

**U.S. ARMY CORPS OF ENGINEERS  
WALLA WALLA DISTRICT  
FISH FACILITIES WEEKLY REPORT  
#33-2018**

**Project: McNary**

Biologist: Bobby Johnson and Denise Griffith

Dates: October 12 to 18, 2018

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**Turbine Operation**

Yes	No	Turbine Unit Status	Hard	Soft
	X	All 14 turbine units available for service. (See Table 1 & comments below).		
X		Available turbines operated within 1% peak efficiency? Constraint in effect.	X	

Table 1. McNary Unit Outages (OOS) and Return to Service (RTS)

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
6	10/01	0740	12/04	NA	Nine year overhaul.
7, 8 & 12	10/16	0955	10/16	1052	Rotated outages for ESBS camera inspections.

Comments: There are no problems to report.

**Adult Fish Passage Facilities**

McNary fisheries biologists performed adult fishways measured inspections on October 12, 14 and 17. Adult fish counting continued.

Fish Ladder Exits:

Yes	No	Location	Criteria	Comments
X		Oregon Exit	Head over weir 1.0' to 1.3'	
X		Oregon Count Station Differential	0.0' to 0.5'	
X		Washington Exit	Head over weir 1.0' to 1.3'	
X		Washington Count Station Differential	0.0' to 0.5'	

Comments: Debris loads were minimal to moderate near the Oregon ladder exit and minimal to light near the Washington ladder exit. The debris consist of woody material and aquatic vegetation. Picketed leads and trash racks were cleaned by the general maintenance staff as needed, including Saturday.

At the Washington exit, on October 17, three picketed lead differential alarms came in, which were reset after the leads were cleaned.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Comments
X			North Oregon Entrance Head Differential	1.0' – 2.0'	
X			NFEW2 Weir Depth	≥ 8.0'	
X			NFEW3 Weir Depth	≥ 8.0'	
X			South Oregon Entrance Head Differential	1.0' – 2.0'	
X			SFEW1 Weir Depth	≥ 8.0'	
X			SFEW2 Weir Depth	≥ 8.0'	
X			Oregon Collection Channel Velocities	1.5 to 4.0 fps	Averaged 2.2 fps.
X			Washington Entrance Head Differential	1.0' – 2.0'	
X			WFE2 Weir Depth	≥ 8.0'	
X			WFE3 Weir Depth	≥ 8.0'	

Comments: There are no problems to report.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
X			WA shore Wasco County PUD Turbine Unit.
	X		WA shore Wasco PUD Bypass.
X			Oregon Ladder Fish Pump 1, Blade angle: 22.
X			Oregon Ladder Fish Pump 2, Blade angle: 20 to 21.
X			Oregon Ladder Fish Pump 3, Blade angle: 22.
X			OR North Powerhouse Pool supply from juvenile fishway.

Comments: There are no problems to report.

**Juvenile Fish Passage Facility**

Partial winterization, maintenance and cleaning continued at the juvenile fish facility.

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Minimal to light near powerhouse.
X			Trash rack differentials measured this week?	Daily.
X			Trash rack differentials acceptable?	
	X		Any debris seen in gatewells? (% coverage)	
	X		Any oil seen in gatewells?	

Comments: The forebay debris loads near the powerhouse were minimal to light. Debris accumulations along the spillway were minimal. New incoming debris loads were minimal. Most woody material moved back and forth along the Oregon shoreline.

No trash racks were cleaned and no problems were noted in the gatewell slots this week.

Extended-length submersible bar screen (ESBSs)/Vertical barrier screen (VBSs):

Yes	No	NA	Item
X			ESBSs deployed in all slots and in service?
X			ESBSs inspected this week?
X			ESBSs inspection results acceptable?
X			VBSs differentials checked this week?
X			VBSs differentials acceptable?

Comments: The brush cycles for the screens in 3A, 3C and 4A slots remained in timer mode. ESBSs were inspected in units 7, 8 and 12 with no problems found. Before the inspection, for an unknown reason, unit 8 ESBSs had to be reset.

