

FISH PASSAGE CENTER

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MEMORANDUM

TO: Nicole Cordan

FROM: Michele DeHart

Michele DeHart

DATE: April 25, 2007

RE: Snake River Spill in 2007

We have received your request for hourly Snake River spill operations in 2007, with particular attention to April 3 and April 4. The Fish Passage Center maintains hourly spill data and monitors spill relative to the Court Order. Hourly flow and spill data are used by the fishery managers in consideration of fish passage operations. The FPC staff evaluates the hourly spill and documents the circumstances in which spill may not be achieving the Court's Order. The primary reasons why spill may not be achieved include:

- Spill is less than the Court's Order due to the waiver criteria for total dissolved gas at the forebay and tailrace monitors.
- Planned outages of projects necessary for construction/research/facility maintenance.
- Low river flows combined with the requirement of maintaining the operation of one turbine unit at each project.
- Unforeseen system changes requiring decreases in spill (usually reported by the COE to the Technical Management Team after the fact).

Spill was initiated at the Snake River projects at 001 hours on April 3, 2007. Attached are graphs of the hourly data for the Snake River projects since the initiation of spill. The red line representing the Court's order has been adjusted for the operation of one turbine unit at each project when flows are too low to provide both the operation of one unit and spill to the Court's Order, with the exception of Lower Monumental. At Lower Monumental the COE establishes, on a daily basis a spill level they designate as the gas cap. This Spill Cap is plotted as the Court's Order and the exceptions are annotated subsequent to each graph.

We are also providing the same type of graphs for each of the projects for the hourly data on the specific days that you requested (April 3 and April 4).

The following is a short synopsis of operations at each of the Snake River Projects since that time:

Lower Granite Dam – The Court Order calls for 20 Kcfs instantaneously at this project. Spill has consistently been meeting (within reason) the Court Order. Hourly spill has averaged 20 Kcfs since April 3, and ranged from 19.7 to 20.3 Kcfs. As you can see from the Apr 3-4 graph, there were no significant deviations from the Court Order.

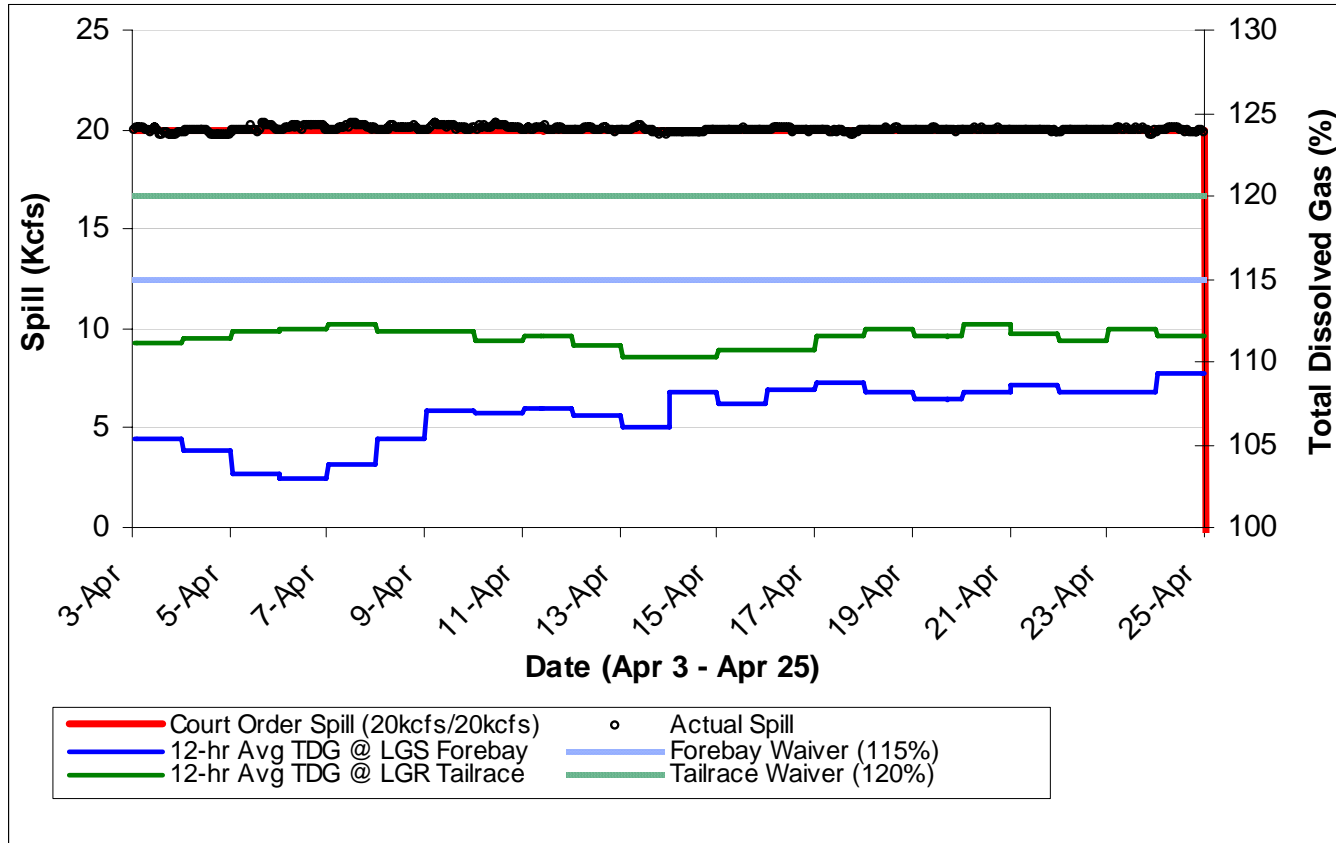
Little Goose Dam – The Court’s Order calls for an instantaneous spill of 30%. The COE has done a good job of meeting the 30% on a daily basis, generally being within 1% of the 30% on an hourly basis. The only exception occurred on April 13 from 1300 to 1500 hours when there was a spill outage to accommodate a research project that needed to access a specific area of the project to install hydrophones. On April 3 the 24-hour average for spill was 30.5% and on April 4 it was 31.4 %, meeting the Court Order.

