

**RMP Technical Review Committee Meeting
March 15, 2005
San Francisco Estuary Institute
Meeting Minutes**

In attendance: Larry Bahr Fairfield-Suisun Sewer District, Frank Black (UCSC), Kit Conaway (UCSC), Bridgette Deshields (BBL/WSPA), David Dwinell (USACE), Diane Griffin (EBMUD), Andy Gunther (AMS), Andy Jahn (Port of Oakland), Mike Kellog (City and County of San Francisco), Allison Luengen (UCSC), Jim McGrath (Port of Oakland), Steve Osbourne (City of San Jose), Chris Sommers (EOA-BASMAA), Karen Taberski (Regional Board), Dave Tucker (City of San Jose), Mike Connor (SFEI), Jay Davis (SFEI), Sarah Lowe (SFEI), Lester McKee (SFEI), Jon Oram (SFEI), Meg Sedlak (SFEI) and Don Yee (SFEI)

1. Introductions and Approval of Agenda and Minutes

Dave Tucker opened the meeting by asking for comments on the December 2004 minutes. Meg Sedlak indicated that most of the action items had been addressed; those that were not addressed would be included with today's action items. A table of action items follows these meeting minutes.

An update on three of the December action items was presented by Meg Sedlak. Bruce Thompson's estuary contamination index project is funded by the RMP, SCCWRP, and SFEP. Dr. Thompson anticipates that a multi-media annual contamination index will be developed and that the results of the study will be summarized in the 2006 Pulse. Second, mercury data from seal fur study are not available yet from Moss Landing Marine Laboratory. Lastly, the alkylated PAH data has been posted on the SFEI web site and can potential be used to characterize sediments in the event of an oil spill into the Estuary.

In absence of any comments, the minutes were approved by the Committee.

Action item: Include action items from the December 2004 meeting into the action items developed from the March 2005 meeting.

2. Information: January Steering Committee Report

Meg Sedlak provided a summary of the Steering Committee meeting on January 24, 2005. The Committee approved the 2005 Program Plan and budget. Dr. Connor summarized the key points from a memorandum he developed regarding the process for approving the budget that was presented at the January meeting. Dr. Connor stated that the memorandum has been significantly revised since the meeting in January and that he would provide an update to the TRC once the revisions were finalized.

Action item: Dr. Connor will provide an update to the TRC on the budget process approval memorandum.

3. Information: Setting Priorities for the 2006 Program Plan

Jay Davis presented Pilot and Special Study (PS/SS) ideas for possible inclusion in the 2006 Program Plan. Meg Sedlak distributed the Five-Year Plan to the group and indicated that based on a review of the Plan handed out, approximately \$80,000 was available for 2006 for PS/SS. Dr. Connor noted that the Five-Year Plan did not reflect \$100,000 for sediment sampling for PCBs as part of the development and optimization of the multi-box model. Jay Davis stated that inclusion of this item in the Five-year plan meant that no funds would be available for PS/SS. Although no funds are available for 2006, a decision was made to review and prioritize the eight PS/SS ideas that were submitted in the event that additional funds became available during the year. A brief summary of several of the projects was given by several of the researchers. The PS/SS ideas were provided as handouts to the TRC.

Karen Taberski stated that Carol Thorten had included the RMP on the Supplemental Environmental Projects (SEP) list. Mr. McGrath indicated that it would be unlikely that permit-holders would fund any projects from this list as they are liable for the total cost of the project, regardless of whether the project meets its estimated budget or not. He indicated that the Port of Oakland had sponsored one project for \$60,000 and had been liable for approximately \$300,000 as the project had had significant budget overruns.

Ms. Taberski requested that a work group be convened to address the Winter Sampling PS, the CTR Study, and the Episodic Toxicity Study to synthesize the lessons learned from these projects and how the RMP should be modified to incorporate these findings.

A question was raised as to how the PS/SS ideas were developed. Meg Sedlak stated that several of the ideas came from the TRC and others were developed by the researchers themselves. Several members suggested that the CEP, the RMP, and the RWQCB should meet to develop and prioritize a list of studies that would assist in the development and implementation of TMDLs. It was noted that a list of studies needed for the TMDL had been developed but not prioritized. It was proposed that Mike Connor, Andy Gunther, and a staff member from the RWQCB review this list to prioritize the studies and potentially identify any data gaps. Dr. Connor also suggested that this issue be included as item to be addressed at the next CEP meeting.