VBS differential monitoring occurred daily. No high differentials were measured. Five screens were cleaned on October 17. The cleaning was interrupted due to issues with the crane. No fish mortalities were noted.

Orifices, Collection Channel, Dewatering Structure, and Bypass Pipe:

Yes	No	NA	Item	Number of orifices in service
X			Orifices operating satisfactory?	42
X			Dewatering and cleaning systems operating satisfactory?	

Comments: Orifices were adjusted for the VBS cleaning as required. One low water alarm came in while adjusting the orifices. On October 12, the orifice in 12B slot was found closed. The orifice was closed for approximately 5.5 hours. Orifice checks and cycling protocols were reviewed with the staff.

Area lighting and orifice operator air leaks were replaced or repaired as required. Scheduled maintenance occurred on the channel hoist on October 17.

Bypass Facility:

Yes	No	NA	Item
		X	Sample gates on?
		X	PIT-tag sampling system on? (Remain off unless a study is occurring.)

Comments: All systems are out of service as winter maintenance begins. Plumbing no longer in use was removed from the wet lab and the sampling trough was repainted this week.

TSW Operations: The TSWs remained out of service.

**River Conditions**

Table 2. River Conditions at McNary Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature (°F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
96.5	76.7	0.0	0.0	61.0	59.0	6.0	6.0

Comments: The above data is supplied by McNary control room. Spillway hoist maintenance continued.

**Other**

Inline Cooling Water Strainers: The next cooling water strainer examinations will occur in December.

Avian Activity: Casual avian observations were made during other inspections.

Pelicans and terns were not observed on project this week. Gull and cormorant numbers appeared to fluctuate with the juvenile shad outmigration. Gulls were feeding in the powerhouse flow along with cormorants at the outfall. Both species were roosting on structures around the tailwater area.

Gull flocks, cormorants, blue herons and grebes were occasionally noted in the forebay area. Grebes were not observed elsewhere. A few cormorants and gulls were roosting on the rocks by the Washington shore boat dock.

Large gull flocks were noted roosting around the project outside the observation zones.

Invasive Species: The next mussel station examinations will occur in late October.

Fish Rescue/Salvage: None occurred.

Research: The University of Idaho adult lamprey passage telemetry study continued.

**Project: Ice Harbor**  
 Biologist: Ken Fone  
 Dates: October 12-18, 2018

**Turbine Operation**

Yes	No	Turbine Unit Status	Hard	Soft
	X	All 6 turbine units available for service (see table & comments below for details).		
X		Available turbines operated within 1% peak efficiency? Constraint in effect.	X	

Ice Harbor Unit Outages (OOS) and Return to Service (RTS).

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
2	4/25/16	0606	---	---	Runner replacement
4	9/20/18	1619	---	---	Investigate for possible oil leak
6	10/15/18	0749	10/15/18	1352	STS inspection and spillway bridge inspection
1	10/17/18	0827	10/17/18	1603	STS inspection and repairs

Comments: Units 6, 5, 3, and 1 were taken out of service one at a time for STS inspections on October 15, 16, and 17. The units were operated out of priority order when unit 6 was operated ahead of unit 3 from 2102 hours on October 12 to 0004 hours on October 13. Unit 3 was on standby during that period due to a problem with the head cover pumps.

**Adult Fish Passage Facility**

Ice Harbor fish facility staff inspected the adult fishways on October 15, 17, and 18.

