Water Quality Team Meeting Notes

April 11, 2006

1. Greetings and Introductions.

The April 11 meeting of the Water Quality Team was chaired by Mark Schneider and facilitated by Robin Harkless. The following is a summary (not a verbatim transcript) of the topics discussed and decisions made at this meeting. Anyone with questions or comments about these notes should contact Kathy Ceballos at 503-230-5420.

2. Updates.

A. Columbia River System Flood Control Study. Jim Adams said the study that was discussed at the last TMT meeting is the reconnaissance-level study looking at revising flood control levels at the Columba Basin projects. We're trying to determine whether there is a need to continue this study, he said; the public comment period ended March 31. The Corps will be looking at those comments and deciding how to proceed over the next several months, he said; the Corps will accept additional comments in the interim, as long as you inform the study managers about what is coming. Lonnie Mettler at the Corps' Division office in Portland is the current study manager; Laura Orr at the Corps' Seattle District office will be taking over as study manager in the next month or so. And what about the technical committee that was discussed at the last IT meeting? Schneider asked. I'll have to check into that and let you know, Adams replied.

B. Coordination of TDG Shallow Water Monitoring in the Lower Columbia River. Adams said the effort to characterize TDG impacts below Bonneville is ongoing. There will be two monitoring sites at four weeks apiece in 2006, as dictated by the amount of funding available to the Corps. The Corps is still waiting for input from the salmon managers as to which sites should be monitored, and when they should be monitored, Adams said.

We have discussed the fact, at the WQT, that we would like to see both biological and physical monitoring, said Schneider. The only thing we have funding to do is physical monitoring, Adams replied. Harkless noted that the Corps has been coordinating with LCREP. LCREP will be working with the Corps to pick monitoring sites, said one meeting participant; there will be some coordination, although LCREP

will have more sites than the Corps. We'll schedule a further update on this topic at the May WQT meeting, said Harkless.

C. Status of the Fish Passage Center. Margaret Filardo said her understanding is that, on March 17, the execution of the Fish Passage Center was stayed; the FPC contract was extended until April 18. The various lawyers will be exchanging briefs until the hearing on September 11; the decision will be issued some time after that. The contract for the FPC has been extended until November 30.

D. Sea Lions in the Lower Columbia River. Garth Griffin said that, as the WQT is aware, last year, the sea lions started using the Columbia River at an impact rate to spring Chinook that was greater than anything seen before. The sea lion impact has been doubling every year, and last year, the sea lion problem received a lot of public notice. We started doing hazing last year, with limited effectiveness, he said; the Corps has installed sea lion exclusion devices across the ladder entrances, and has also installed acoustic deterrents. There are a few animals that have figured out how to access the fish ladders in spite of the SLEDS; they have arrived earlier, and in greater numbers this year, and their efficiency at taking both spring Chinook and sturgeon has increased. The State of Oregon has requested ESA authorization to haze animals within a 12-mile radius of the dam, on a four day on, four day off schedule. It may be that because we're exercising these animals by chasing them away, we may only be making them hungrier, Griffin said. There are 35-40 sea lions at Bonneville at any given time; there are about 100 animals that spend at least some time at the dam. Some animals are far more problematic than others, said Griffin; these are not animals that are easy to deal with.

Griffin discussed the sea lion deterrents in use in 2006, including SLEDS, pyrotechnics, acoustic deterrents, rubber bullets and hazing from boats. About 90 percent of the animals are California sea lions; the other 10 percent are stellar sea lions. Most have been branded and radio-tagged; it is only the males who are up here feeding – it's a spring break road trip, and they go wherever the hunting is good, he said. They spend June-August on the rookeries in the Channel Islands in Southern California; the rest of the time they go wherever the food takes the. They love baitfish, flatfish, and go wherever the food source takes them at a given time of year. In the Columbia, 100 percent of their diet is spring Chinook and sturgeon. Some animals become specialized at living in a human environment and foraging in the tailrace of dams. Only 29 spring Chinook have passed Bonneville to date, compared to a 10-year average of 14,000 by this date, noted Filardo.

E. NW Power Council Project Prioritization Process – Water Quality Projects. John Picinininni said there are about 11 projects with major water quality implications in this year's Council prioritization process; many have to do with nutrient additions; others have to do with temperature and temperature monitoring. We'll be

looking at all of those projects next week, he said; I will report back to the WQT at the group's next meeting. The actual proposals can be downloaded from the Council website, Picinininni added.

And what happens after the proposals are reviewed? Harkless asked. They will be prioritized, Picinininni replied; they will be ranked as "essential," "high priority," "worthy of funding" and "do not fund." The entire program included more than 400 projects in FY'05, said Picinininni. It was agreed that the WQT will receive further updates at its upcoming meetings.

3. Total Dissolved Gas Characterization of the Columbia River Below Bonneville Dam.

There was general agreement that Mike Schneider's report contains a huge but useful volume of information; many WQT members said they had not yet had adequate time to review it to the extent it deserves. Mark Schneider said that, at the last WQT meeting, the WQT had agreed to provide comments on this report by April 3, but members have not yet completed their reviews and written comments. Adams said that, in his opinion, until comments have been submitted, it wouldn't be productive to have another general briefing on the report at today's meeting. Mark Schneider agreed, but noted that there may be some areas of the report that have not yet been reviewed.