Lower Monumental Dam - This project is a little different since the Court’s Order says to operate to the gas cap 24 hours a day. The gas cap is established by the COE based on the total dissolved gas readings in the Lower Monumental tailrace and downstream at the Ice Harbor Dam forebay. The gas cap was initially established as being 27 Kcfs and has been modified several times based on total dissolved gas. The red line on the graph represents the COE established gas cap. The annotation accompanying the graphs specifies how much spill was provided and the specific reasons for any restrictions. As you can see on April 3 and there were a few hours (maybe 6 hours) when the project could have spilled a few Kcfs closer to the gas cap, but did not. On April 4 it appears the Court Order was implemented. The following reason was provided at the Technical management Team (April 4th notes) for this deviation:

“On Monday morning, April 2, the control room operator at Little Goose had to manually enter forebay elevations into the computer because a technician working on calibrating the automated GDACS system, Bernard Klatte (COE) said. Because this was a departure from the normal automated operation and the operator was distracted from this task, the forebay elevation dropped below MOP of 633-634 feet elevation. BPA schedulers received incorrect information (received via computer) and managed the system accordingly. This created problems at all the other projects downstream of LGS resulting in fluctuating spill volumes to maintain MOP. At present, all projects are at MOP and spilling what they should be spilling. Dropping below MOP is a navigational issue, not a power generation or a flood control issue.”