Fish Ladders:

Yes	No	Location	Criteria	Measurements
X		North Ladder Exit Differential	Head $\leq$ 0.3'	
X		North Ladder Picketed Lead Differential	Head $\leq$ 0.3'	
X		North Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	
X		South Ladder Exit Differential	Head $\leq$ 0.3'	
X		South Ladder Picketed Lead Differential	Head $\leq$ 0.3'	
X		South Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			South Shore Entrance (SFE-1) Weir Depth	$\geq$ 8.0' or on sill	
X			South Shore Channel/Tailwater Differential	1.0' – 2.0'	
X			South Shore Channel Velocity	1.5 – 4.0 fps	
X			North Powerhouse Entrance (NFE-2) Weir Depth	$\geq$ 8.0' or on sill	
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0' – 2.0'	
X			North Shore Entrance (NEW-1) Weir Depth	$\geq$ 8.0' or on sill	
X			North Shore Channel/Tailwater Differential	1.0' – 2.0'	

Comments: None.

Auxiliary Water Supply (AWS) System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
5 pumps	3 pumps		Status of the 8 South Shore AWS Pumps
2 pumps	1 pump		Status of the 3 North Shore AWS Pumps

Comments: None.

**Juvenile Fish Passage Facility**

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	37 square yard
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 to 7%
	X		Any oil seen in gatewells?	

Comments: None.

STSs/VBSs:

Yes	No	NA	Item
	X		STSs deployed in all slots and in service?
	X		STSs in continuous-run mode (Note: if not, then STSs are in cycle-run mode)?
X			STSs inspected this week?
	X		STSs inspection results acceptable?
		X	VBSs differentials checked this week?
		X	VBSs differentials acceptable?

Comments: The STSs are in cycle-run mode. Unit 6, 5, 4, 3, and 1 STSs were inspected on October 15, 16, and 17. The STS in slot 1C had a damaged power cable from the orifice gate closing on the cable. The STS in slot 1A had a 3' long tear in the mesh. Fortunately the tear did not create a wide enough opening for fish to enter. The 1C STS was replaced and the 1A STS was patched immediately following the inspection.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	20
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: None.

Juvenile Fish Facility: The fish facility is being operated in primary bypass.

Fish Sampling: Sampling is done for the year.

Removable Spillway Weir (RSW): Voluntary spill for fish passage is done for the year.

**River Conditions**

River conditions at Ice Harbor Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (°F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
26.3	12.5	0	0	62	60	8.5	6.7

\*Unit 1 scroll case temperature.

## **Other**

Inline Cooling Water Strainers: Monthly inspections for lamprey ended in June and will start up again in December.

Avian Activity: There were low amounts of pelicans and gulls, and moderate amounts of cormorants observed around the project. Most of the cormorants were observed roosting on Eagle Island, with some foraging downstream of the powerhouse.

Invasive Species: No exotic species that are new to the area have been found.

Siberian Prawn: Siberian prawns collected in the sample at the Juvenile Fish Facility are humanely euthanized by Anchor, frozen and properly disposed of in a landfill. Sampling is done for the year.

Fish Rescue/Salvage: On October 17, a juvenile white sturgeon was spotted in a pool of water contained in the side of one of the tailrace stop logs that had been removed from unit 4 about 3 weeks earlier. The sturgeon was rescued and released to the river in good condition.

Research: There is no on-site research occurring at this time.

**Project: Lower Monumental**

Biologists: Chuck Barnes and Raymond Addis

Dates: October 12 - 18, 2018

**Turbine Operation**

Yes	No	Turbine Unit Status		
	X	All 6 turbine units available for service (see table & comments below for details).	<b>Hard</b>	<b>Soft</b>
X		Available turbines operated within 1% peak efficiency? Constraint in effect.	X	

Lower Monumental Unit Outages (OOS) and Return to Service (RTS)

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
Unit 1	12/10/2014		10/26/2018	ERTS	Rehabilitation Overhaul
Unit 2	10/15/2018	0715	10/15/2018	1510	Hub Tapping
Unit 3	6/25/2018	0700	10/18/2018	1525	6 Year Overhaul
Unit 4	9/19/2018	1600	12/28/18	ERTS	Inspection of Oil Governor System/Blade Seal Replacement

Comments: Units went into Hard Constraint at 0001 on April 1.

**Adult Fish Passage Facility**

The adult fishways were inspected by Corps biologists on October 15, 17 and 18.