After a few minutes of additional discussion, it was agreed that the WQT members will review Mike Schneider's report, and that the group will schedule a conference call in May to discuss it. It was further agreed that draft comments will be submitted to Mark and/or Mike Schneider or to Jim Adams by the end of May; the WQT will re-engage on this issue at the group's June meeting. Margaret Filardo noted that FPAC would like to have an opportunity to provide their input on this report as well. Mike Schneider noted that the sampling bias issue in the spillway is perhaps the most significant issue that should be addressed, given the relatively high flows expected in 2006.

4. 2006 Spill Priority List.

Adams said he had distributed the most recent version of the spill priority list to the WQT membership; the purpose of this list is to inform project personnel of any changes to the spill program. We list the volumes we have estimated to reach various TDG levels -- 110 percent, 115 percent, 120 percent etc. – at a given project, Adams said. If these levels are different from the levels we have set out before, we will send out a teletype to our various projects. He noted that there is a real possibility, given the remaining snowpack this year and possible meteorological conditions, that the system may exceed 125% this year, depending on how the weather shapes up between now and June.

There is also a specific order of spill up to Bonneville, said Adams; there is a

specific order in which we are required to spill as long as all of the projects are in working order. Lower Granite would be first; Little Goose is send, and Lower Monumental is third. Research projects are a confounding factor. Grand Coulee is at the bottom of the list – that's the last place we want to start spilling.

Anyway, this is the current order of the list, and it will likely be discussed weekly at TMT, said Adams. The main goal is to keep the system below 125 percent TDG. Adams said that short conference calls on the current status of the spill priority list would be welcome, to avoid population-specific impacts. It sounds as though there will be frequent TMT check-ins on this issue, said Harkless;

Grant PUD has research ongoing at both Wanapum and Priest Rapids, and we would like to have input on this topic, said one participant – we have definite input on how operations should be conducted. It was agreed that the TMT will be discussing this topic as appropriate; various PUD participants expressed an interest in discussing it further with the TMT.

5. Elevated TDG Levels at Cascades Island.

Adams said the issue here is off-season TDG at Cascades Island; the gauge at this location was installed earlier than required. It was installed on February 23 and has been operated ever since. The Corps has been looking at the data and noticed some peculiarities; TDG levels during March have been above 110%. That exceeds the Oregon standard, Adams said. The Corps looked at why this might be occurring; we see a regularly fluctuating pattern synchronous, but opposite, to spill. We see the peak values happening during nighttime hours, which were somewhat counterintuitive – when we actually turned the spill on, the TDG values, came down. We have seen similar readings during previous years, Adams said.

The bottom line is that all of the gauges show a pattern of daily values going up and down, said Adams. After some additional investigation, the Corps' conclusion is that the 2.4 Kcfs training spill from bays 1 and 18 for the fish ladders was the culprit. Gas readings within the fish ladders were sometimes in excess of 120 percent, which apparently explained the surprisingly high TDG levels during non-spill periods at Bonneville Dam. There was general agreement that further investigation may be warranted into this phenomenon.

6. Current Operations at FCRPS Projects.

Adams said fish spill began at the Lower Snake dams on April 3; at Lower Granite, it included 12 Kcfs spill through the RSW plus 8 Kcfs of training spill. He showed a series of graphs outlining total spill, total river flow and TDG levels at Lower Granite, Little Goose, Lower Monumental and Ice Harbor to date. Adams said no significant TDG exceedences have been observed to date. Adams also discussed spill at McNary, noting that the instructions call for spill up to the spill cap, which may be up

to 150 Kcfs; however, the language in the instructions is somewhat vague. We have asked for a clarification, he said; at this point, we're assuming that 150 Kcfs is a cap, not a guide.

At John Day, we're planning to spill zero during the day and 60 percent of total river flow at night, as per the court order, Adams said. We increased the spill cap from 100 Kcfs to 130 Kcfs last night, in response to some communication from NMFS, he added.

7. Next WQT Meeting Date/Joint WQT/SCT Field Trip to Lower Snake River Projects.

The next meeting of the Water Quality Team will include a joint field trip with the SCT to the Lower Snake River dams on May 16-18. Schneider said the plan is for the WQT and SCT to travel to Walla Walla by Tuesday evening so that they can travel to Lower Granite, Little Goose and Lower Monumental on Wednesday, then to Ice Harbor and McNary on Thursday. Schneider said a van from Portland will be available; a second van will be available via Pasco. It was suggested that the participants in this excursion stay in the Best Western Walla Walla. Schneider said he will send out an email explaining the itinerary.

Meeting summary prepared by Jeff Kuechle, BPA contractor.