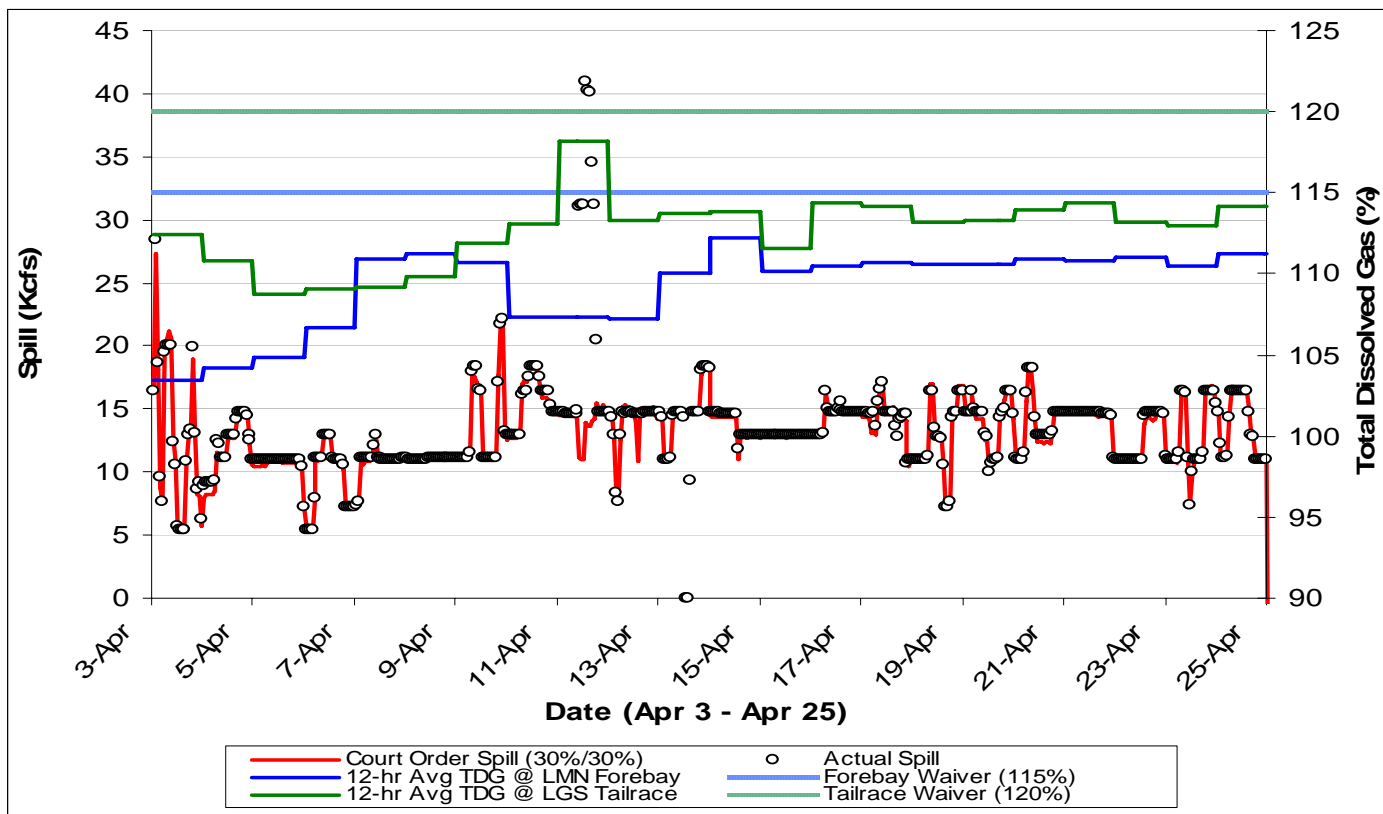
Ice Harbor Dam –Spill at Ice Harbor Dam has generally been at the Court Order after accounting for the low flows and the minimum operation of one turbine unit. As you can see on April 3 and there were a few hours (maybe 2 hours) when the project could have spilled a few Kcfs closer to the gas cap, but did not. Other than that on April 3 and April 4 it appears the Court Order was implemented. Again, the explanation for this deviation was provided as above.

Lower Granite Dam



No anomalies so far this year!

