San Joaquin River Dissolved Oxygenation Total Maximum Daily Load
Technical Working Group Meeting
December 13, 2005 Meeting Summary

Meeting Attendance

Name	Agency
Attebery, Rod	N&B/Port of Stockton
Borglin, Sharon	University of the Pacific/Lawrence Berkeley National Lab
Brown, Russ	Jones & Stokes
Brunell, Mark	University of the Pacific
Burr, Kari	University of the Pacific
Chen, Carl	Systech
Cory, David	Exchange Contractors
Dahlgren, Randy	University of California, Davis
Edmunds, Jody	URS Corporation
Finney, Vern	U.S. Department of Agriculture
Fredhall, G.	GFL & Associates
Gittings, Steve	City of Stockton
Gowdy, Mark	Central Valley Regional Water Quality Control Board
Grimes, Russ	Jones & Stokes
Hangman, Michael	Friant Water Authority
Harrison, John	University of California, Davis
Headlee, John	U.S. Army Corps of Engineers
Herr, Joel	Systech
Heyd, Jennifer	Regional Water Quality Control Board
Hsu, Claire	Bureau of Reclamation
Kratzer, Charlie	U.S. Geological Survey
Lee, Gene	Bureau of Reclamation
Lehman, Peggy	California Department of Water Resources
Lu, Zhrimin	Regional Water Quality Control Board
Mao, Lee	Bureau of Reclamation
Marcotte, Barbara	California Bay-Delta Authority
McGahan, Joe	Summers Engineering
O'Cpeen, Toby	University of California, Davis
Ploss, Lowell	San Joaquin River Groundwater Authority
Quinn, Nigel	Lawrence Berkeley National Laboratory
Rajbhandari, Hari	California Department of Water Resources
Stringfellow, Will	Lawrence Berkeley National Laboratory
Taylor, Ernie	California Department of Water Resources
Volkmar, Emily	University of California, Davis
Wingfield, Jeff	Port of Stockton
Wong, Henery	Bureau of Reclamation

Introductions and Agenda Review

Welcome, Introductions, and Meeting Purpose

Danielle Wilson with Jones & Stokes facilitated the Technical Working Group (TWG) meeting. The meeting began with general announcements, introductions, and an agenda review. In addition to providing general updates, the purpose of the meeting was to update the TWG on various upstream studies currently underway, including presentations from Will Stringfellow on the Upstream DO TMDL Project; from Randy Dahlgren on the Upstream Water Quality in the San Joaquin River Watershed; and from Garry Litton and Mark Brunell on the Link to the Deep Water Ship Channel.

Updates

Central Valley Regional Water Quality Control Board Action on DO

Mark Gowdy, on behalf of the Central Valley Regional Water Quality Control Board (CVRWQCB), provided an update on the CVRWQCB's actions on dissolved oxygen. M. Gowdy reported that the State Board adopted the TMDL last November and subsequently forwarded it to the Office of Administrative Law and the U.S. EPA for final approval. Overall efforts will help to inform the final TMDL.

Demonstration Project

Russ Grimes with Jones & Stokes reported on the demonstration project that will eventually provide 10,000 pounds of oxygen to the Deep Water Ship Channel. The project is located at the end of Rough & Ready Island, near Dock 20 and the diffuser is 1,000 feet upstream. R. Grimes reported that DWR completed the demonstration project design and that the contract was awarded to Clyde G. Steagall, Inc. Once constructed, full operation is expected to begin in either September or October of 2006. Following that, experiments can be conducted.

San Joaquin River Water Quality Management Group Plan

Lowell Ploss of the San Joaquin River Groundwater Authority updated the TWG on the San Joaquin River Water Quality Management Plan. He indicated that the plan is currently under review and that implementation will commence soon. A coordination group has been formed to manage overall efforts and to examine ways to share operation data. L. Ploss also relayed that the plan will help the Bureau of Reclamation meet flow and water operations at Vernalis.

Presentations

The following paragraphs are brief presentation summaries from the meeting. To view the full PowerPoint presentation, visit http://www.sjrdotmdl.org/meetings.

