7/25/2017 15:00	2.7	102.6
7/25/2017 16:00	4.8	214.9
7/25/2017 17:00	5	422
7/25/2017 18:00	1.8	96.5
7/25/2017 19:00	20.3	17.7
7/25/2017 20:00	1.8	13.8
7/25/2017 21:00	4.6	6.7
7/25/2017 22:00	3.8	57.6
7/25/2017 23:00	0.8	3.7
7/26/2017 0:00	0.7	3.3
7/26/2017 1:00	6.5	87
7/26/2017 2:00	11.3	1.3
7/26/2017 3:00	36	4.6
7/26/2017 4:00	20	2.1
7/26/2017 5:00	1.7	1.3
7/26/2017 6:00	1.1	1.2
7/26/2017 7:00	2.2	2.1
7/26/2017 8:00	0.9	53.4
7/26/2017 9:00	37.1	8.9
7/26/2017 10:00	49	125
7/26/2017 11:00	8.6	34.5
7/26/2017 12:00	1.2	87
7/26/2017 13:00	2.5	87.9
7/26/2017 14:00	4.2	117.8

Turbidity (NTU)

Above Lower Bypa

	Above	Lower Bypass
Date	Forebay	Compliance Point
7/26/2017 15:00	1.5	98.1
7/26/2017 16:00	4.2	114.7
7/26/2017 17:00	34.3	135.1
7/26/2017 18:00	36	43.5
7/26/2017 19:00	43.9	31.3
7/26/2017 20:00	1	33.8
7/26/2017 21:00	0.7	17.1
7/26/2017 22:00	0.7	56
7/26/2017 23:00	0.7	47.8
7/27/2017 0:00	6.3	33.9
7/27/2017 1:00	1.3	16.1
7/27/2017 2:00	3.9	19.8
7/27/2017 3:00	1.4	13.1
7/27/2017 4:00	29.8	10.1
7/27/2017 5:00	9.6	10.6
7/27/2017 6:00	4	9.3
7/27/2017 7:00	2.6	9.2
7/27/2017 8:00	15	38.1
7/27/2017 9:00	1.4	12.1
7/27/2017 10:00	1.8	26.6
7/27/2017 11:00	1.5	29.3
7/27/2017 12:00	2	233
7/27/2017 13:00	3	60.6
7/27/2017 14:00	3.7	79.1
7/27/2017 15:00	2	37.5
7/27/2017 16:00	1.8	16.1
7/27/2017 17:00	3	18.6
7/27/2017 18:00	7.5	22.6
7/27/2017 19:00	1.5	43
7/27/2017 20:00	1.2	9.5
7/27/2017 21:00	1	6.2
7/27/2017 22:00	0.7	15
7/27/2017 23:00	27.5	6.8
7/28/2017 0:00	1	5.4
7/28/2017 1:00	2.1	5.1
7/28/2017 2:00	2.8	4.2
7/28/2017 3:00	3.4	3.3
7/28/2017 4:00	82	12.7
7/28/2017 5:00	6.7	6.8
7/28/2017 6:00	21	6.6
7/28/2017 7:00	1.8	6.8
7/28/2017 8:00	5.7	21.5
7/28/2017 9:00	3	5.7
7/28/2017 10:00	1.8	28.3
7/28/2017 11:00	4.2	6
7/28/2017 12:00	1.3	23.9
7/28/2017 13:00	2	5.8

Turbidity (NTU)

