

SUMMARY OF SPILL OPERATIONS FOR THE BONNEVILLE CHUM REDDS

4/12/04 – 4/16/04 Spill began at Bonneville with a spill limited to 50 kcfs/24hours as requested in the SOR 2004-4.

4/16/04 – 4/21/04: Spill limited to 75 kcfs/24hours

4/21/04 – Today: Nighttime Spill according a prepared table of total flow vs. spill levels. The spill table was developed using several graphs and other various pieces of information including:

1. Bonneville Project Tailwater and Outflows graph from the Bonneville Water Control Manual
2. Spillway Discharge to TDG Saturation graph from the DGAS studies
3. Bonneville Tailwater Elevation and % TDG graph developed from the 2000 NMFS Biological Opinion standard of 105% TDG saturation over the Redds.
4. Actual % TDG, spill, total flow and tailwater elevation data as stored on the Corps real-time operations database (CWMS)
5. The spill change guidance document that outlines how spill changes are made

Summary of Changes of Nighttime Spill based on the Total Flow vs. Spill Table

4/21/04 - 4/25/04: The following table was used. Nighttime flows persisted in the 180 to 200 range so 125 kcfs was spilled for nine hours each night. For the most part, TDG levels stayed within the acceptable range of TDG vs. tailwater elevation (105% TDG at the reds elevation) until 4/25 when the allowable TDG levels exceeded the tailwater elevation for 9 hours on 4/25/04.

Total Flow Range	Spill Level
125 - 140	50
140 - 160	88
160 - 180	110
180 - 200	125
>200	gascap

(Gascap was set at 135 kcfs)

4/25/04 – 4/26/04: Nighttime flows persisted in the 180 - 200 range so 100 kcfs was spilled for 9 hr April 25, which didn't generate the maximum amount of TDG for the available tailwater elevation.

4/26/04 – Present: Flows persisted in the 180 to 200 range at night so 110 kcfs was spilled for nine hours which generated the slightly more TDG than what was allowable for the tailwater elevation available. Upon consultation with NOAA, Fisheries, a 12-hour or a 24-hour average approach could be used.

Total Flow Range	Spill Level
125 - 140	50
140 - 160	75
160 - 180	90
180 - 230	110
>230	gascap