Enc. A

Water Quality Team
Meeting Agenda
April 11, 2006

Time: 1:30 to 4:30 pm

Place: National Marine Fisheries Service
1201 NE Lloyd Blvd., Suite 1100
Portland, Oregon
97232-1274

Mt. St. Helens Conference Room A, 10th Floor

**Please sign in with the Receptionist on the 11th Floor on arrival.

Conference Call Number: 503-872-2897

Agenda:

1. 1:35 - 2:30 PM. Updates:
   a. Columbia River System Flood Control Study – Jim Adams, COE
   b. Coordination of TDG Shallow Water Monitoring in the Lower Columbia River – Jim Adams, COE
   c. Status of the Fish Passage Center – Margaret Filardo, FPC or Mark Schneider, NMFS.
   d. Sea Lions in Lower Columbia River (for now) – Mark Schneider, NMFS
   e. NW Power Council Project Prioritization Process, Water Quality Projects - Mark Schneider, NMFS

2. 2:30 – 3:30 PM. Total Dissolved Gas Characterization of the Lower Columbia River below Bonneville Dam - Jim Adams, Mike Schneider, COE
   a. WQT Comments on draft report
   b. TDG Management Discussion
      i. Standards
      ii. Operation policy
      iii. Forebay conditions
      iv. Meterological conditions
      v. Fixed monitoring stations
      vi. Risk-based management conditions.

c. Recommendations
    i. PH 2 vs Ph 1 operations
    ii. Spill pattern modification to generate less TDG
    iii. Water stage and TDG interaction
    iv. Development of a mixing zone

3. 3:30 – 4:00 PM. 2006 Spill Priority List - Jim Adams, COE

4:00 – 4:30 PM. Next WQT Meeting - System Confinguration/Water Quality Teams joint field trip to Lower Snake River Projects, May 16-18, 2006. Itinerary, travel plans and arrangements – Mark Schneider, NMFS.

WATER QUALITY TEAM MEETING

April 11, 2006
Portland, Oregon

NAME	ORGANIZATION	PHONE	FAX
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Margaret Filardo	FPC	503-230-4286	503-230-7557
David Wills	USFWS	360-604-2500	360-604-2505
Robin Harkless	DS Consulting	503-248-1473	503 x.
Jim Adams	COE	503-808-3938	503-808-3932
Richelle Beck	D. Rom & Assoc	503-408-4969	Same
Jill Leary	LCREP	503 226-1565 x 235	503 226-1580
Mike Schneider	CE-ERDC	541-298-6872	541-298-7168
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Chris Cook	PNGC		
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Curt Dotson	Grant PUD		

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
PORTLAND OFFICE
1201 NE Lloyd Boulevard, Suite 1100
PORTLAND, OREGON 97232-1274

F/NWR5

February 23, 2006

Jim Adams
U.S. Army Corps of Engineers, Portland District
1125 NW Couch Street, Ste 500
Portland, OR 97208-2870

Dear ~~Mr. Adams:~~ Jim

I am sending you a copy of a recent memorandum to the Water Quality Team File. The memorandum was written in response to your presentation to the Water Quality Team on January 17, 2006. Please note that the document was endorsed by scientific staff of two Federal agencies, a State water quality agency, and the Fish Passage Center. The subject matter of the document is the monitoring of total dissolved gas in the tailrace below Bonneville Dam. I anticipate this topic will be discussed at the next Water Quality Team meeting on March 14, 2006.

Sincerely,

Mark Schneider
Water Quality Advisor
Hydropower Division

Enclosure

cc: Margaret Filardo, FPC
David Benner, FPC
David Wills, USFWS
Agnes Lut, ODEQ
Andrew Kolosseus, WDOE

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
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MEMORANDUM

TO: Water Quality Team Files

FROM: Margaret Filardo, FPC
David Benner, FPC
David Wills, USFWS
Mark Schneider, NMFS
Agnes Lut, ODEQ
Andrew Kolosseus, WDOE

DATE: February 22, 2006

RE: Response to COE Presentation on January 17, 2006

This short memorandum is in response to the presentation that the COE gave to the Water Quality Team on January 17, 2006. This presentation was given by Jim Adams and was titled "Management of Spill at Bonneville Dam: Cascades Island TDG Gauge." As Water Quality Team Members we would like to document our concerns. The conclusion of the COE presentation was that the current Cascades Island Gauge location underestimates the TDG levels that are occurring across a cross section of the spillway. The main justification for this conclusion is a plot included in the presentation that compares the relationship between spill and TDG at the Cascades Island location (BON TWP1) and the relationships between spill and average and maximum TDG across the spillway. Because the trend lines appear different in this plot, the COE has concluded that the current location of Cascades Island gauge underestimates TDG in the Bonneville spillway and has proposed lowering the gas cap at Cascades Island.

We are concerned regarding the COE's conclusions at this time. The information is based on data collected in only one year of study, and the COE has not provided confidence intervals for each of their spill-TDG relationships in the mentioned plot. We suspect that with the current information presented by the COE there is no way to judge whether differences between the trend lines are statistically significant. Until further studies are conducted and data analyzed, we cannot support the conclusion by the COE. We recommend continued use of the Cascades Island TDG site for spill management below Bonneville Dam.