	Above	Lower Bypass
Date	Forebay	Compliance Point
7/28/2017 14:00	2	8.8
7/28/2017 14:00	1.5	3.8
7/28/2017 15:00	2.4	5.5
7/28/2017 10:00	1.3	7.3
7/28/2017 17:00	3.5	31.2
7/28/2017 19:00	2.5	0.7
7/28/2017 13:00	1.7	4.2
7/28/2017 20:00	2.2	3.3
7/28/2017 22:00	12	5.7
7/28/2017 23:00	1.4	6.5
7/29/2017 0:00	13.7	11.5
7/29/2017 1:00	71.1	2.2
7/29/2017 2:00	69.1	1.6
7/29/2017 3:00	20	2.4
7/29/2017 4:00	0.3	15.8
7/29/2017 5:00	2.4	5.8
7/29/2017 6:00	51.1	0.7
7/29/2017 7:00	10.8	30.6
7/29/2017 8:00	3.3	10
7/29/2017 9:00	4.4	1.1
7/29/2017 10:00	3	117.4
7/29/2017 11:00	5.3	0
7/29/2017 12:00	0.8	10.1
7/29/2017 13:00	3	5.1
7/29/2017 14:00	23.3	1.2
7/29/2017 15:00	4	0.1
7/29/2017 16:00	6.4	1.3
7/29/2017 17:00	1.4	1.6
7/29/2017 18:00	17.5	0.5
7/29/2017 19:00	0.9	2.6
7/29/2017 20:00	3.9	4.6
7/29/2017 21:00	6	2.8
7/29/2017 22:00	22.5	8.4
7/29/2017 23:00	8.0	0.8
7/30/2017 0:00	1	4.4
7/30/2017 1:00	2.4	4.1
7/30/2017 2:00	3.2	11.7
7/30/2017 3:00	2	0.2
7/30/2017 4:00	1.1	0
7/30/2017 5:00	55.7	2.1
7/30/2017 6:00	37.6	1.9
7/30/2017 7:00	85.5	3.8
7/30/2017 8:00	25.9	1.1
7/30/2017 9:00	22.3	1.6
7/30/2017 10:00	0.6	0
7/30/2017 11:00	1	50.8
7/30/2017 12:00	1.5	0

Turbidity (NTU)

Above Lower Bypa

	Above	Lower Bypass
Date	Forebay	<b>Compliance Point</b>
7/30/2017 13:00	2.7	0
		0
7/30/2017 14:00	1.5	0
7/30/2017 15:00	3.3	1.3
7/30/2017 16:00	1.3	0
7/30/2017 17:00	3	0.4
7/30/2017 18:00	0.9	0.1
7/30/2017 19:00	2.2	0.2
7/30/2017 20:00	9.1	67.5
7/30/2017 21:00	1.9	3.3
7/30/2017 22:00	6.6	0
7/30/2017 23:00	3.6	11.5
7/31/2017 0:00	4.1	2.9
7/31/2017 1:00	1.9	10.8
7/31/2017 2:00	2.7	0
7/31/2017 3:00	27.5	0
7/31/2017 4:00	21.6	9.5
7/31/2017 5:00	1.1	0
7/31/2017 6:00	1.8	0.7
7/31/2017 7:00	19	0
7/31/2017 8:00	5.9	17.6
7/31/2017 9:00	15.6	22.7
7/31/2017 10:00	10	1.5
7/31/2017 11:00	5	17

## Attachment 2: Wallowa Falls 2017 Forebay Flushing Photos



Photo 1- Dredge hose installed over spillway



Photo 2 – Dredge hose upstream of penstock intake

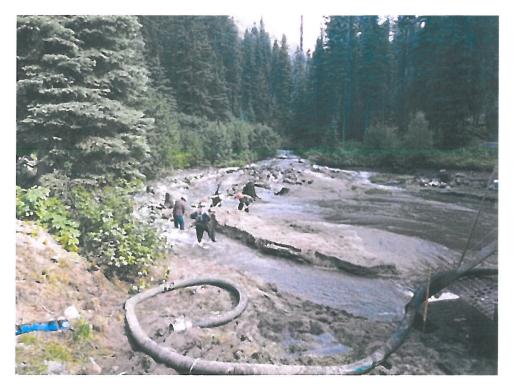


Photo 3-Crew working to direct stream flow for sediment transport



Photo 4 – Stream flow through forebay redirected using rocks in forebay



Photo 5 – Channels dredged out to increase sediment transport out of forebay



Photo 6 –Forebay after dredging and flushing operation



Photo 7 – Penstock intake and low level outlet trash rack after dredging and flushing operation