Fish Ladder:

Yes	No	Location	Criteria	Measurements
X		North Ladder Exit Differential	Head $\leq$ 0.5'	
X		North Ladder Picketed Lead Differential	Head $\leq$ 0.4'	
X		North Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	
X		South Ladder Exit Differential	Head $\leq$ 0.5'	
X		South Ladder Picketed Lead Differential	Head $\leq$ 0.3'	
X		South Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	

Comments: None.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			North Shore Entrance (NSE-1) Weir Depth	$\geq$ 8.0' or on sill	
X			North Shore Entrance (NSE-2) Weir Depth	$\geq$ 8.0' or on sill	
X			North Shore Channel/Tailwater Differential	1.0'-2.0'	
		X	South Powerhouse Entrance (SPE-1) Weir Depth	$\geq$ 8.0' or on sill	
		X	South Powerhouse Entrance (SPE-2) Weir Depth	$\geq$ 8.0' or on sill	
	X		South Powerhouse Entrance Channel/Tailwater Differential	1.0'-2.0'	
X			South Shore Entrance (SSE-1) Weir Depth	$\geq$ 8.0'	
X			South Shore Entrance (SSE-2) Weir Depth	$\geq$ 6.0'	
X			South Shore Channel/Tailwater Differential	1.0' - 2.0'	

Comments:

South Powerhouse Entrance (SPE-1) was at sill during all inspections with readings of 7.0, 6.9 and 7.1 feet respectively.

South Powerhouse Entrance (SPE-2) was at sill during all inspections with readings of 7.0, 6.9 and 7.1 feet respectively.

South Powerhouse Entrance Channel/Tailwater Differential was out of criteria on the October 18 inspection with a reading of 0.8 feet. The powerhouse operator was informed and the automatic system was adjusted.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
No		X	AWS Fish Pump 1
Yes			AWS Fish Pump 2
Yes			AWS Fish Pump 3

Comments: AWS Fish Pump 1 is out of service for seized Wicket Gate Bushings. There is no current estimated return to service date.

**Juvenile Fish Passage Facility**

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	1340 sq yd average
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 - 15%
	X		Any oil seen in gatewells?	

Comments: None.

STSs/VBSs:

Yes	No	NA	Item
X			STSs deployed in all slots and in service?
	X		STSs in continuous-run mode (Note: if not, then STSs are in cycle-run mode)?
	X		STSs inspected this week?
		X	STSs inspection results acceptable?
		X	VBSs differentials checked this week?
		X	VBSs differentials acceptable?

Comments: STS's operating on cycle mode due to average sub-yearling Chinook and sockeye lengths being greater than 120 mm.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	18
	X		Dewaterer and cleaning systems operating satisfactory?	

Comments: PDW mechanical cleaning brush was turned off on weekend days in case of faults. The run frequency of the bubbler debris removal system was increased to keep the screen clear of debris.

Collection Facility: Collection for truck transport ended at 0700 on October 1 and the facility operation was changed to primary bypass. The facility was dewatered at 1230 on October 3 for cleaning and winter maintenance.

Transport Summary: Alternate day trucking ended at 0700 on October 1



Spillway Weir: RSW went into service when Spring Spill began at 0001 on April 3. RSW was closed at 1245 on August 8 due to TMT decision. Summer Spill ended at 00:00:00 on September 1.

**River Conditions**

River conditions at Lower Monumental Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature (°F)*		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
19.8	13.4	0	0	60.0	59.0	6.0	5.4

\*Scroll case temperatures.

**Other**

Inline Cooling Water Strainers: Cooling water strainers are not inspected in October.

Avian Activity: The piscivorous bird species observed during fish ladder inspections ended on October 1. Bird hazing efforts by USDA personnel ended at 2000 on June 2. Tailrace observations for bird hazing effectiveness ended with the June 30 observation.