Jim McGrath noted that several of SS proposed today investigated the uptake of mercury in the food web; however, no comprehensive study was proposed. He stated that the South Bay Salt Pond restoration project presented a good

opportunity for the RMP to address some of the more regional issues, rather than having each individual restoration project conduct studies that were more limited in scope. Mr. McGrath stated that there is a real sense of urgency associated with this issue and gave the example of the Napa River Salt Pond restoration project. The mercury TMDL was adopted after the permit went through and as a result, mercury issues are not addressed as part of the restoration project.

Mr. Bahr questioned why wetland restoration would present an issue for mercury. Mr. McGrath stated that the deeper sediments contained elevated concentrations of mercury. Jay Davis indicated that the mercury present in wetland sediments is amenable to biological processes that convert mercury to its more toxic form methylmercury. It was also noted that there are presently approximately 50,000 acres of existing wetlands and that approximately 30,000 acres of new wetlands will be restored.

Action items: TRC to rank PS/SSs. Sarah Lowe to convene a work group in the next several months to discuss Winter Sampling PS, the CTR Study and the Episodic Toxicity Study and how findings from these studies may result in the modification of the RMP. Mike Connor, Andy Gunther, and RWQCB to meet to prioritize studies for the development and implementation of TMDLs.

4. Information: Update on 2005 Pulse

Dr. Davis informed the group that a draft of the 2005 Pulse had been sent to a limited set of reviewers including the TRC. Jay Davis requested that the Committee's comments be sent to him as soon as possible.

5. Discussion: 2005 RMP Annual Meeting Agenda

Jay Davis presented the revised agenda for comments. Dr. Davis indicated that he would like to have John Conomos as the key note speaker, if possible. TRC members thought that he would be a great speaker. Jay indicated that Dr. Conomos talk would be approximately 50 minutes and the remainder of speakers would have approximately 30 minutes. Other unconfirmed speakers included: Herb Frederickson of the US Army Corps of Engineers and Professor Frank Gobas.

Dr. Davis indicated that he added an overview of the RMP Workplan and Program. Mr. McGrath suggested that Dr. McKee's talk on tributary loads should be focused on the Guadalupe River. Dr. Davis indicated that this was designed to be a general talk.

Dr. Davis also indicated that in an effort to report the RMP data in a timelier manner, a request was made to move the Annual Meeting to the Fall of 2006. Mr. Bahr stated that if the laboratories were delayed in submitting their data to the RMP that the RMP should focus on the laboratories and not on moving the

Annual Meeting. Dr. Davis acknowledge that this was true; however, the current schedule did not allow sufficient time for reporting the data within one year as the Annual Meeting is approximately nine months after sample collection.

A motion was made by Mr. Tucker to move the Annual Meeting to the Fall 2006 and was seconded by Andy Jahn and Karen Taberski. The motion was approved by the Committee.

6. Information/Action: Update on Multi-box Model

Dr. Jon Oram presented an update on the status of the multi-box model. He indicated that he was working with Dr. Schoellhammer and Megan Lionberger to incorporate the USGS sediment model into the multi-box model. With the inclusion of the sediment model into the multi-box model, the model will be able to calculate a change in the sediment volume present in each box. Jon Oram indicated that the model would be sent to Tetra Tech for uncertainty analyses. This information will be used to guide the development of a sediment sampling plan.

Dr. Davis elaborated on the scope of work for the multi-box model that was presented in the 2005 Detailed Workplan. He indicated that it would be a four-year effort to develop a model that would provide the long-term foundation for predicting impacts on water quality. Jay Davis stated that field work would be used to guide the model and that there would be multiple points for input from the Committee. Dr. Davis stated that a detailed scope of work was available from Dr. Gunther.

Specific tasks included:

- Incorporate USGS sediment model
- Create enhanced graphics
- Prepare draft report (Version 1)
- Conduct uncertainty analyses (Tetra Tech)
- Prepare sediment sampling plan
 - Obtain input from the Contaminant Fate Work Group which will meet on April 15th
 - Incorporate results of uncertainty analyses into sediment plan
- Collect sediment cores in the Bay (AMS)
 - At present, only two historical cores are available to characterize the Bay
- Conduct additional sediment sampling the following year
- Apply model to other pollutants

Several TRC members including Chris Sommers, David Dwinell, and Andy Jahn indicated that sediment cores might be available from the Bay Bridge Expansion work, although the group was not certain how the sediments were collected and why they were collected (e.g., for grain-size characterization rather than

environmental contamination characterization). Bridgette Deschiolds suggested that sediment cores be archived to be available for future analyses. Jay Davis indicated that all sediment samples were archived.