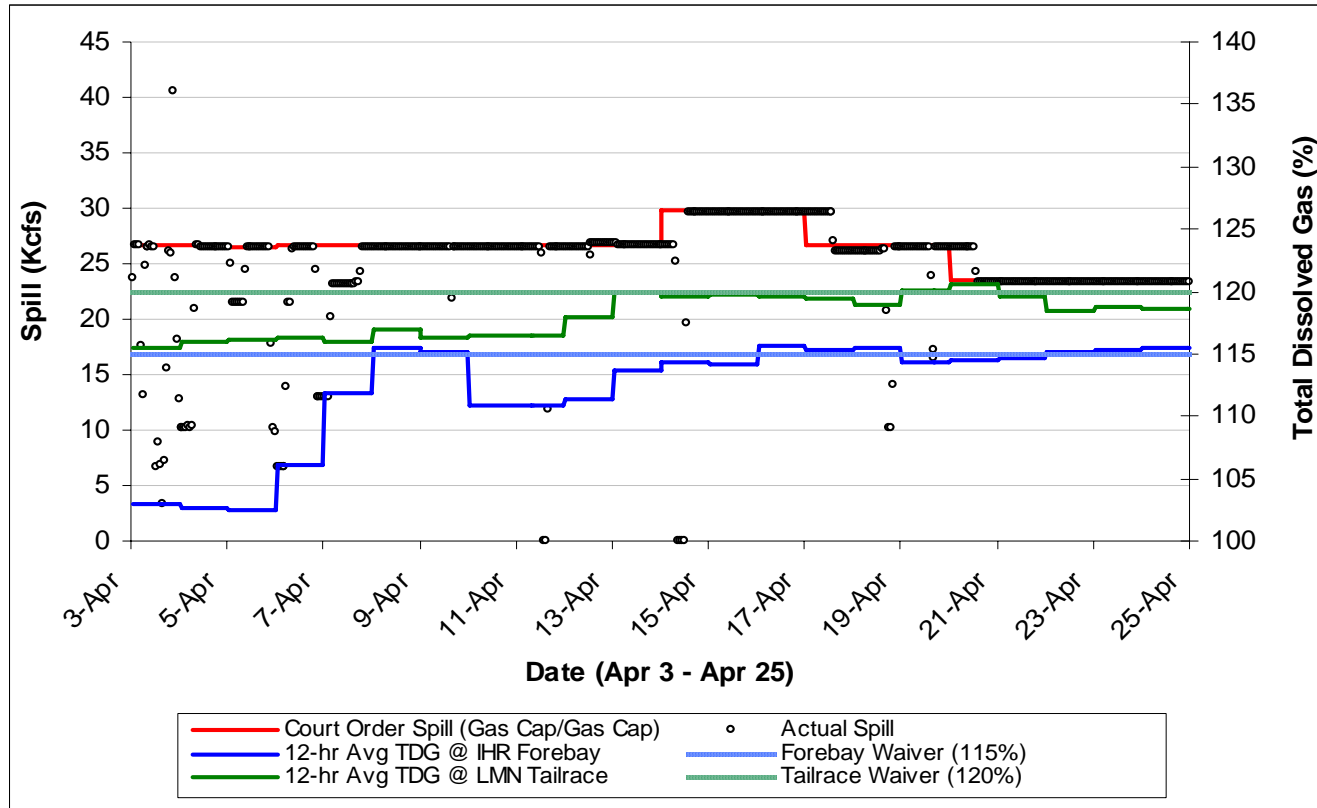
Little Goose Dam



11-Apr Spilled above agreement for 9 hours (11:00-20:00)

13-Apr No spill/Lower spill than agreement 13:00-15:00 due to outage (hydrophones in spillway)

Lower Monumental Dam



3-Apr Spilling below gas cap; Gas not exceeding; Flows too low to meet minimum powerhouse operation requirements and spill to gas cap;
Reduced spill on some hours according to COE explanation

4-Apr Spilling below gas cap; Gas not exceeding; Flows too low to meet minimum powerhouse operation requirements and spill to gas cap;
Reduced spill on some hours according to COE explanation

5-Apr Spilling below gas cap; Gas not exceeding; Flows too low to meet minimum powerhouse operation requirements and spill to gas cap

6-Apr Spilling below gas cap; Gas not exceeding; Flows too low to meet minimum powerhouse operation requirements and spill to gas cap

7-Apr Spilling below gas cap; Gas not exceeding; Flows too low to meet minimum powerhouse operation requirements and spill to gas cap

8-Apr Spilling 26.4 kcfs; Gas exceeded waiver at IHR Forebay (12-hr Avg = 115.5%)

9-Apr Spilling 26.2 kcfs; Gas exceeded waiver at IHR Forebay (12-hr Avg = 115.1%)

10-Apr Spilling 26.4 kcfs; Gas not exceeding waiver; Flows high enough to meet powerhouse operation requirements and spill to gas cap

11-Apr Spilling 23.6 kcfs; Gas not exceeding waiver; Flows high enough to meet powerhouse operation requirements and spill to gas cap; No
spill 14:00-15:00 due to outage (RSW preparation, movemnet of contractor barge)

12-Apr Spilling 26.6 kcfs; Gas not exceeding waiver; Flows high enough to meet powerhouse operation requirements and spill to gas cap

13-Apr Spilling 26.7 kcfs; Gas @ LMN Tailrace close to waiver; Flows high enough to meet powerhouse operation requirements and spill to
gas cap

14-Apr Spilling 23.2 kcfs; Gas @ LMN Tailrace close to waiver; Flows high enough to meet powerhouse operation requirements and spill to
gas cap; No spill 09:00-12:00 due to outage (equipment removal in forebay & install research equipment)

15-Apr Spilling 29.6 kcfs; Gas @ LMN Tailrace close to waiver; Flows high enough to meet powerhouse operation requirements and spill to
gas cap

16-Apr Spilling 29.6 kcfs; Gas @ IHR Forebay exceeding waiver (12-hr Avg = 115.7%)

17-Apr Reduced spill in afternoon to 28.2 kcfs; Gas @ IHR Forebay exceeding waiver (12-hr Avg = 115.3%)

18-Apr Reduced spill in afternoon to 24.2; Gas @ IHR Forebay exceeding waiver (12-hr Avg = 115.4%)

19-Apr Spilled 25.5 kcfs; Gas @ LMN Tailrace exceeding waiver (12-hr Avg = 120.1%)

20-Apr Spilled 25.1 kcfs; Gas @ LMN Tailrace exceeding waiver (12-hr Avg = 120.6%)