Outfall pipe bird water cannons were turned off on June 11, due to a damaged water cannon at pipe exit. The standby set of cannons have a missing water cannon and were already out of service.

Invasive Species: No zebra or quagga mussels were observed during monitoring station inspections on October 1.

Fish Rescue/Salvage: No fish rescue during this reporting period.

Research: No onsite research is in progress at this time.

**Project: Little Goose**

Biologists: Scott St. John and Richard Weis

Dates: October 12-18, 2018

**Turbine Operation**

Yes	No	Turbine Unit Status		
	X	All 6 turbine units available for service (see table & comments below for details).	<b>Hard</b>	<b>Soft</b>
X		Available turbines operated within 1% peak efficiency? Constraint in effect.	X	

**Little Goose Unit Outages (OOS) and Return to Service (RTS)**

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
5	04/14/17	14:11	11/16/18	17:00	Spider and upper guide bearing repair.
2	10/01/18	07:00	10/22/18	17:00	Unit Annual
1	10/09/18	19:00	10/18/18	17:31	T1 Transformer Bushing
3 & 4	10/09/18	19:00	10/12/18	19:18	T1 Transformer Bushing
All	10/12/18	07:04	10/12/18	19:18	Line Outage for T1 Transformer Work
All	10/17/18	07:34	10/17/18	19:12	Line Outage for T1 Transformer Work

Comments: Little Goose Dam conducted repair work on the through bushing between Unit 1 and the T1 transformer during this report period. This required Little Goose to keep the T1 transformer offline, therefore leaving Unit 6 as the only available unit for operation due to buss configuration. Little Goose was able to disconnect Unit 1 and Unit 2 from the T1 transformer on October 12, allowing the operation of Unit 3 and Unit 4 through the T1 transformer. For additional information, see recent MFR's.

**Adult Fish Passage Facility**

Little Goose fish facility and Anchor QEA staff inspected the adult fishway on October 14, 16 and 18.

Fish Ladder:

Yes	No	NA	Location	Criteria	Measurements
X			Fish Ladder Exit Differential	Head $\leq$ 0.5'	
X			Fish Ladder Picketed Lead Differential	Head $\leq$ 0.3'	
X			Fish Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	
	X		Fish Ladder Cooling Water Pumps in Service		
		X	Fish Ladder Exit Cooling Water Pumps Operating Satisfactorily		

Comments: None.

Fishway Entrances and Collection Channel

Yes	No	Sill	Location	Criteria	Measurements
X			South Shore Entrance (SSE-1) Weir Depth	$\geq$ 8.0'	
X			South Shore Entrance (SSE-2) Weir Depth	$\geq$ 8.0'	
X			South Shore Channel/Tailwater Differential	1.0' – 2.0'	
		X	North Powerhouse Entrance (NPE-1) Weir Depth	$\geq$ 7.0' or on sill	
		X	North Powerhouse Entrance (NPE-2) Weir Depth	$\geq$ 7.0' or on sill	
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0'–2.0'	
X			North Shore Entrance (NSE-1) Weir Depth	$\geq$ 6.0' or on sill	
X			North Shore Entrance (NSE-2) Weir Depth	$\geq$ 6.0' or on sill	
X			North Shore Channel/Tailwater Differential	1.0'–2.0'	
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: Adult fishway control system is currently operating in manual mode. Fishway is currently operating within criteria.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
X			AWS Fish Pump 1
X			AWS Fish Pump 2
X			AWS Fish Pump 3

Comments: None.

**Juvenile Fish Passage Facility**

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comment
X			Forebay debris load acceptable? (amount)	
	X		Gatewell drawdown measured this week?	
		X	Gatewell drawdown acceptable	
	X		Any debris seen in gatewells (% coverage)	
	X		Any oil seen in gatewells?	

Comments: There is currently 900 sq. ft. of floating woody debris inside the trash shear boom in the forebay.