Upstream Studies Contract – Will Stringfellow, Lawrence Berkeley National Laboratory

Will Stringfellow with the Lawrence Berkeley National Laboratory provided an expanded update on his Upstream DO TMDL Project. The purpose of the project is to provide a comprehensive understanding of the sources and the fate of oxygen demand and nutrients in the watershed, as well as growth and decay of algae in the San Joaquin River (SJR). W. Stringfellow indicated that this project will also seek to create a comprehensive model of the SJR upstream in the Deep Water Ship Channel. The model will be developed using a user-friendly interface that accommodates stakeholder group use. The model will be calibrated with information collected in the monitoring and data gathering programs and will be used for

data transmission between collection, modeling and the SWAMP database. W. Stringfellow also provided information on specific directed scientific studies relative to the overall project (see related PowerPoint for specific study details). Another part of the study is a grab sampling program (initiated in March 2005) in which 20 core stations in the SJR and its tributaries are sampled daily to measure constituent levels. This year, 472 samples were collected. W. Stringfellow noted major project accomplishments to date, including completing a model user interface and the updated data atlas. W. Stringfellow indicated that the project will conclude in June 2008. Interim reports are available on CD upon request, and all reports will be housed on the TWG Website in the next couple of months.

Summary of San Joaquin Upstream Studies: 1999-2005 – Randy Dahlgren, University of California, Davis

Randy Dahlgren with UC Davis provided a summary of the San Joaquin Upstream Studies from 1999 through 2005. The purpose of this study is to understand sources of algae and nutrients, as well as water quality constituents of interest in the San Joaquin River. In addition, the study was initiated to understand algae dynamics across various time-scales including interannual, seasonal and diel.

Major accomplishments from the study include:

- More than five years of biweekly data from various sites on the river, tributaries and drains;
- Documentation of diel water quality signals for those constituents linked to algae;
- Determination of major sources of various water quality constituents;
- Determination of water quality sources contributing to BOD; and
- Determination of algal growth rates for various segments of the San Joaquin River.

Link to the Deep Water Ship Channel – Gary Litton and Mark Burnell, University of the Pacific

Gary Litton and Mark Brunell of the University of the Pacific gave a presentation on work being conducted at Vernalis and the Deep Water Ship Channel (DWSC). G. Litton indicated that many of the same processes found in this reach of the river are similar to data obtained through Randy Dahlgren's efforts. The objectives of this endeavor are to determine the mechanisms influencing algal growth and decay from Vernalis to the DWSC; quantify oxygen demands entering the DWSC; and provide a comprehensive data set for water quality model calibration upstream of the DWSC. Water quality monitoring and studies began in July 2005 and are ongoing through the next three years. G. Litton indicated that the motivation for conducting this study is to examine the depletion of chlorophyll and the contradictory modeling predictions. The overall approach is to deploy sondes at various fixed locations, place a tracer (dye) to track the plume mode, measure various nutrients and evaluate the organizations of grazing analysis, look at rate of decay, and evaluate algal productivity. Based on the study to date, G. Litton found that the high flows during 2005 reduced the travel time from Vernalis to the DWSC and the observations in 2005 are atypical but indicate that grazing, settling and light limitation effects are significant in explaining the fate of algae.

Performance Measurements for the Deep Water Ship Channel Oxygen Device: How Do We Know it's Really Working? – Russ Brown, Jones & Stokes

Russ Brown was unable to present on the following topic. His presentation has been rescheduled for the February TWG meeting in February.

DO TMDL Website Update – Danielle Wilson, Jones & Stokes
Danielle Wilson with Jones & Stokes gave a quick update on the DO TMDL Website. D. Wilson indicated that Jones & Stokes is creating separate sub-pages for all current DOTMDL studies and projects. These individual sites will provide TWG members greater access to associated information such as presentations, reports, sampling schedules, and other updates. In addition, D. Wilson reminded meeting attendees to sign in and to review and update their contact information.

Identify Next Steps

The next meeting is scheduled for February 21, 2006. The DO TMDL TWG meeting adjourned at 12:05 p.m.