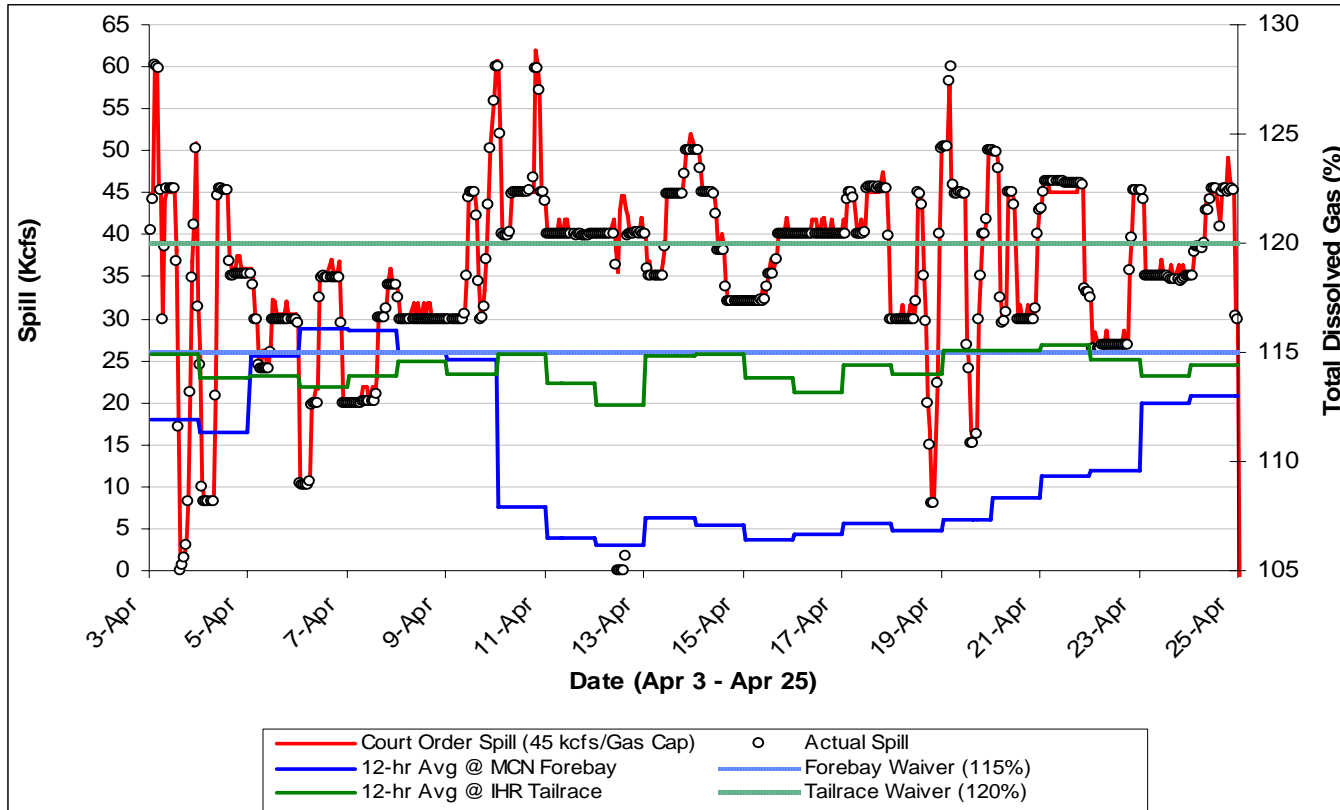
21-Apr Reduced spill to 23.4 kcfs; Gas not exceeding waiver; Flows high enough to meet powerhouse operation requirements and spill to gas
cap

22-Apr Spilled 23.4 kcfs; Gas @ IHR Forebay exceeding waiver (12-hr Avg = 115.2%); Flows too low to meet powerhouse operation
requirements and spill to gas cap

23-Apr Spilled 23.4 kcfs; Gas @ IHR Forebay exceeding waiver (12-hr Avg = 115.3%); Flows too low to meet powerhouse operation
requirements and spill to gas cap

24-Apr Spilled 23.4 kcfs; Gas @ IHR Forebay exceeding waiver (12-hr Avg = 115.5%); Flows too low to meet powerhouse operation
requirements and spill to gas cap

Ice Harbor Dam



12-Apr No spill/Lower spill than agreement 11:00-15:00 due to outage (hydrophones in spillway)

14-Apr Spilling below agreement (04:00-07:00); Gas not exceeding waiver

Lower Granite Dam