ESBS/VBS:

Yes	No	NA	Item
X			ESBSs deployed in all slots and in service?
	X		ESBSs inspected this week?
		X	ESBSs inspection results acceptable?
	X		VBSs differentials checked this week?
		X	VBSs differentials acceptable?
	X		VBSs inspected this week?

Comments: VBS differentials were measured October 04 on units 1 and 3 and were in criteria.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	20
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: None.

Collection Facility: Juvenile fish facility is currently operating. Little Goose resumed juvenile fish transport on October 15 with a truck leaving every other day (MFR 18LGS21).

Transport Summary: The collection and transportation facility operated within criteria this report period. A total of 132 fish were collected, and 5 were by-passed back to river. The descaling and mortality rates were 1.9% and 0.8% respectively. A total of 0 adult lamprey were removed from the separator and sample and released one mile above the Dam at Little Goose Landing.

Spillway Weir: Adjustable spillway weir was closed for the season on August 03 at 15:30.

## River Conditions

River conditions at Little Goose Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (°F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
23.8	13.9	3.5	0.0	60.8	60.1	6.0	4.6

\*Ladder temperature.

## Other

Inline Cooling Water Strainers: Inline cooling strainers are being inspected and results submitted every other week.

Avian Activity: Average daily piscivorous bird counts by zone for the report period at Little Goose Dam.

Zone	Gull	Cormorant	Tern	Pelican	Grebe
Unmodified boat barrier	0	0	0	0	0
Modified boat barrier*	0	0	0	0	0
Forebay debris	0	0	0	0	0
Trash/shear boom	0	0	0	0	0
Forebay count	17	15	0	0	5
Tailrace count	18	3	0	0	5

\*modified and unmodified boat barrier section was removed on 7 buoys directly upstream of the ASW.

Invasive Species: No invasive species have been observed on the mussel station.

Siberian Prawn: Siberian prawns collected in the sample at the Juvenile Fish Facility are humanely euthanized by Oregon Department of Fish and Wildlife and Anchor, frozen and properly disposed of in a landfill. Daily and total Siberian prawn counts at Little Goose Dam for this reporting period are reported below.

Date	Sample (euthanized)	Collection*
10-12	33	33
10-13	0	0
10-14	31	31
10-15	19	19
10-16	22	22
10-17	28	28
10-18	25	25
<b>Total</b>	<b>158</b>	<b>158</b>

\*Collection and sample numbers are the same as the facility when sampling at 100%

Gas Bubble Trauma (GBT): GBT monitoring ended for the year.

Fish Rescue/Salvage: None.

Research: None.

**Project: Lower Granite**

Biologists: Elizabeth Holdren and Stephen Hampton

Dates: October 12 – October 18, 2018

**Turbine Operation**

Yes	No	Turbine Unit Status		
	X	All 6 turbine units available for service (see table & comments below for details).	<b>Hard</b>	<b>Soft</b>
X		Available turbines operated within 1% peak efficiency? Constraint in effect.	X	

## Lower Granite Unit Outages (OOS) and Return to Service (RTS)

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
3	Oct 1	0700			Annual Maintenance and Digital Governor Upgrade

Comments: None.

**Adult Fish Passage Facility**

Lower Granite and Anchor QEA staff inspected the adult fishway on October 13, 14, 15, and 17.

Fish Ladder:

Yes	No	NA	Location	Criteria	Measurements
X			Fish Ladder Exit Differential	Head $\leq$ 0.5'	
X			Fish Ladder Picketed Lead Differential	Head $\leq$ 0.3'	
X			Fish Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	
	X		Fish Ladder Cooling Water Pumps in Service		
		X	Fish Ladder Cooling Water Pumps Operating Satisfactorily		

Comments: None.

