

**U.S. Army Corps of Engineers
Steve Burrell, CENWD-PDW-RC**

18 August 2010

SUBJECT: Lower Snake Project - Navigation Issues Associated with Late Season Spill Operations

MEMORANDUM For Distribution: Tim Dykstra (NWW), Greg Moody (NWW)

This memorandum describes navigation issues encountered by tug boat operators during the first two week period in August, and was requested at the August 12, 2010 FPOM meeting by FPOM. The tables and figures below summarize incidents at Lower Monumental and Lower Granite dams during low spill conditions. The RCC recognizes and is grateful for the assistance of Mr. Brian Fletcher of Tidewater barging in preparation of this summary.

Data in Table 1 show the spill settings and incidence that have occurred at Lower Monumental Dam prior to implementing a more navigation friendly spill pattern. The table lists date and time of incident, the tug boat name, owner of the tug boat, a brief description of the barges in tow, total spill discharge, the spill bays in use for the discharge, the discharge for power generation, the generation unit in use at the reported incident time, and a reference number for notes following the table that provide incident details. The first section of the table is for the pre-navigation friendly spill, and the second table section is for the uniform, navigation friendly spill specified by RCC at approximately 1200 on 12 August, 2010.

Table 2 is the same as Table 1, but for Lower Granite. The incidence at Lower Granite will be further revised as detailed incident reports become available.

Table 1. Recent Lower Monumental Navigation Incidents during Low Spill

LOWER MONUMENTAL TUG/TOW INCIDENT SUMMARY PRIOR TO UNIFORM SPILL SPECIAL OPERATIONS													
DATE/TIME	TUG	OWNER ENTITY	TOW	TOTAL SPILL DISCH. (kcfs)	SPILL DISCHARGE (kcfs)						POWER DISHC. (kcfs)	GEN. UNIT NO.	INCIDENT REF. NOTE
					SPILL BAY NUMBER								
					1	6	8 (RSW)						
05AUG2010 19:10	Defiance	Tidewater	1 full (840,000 gal LSD), 4 empty	13.57	3.86	6.40	7.17				16	5	1
08AUG2010 unknown time	Capt Bob	Tidewater	1 full (wood products), 3 empty	11.03	3.86	0.00	7.17				14.4	5	2
10AUG2010 02:25	Defiance	Tidewater	1 empty	10.19	3.02	0.00	7.17				14.4	5	3
10AUG2010 05:30	Cascade	Shaver	2 empty	10.06	2.99	0.00	7.17				14.4	5	4
11AUG2010 19:30	Hurricane	Tidewater	4 empty	17.54	4.01	6.36	7.17				14.3	5	5
LOWER MONUMENTAL TUG/TOW INCIDENT SUMMARY AFTER UNIFORM SPILL SPECIAL OPERATIONS													
					SPILL BAY NUMBER								
					1	2	3	4	5	6			
12AUG2010 12:00	Outlaw	Tidewater	4 empty	10.20	0.64	1.96	1.87	1.88	1.94	1.91	14.3	5	6

Incident Descriptions (number referenced in last column of Table 1)

1. Upon approach to the lower basin (lock entrance), eddy currents forced the bow of the tow towards the outer (north) guide wall. The tug had to burn to get the tow around the corner of the guide wall and safely into the lower basin. Figure 1 shown on page 4 shows the angle of the barges on the approach.
2. Tug Capt. Bob also had a full tow but with a loaded chip barge (wood product). Capt. Bob had basically the same approach as Defiance incident in 1.), above. The operator had to steer towards the south bank to keep the bow of the tow on the good side of the lower basin. This action forces the stern section of the tow to swing to the north which produces the angle you see in the diagram (Figure 1).
3. Similar set by eddy towards guide wall 2 and 3 above, but no difficulty in entering lower basin.
4. On approach, the tow was pulled into the guide wall by eddy current. The port bow of the barge sustained a seven-inch long puncture, but proceeded through lockage for repairs at destination. No damage reported to guide wall. Angle of approach similar to Figure 1, but with tow bow impacting guide wall before entering.
5. No difficulties reported.
6. No difficulties reported – “mill pond conditions”.

Table 2. Recent Lower Monumental Navigation Incidents during Low Spill

LOWER GRANITE TUG/TOW INCIDENT SUMMARY PRIOR TO UNIFORM SPILL SPECIAL OPERATIONS													
DATE/TIME	TUG	OWNER ENTITY	TOW	TOTAL SPILL DISCH. (kcfs)	SPILL DISCHARGE (kcfs)						POWER DISCH. (kcfs)	GEN. UNIT NO.	INCIDENT REF. NOTE
					SPILL BAY NUMBER								
					1 (RSW)			6					
08AUG2010 06:30	Umatilla	USACE	1 empty (fish)	12.15	6.75			5.40			12.1	1	1
10AUG2010 03:30	-	-	n/a – cruise vessel	11.03	6.73			6.04			12.4	1	2
LOWER GRANITE TUG/TOW INCIDENT SUMMARY AFTER UNIFORM SPILL SPECIAL OPERATIONS													
					SPILL BAY NUMBER								
					1	2	3	6	7	8			
12AUG2010 18:00	Outlaw	Tidewater	4 empty	18.55	6.73	0.00	6.88	1.64	1.64	1.68	14.3	5	3