Fish Ladder Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			South Shore Entrance (SSE-1) Weir Depth	$\geq$ 8.0'	
X			South Shore Entrance (SSE-2) Weir Depth	$\geq$ 8.0'	
X			South Shore Channel/Tailwater Differential	1.0' – 2.0'	
X		X	North Powerhouse Entrance (NPE-1) Weir Depth	$\geq$ 8.0' or on sill	
X		X	North Powerhouse Entrance (NPE-2) Weir Depth	$\geq$ 8.0' or on sill	
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0' – 2.0'	
X			North Shore Entrance (NSE-1) Weir Depth	$\geq$ 7.0' or on sill	
			North Shore Entrance (NSE-2) Weir Depth	$\geq$ 7.0' or on sill	OOS
X			North Shore Channel/Tailwater Differential	1.0' – 2.0'	
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: NPE 2 gate set point for sill position is 628.2 feet to prevent cable spooling though the actual gate elevation is on sill at 628.0 feet.

Auxiliary Water Supply System:

Operating Satisfactorily	Standby	Out of Service	Auxiliary Water Supply (AWS)
X			AWS Fish Pump 1
X			AWS Fish Pump 2
	X		AWS Fish Pump 3

Comments: None.

**Juvenile Fish Passage Facility**

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	42.5 yds
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
	X		Any debris seen in gatewells (% coverage)	
	X		Any oil seen in gatewells?	

Comments: None.

ESBSs/VBSs:

Yes	No	NA	Item
X			ESBSs deployed in all slots and in service?
	X		ESBSs inspected this week?
		X	ESBSs inspection results acceptable?
X			VBSs differentials checked this week?
X			VBSs differentials acceptable?

Comments: None.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	18
	X		Dewaterer and cleaning systems operating satisfactory?	

Comments: Primary dewaterer floor screen brushes, side screen brushes, and the pneumatic screen cleaners are being operated in manual mode by powerhouse operators due to mechanical and programming issues with the new system. Overflow weirs in groups A, B, and C remain in auto; weir group D continues to be operated in manual to achieve optimal flow from the PDW to the transport flume. Problems are being investigated and troubleshooting the system for needed repairs during the winter outage is ongoing. Orifice light 5CS failed October 13 and light 6CS failed October 14. Both lights were repaired and in criteria by 1000 hours October 15. Units 4 and 5 orifices were unintentionally closed by contractor October 17 causing reduced water level at separator. Immediate actions were taken to stabilize the separator and restore orifice operations. No fish were injured.

Collection Facility: Operational modifications continue as needed. Fish were bypassed from 2020-2040 hours October 17 due to PIT-tag system power unit failure.

Transport Summary: Every other day truck transport to below Bonneville Dam continues.

Spill/Spillway Weir: Spillway gates annual testing was performed on bays 2,3,4,7 and 8 one at a time from 1210-1326 hours October 15.

## River Conditions

River conditions at Lower Granite Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (°F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
21.9	15.5	0	0	60.5	58.0	5.0+	5.0+

\*Cooling water intake temperature.

## Other

Inline Cooling Water Strainers: N/A

Invasive Species: No mussels were present on the October 16 inspection. During the reporting period 49 Siberian prawns were euthanized and 23 Siberian prawn mortalities were collected in the condition sample.

Siberian Prawn:

Date	10/12/2018	10/13/2018	10/14/2018	10/15/2018	10/16/2018	10/17/2018	10/18/2018
<b>Euthanized</b>	6	1	9	2	19	3	9
<b>Dead</b>	4	0	5	3	5	1	5

Avian Activity: Biologist daily piscivorous bird counts at Lower Granite Dam.

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
10/12/2018	15:35	10	31	0	0
10/13/2018	13:45	8	36	0	0
10/14/2018	13:35	11	37	0	0
10/15/2018	13:20	8	41	0	0
10/16/2018	13:09	10	39	0	0
10/17/2018	11:44	10	33	0	0
10/18/2018	12:50	9	38	0	0

Gas Bubble Trauma (GBT) Monitoring: N/A.

Adult Fish Trap Operations: The adult trap is operating seven days a week with a 20% sample rate for WDFW and Nez Perce hatcheries brood stock collection.

Fish Rescue/Salvage: N/A

Research: N/A