Incident Descriptions (number referenced in last column of Table 2)

1. Umatilla 8106 fish barge backing out of storage area at Lower Granite collided with guide wall when rounding corner tip of wall (See Figure 2 on page 5). Note that incident details were compiled from dam operator, awaiting official incident report.
2. Cruise vessel possibly entering upper navigation lock and struck guide wall. Details will be finalized after official incident report is completed.
3. No known difficulties.

Figure 1. Lower Monumental Incident Diagram.

Tug Defiance/Lower Monumental Dam
Near Miss on 8-5-10 at 1910

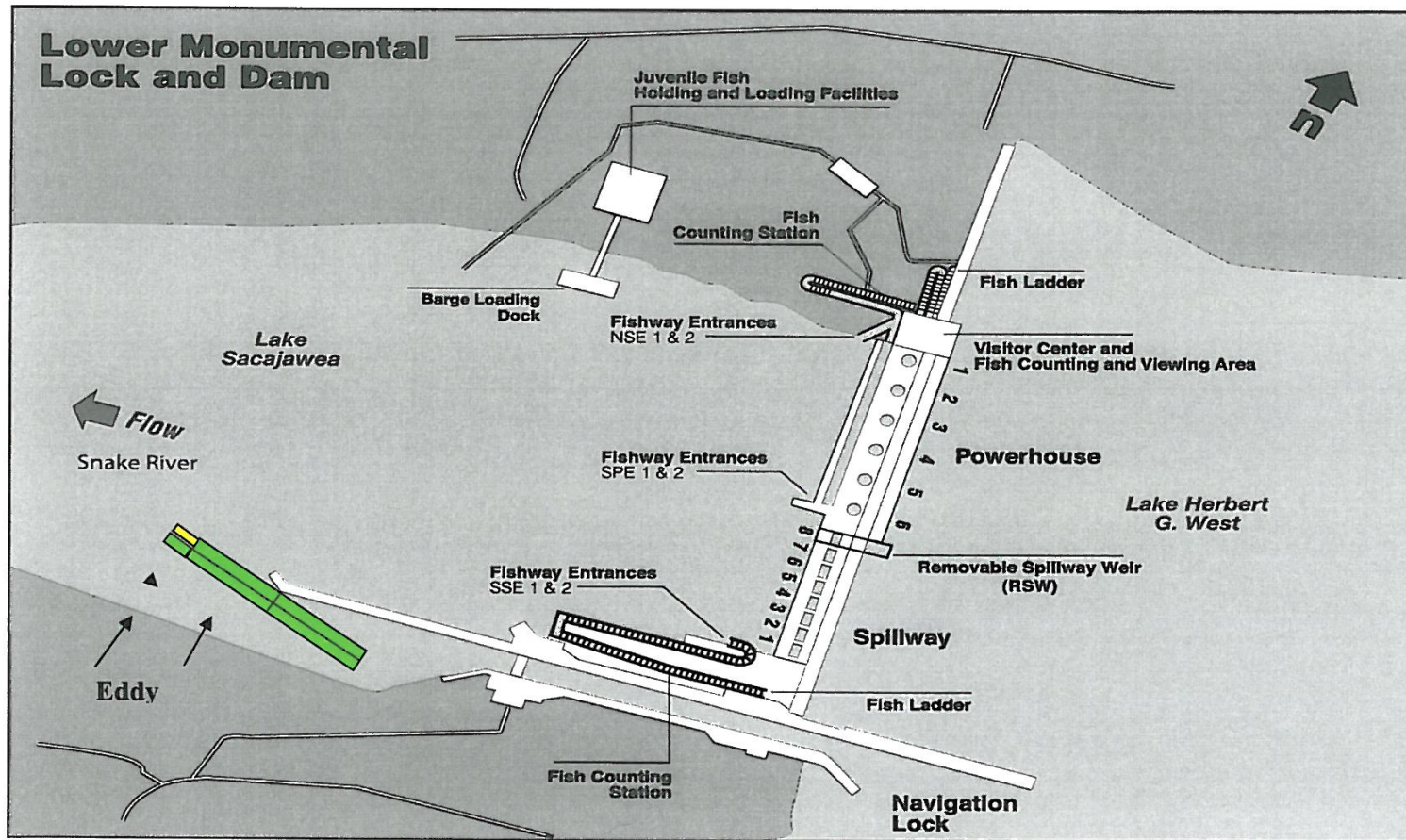
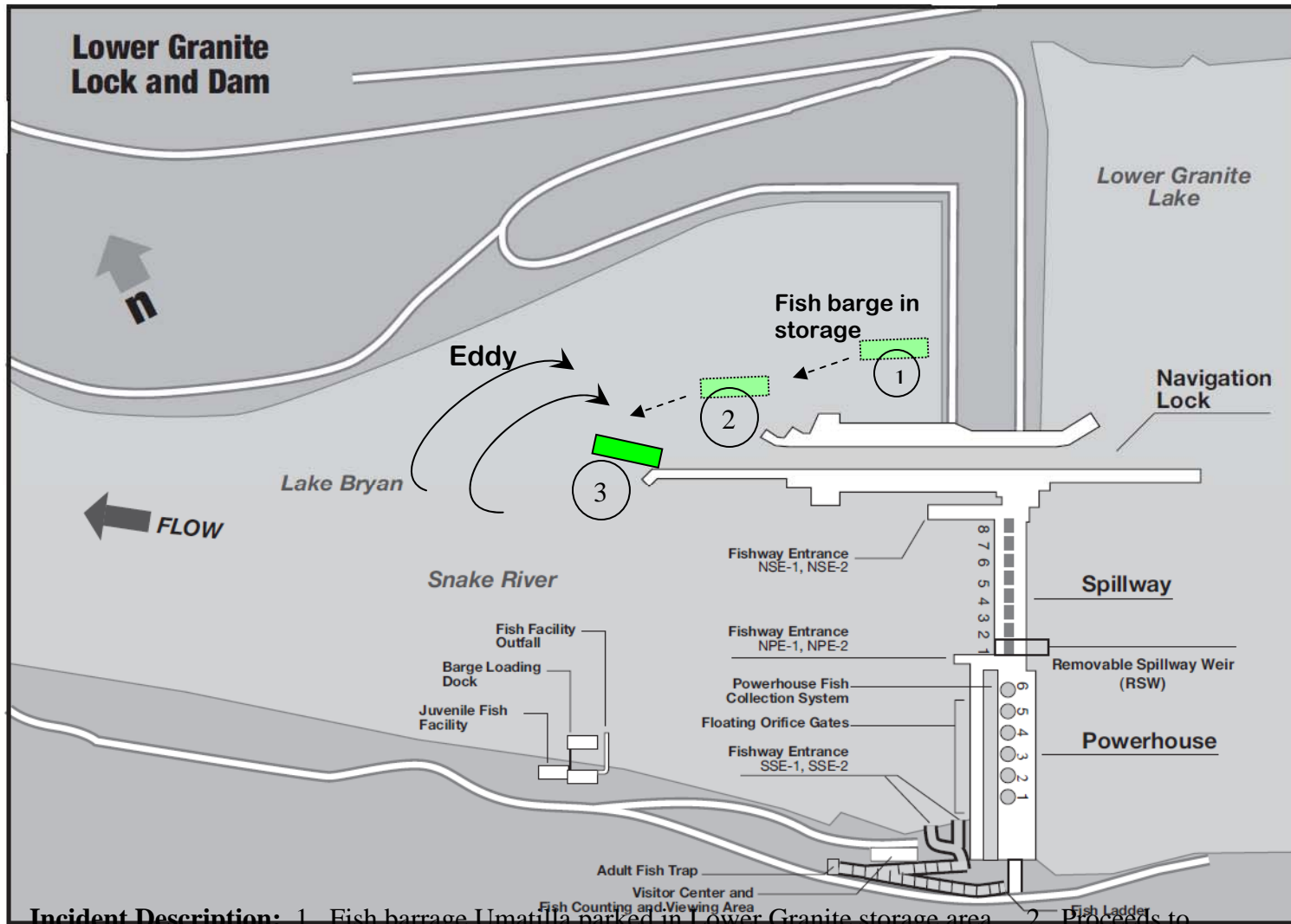


Figure LMN-1 Lower Monumental Lock and Dam General Site Plan

Incident Details: The tug Defiance was making an approach into the lower basin of Lower Monumental Dam. Total flow was 34 kcfs with 17.40 spill. The tow consisted of 5 barges, one being a loaded fuel barge. As the tow was lining up to enter the lower basin the eddy created by the low flow and spill gate configuration began pulling the bow of the tow towards the end of the guide wall. The tug (in yellow) had to bend the tow around the end of the guide wall to get into the lower basin. The barge directly in front of the tug was the loaded fuel barge. The operator had to make an evasive maneuver to keep the fuel barge from coming into contact with the wall and get safely into the lower basin.

Figure 2. Lower Granite Incident Diagram.



Incident Description: 1. Fish barge Umatilla parked in Lower Granite storage area. 2. Proceeds to back out of storage area and maneuver to juvenile fish facility on south shore. 3. Eddy current forces starboard side bow into guide wall, dislodging 12”X12”X4” piece of concrete guide wall.

Figure LWG-1 Lower Granite Lock and Dam general site plan.