Dr. Davis proposed that mercury be the second pollutant to be modeled given the concerns over methylmercury in the Bay. Dave Tucker questioned why mercury was proposed if methyl mercury was the contaminant of interest. Jay Davis indicated that methyl mercury is not conservative (i.e., it is easily created and lost) and therefore, it would be difficult to model it using the current version of the model. Chris Sommers noted that the TMDL and the waste load allocations are both written for total mercury. Jim McGrath indicated that the development of a biological model that could model methylmercury was several years away and therefore, in the interim, it made sense to model total mercury. Jay Davis explained that part of the rationale for choosing mercury was that it was the first TMDL developed for the Bay Area.

Action item: Determine whether Caltrans or the Army Corps of Engineers has sediment core data for environmental pollutants of concern. Develop a method for the selection of the second pollutant to be modeled.

7. Lunchtime Presentation: Update on Research Activities in Russ Flegal's Laboratory at UC-Santa Cruz

Three presentations were given by Dr. Flegal's research group:

- 1) Metal/phytoplankton interactions during algal blooms in South San Francisco Bay (Allison Luengen)
- 2) Concentrations, speciation, and biogeochemical cycles of mercury in San Francisco Bay (Kit Conaway)
- 3) Mercury speciation and complexation in freshwater inputs to South San Francisco Bay (Frank Black)

Dr. Flegal's research group at University of California- Santa Cruz (UCSC) provided an update on the status of research activities. UCSC performs trace elemental analyses for the RMP.

At the end of the talks, Meg Sedlak thanked the speakers for their hard work on providing data to the RMP.

8 Information: Dissolved vs. Total Selenium Concentrations in Water

Following up on a comment made at the December TRC, Meg Sedlak provided a handout indicating that the dissolved selenium concentrations frequently exceed the total selenium concentrations. Ms. Sedlak provided several reasons as to why this might be occurring:

- The filtration process causes an increase in dissolved concentrations.

- Filter blanks were analyzed and concentrations were below the detection limit
- Samples are near the method detection limit (MDL) and, therefore, discrepancy is an artifact
 - The samples are generally above the reported detection limit; however, the detection limit is for deionized water not sea water and there may be interferences with sea water. It is possible the MDL is much higher for seawater.
- Incomplete recovery of total concentrations is causing the discrepancy
 - MSD/MS are good; however, for some samples they are several orders of magnitude above the environmental concentration.
 - Partial digestion of the sample. Laboratory notes that a film may form if samples are not agitated.

Ms. Sedlak indicated that SFEI did not currently understand the reasons for the exceedances; however, she had identified the following corrective measures: spiking the MS/MSD samples within the environmental range, working with the laboratory to avoid incomplete digestions, using new methods for analyses such as ICP-MS, soliciting advice from other laboratories, and splitting samples for the 2005 S&T.

Larry Bahr noted that his group had seen similar exceedances when they analyzed for dissolved and total selenium. Dave Tucker emphasized the importance of resolving this issue and suggested that the current data be flagged. Mr. Tucker suggested having three laboratories look at this issue (e.g., Frontier, Nick Bloom, and Brooks Rand). Mr. Tucker also questioned as to why the RMP was going to wait until summer and asked whether samples could be collected sooner to investigate this issue.

Action item: Follow up on corrective measures identified. Flag existing total data that are exceeded by dissolved concentrations

9. **Information: Update on Mallard Island and Guadalupe Studies**

Lester McKee presented an update on the Mallard Island and Guadalupe Studies. Ten samples were collected from Mallard Island in late December/early January as part of the analyses of the first flush. At the Guadalupe site, approximately 40 samples have been collected; six of which have been analyzed for the bed load. Dr. McKee reminded the group that for the Mallard Island and Guadalupe studies, OC pesticides have been dropped in favor of analyzing samples for PBDEs.

Dr. McKee stated that he was currently working on the Five-Year Plan for the Sources Pathways and Loading Work Group and that he anticipated a work group meeting the second week of April.

10. Information: Dredged Material Data Evaluation Special Study

Don Yee summarized the preliminary findings from the dredged data evaluation. The purpose of the investigation was to examine the differences between monitoring and dredge data sets. Monitoring data sets included RMP data, the California State Sediment Quality Objectives data set, EMAP, and USEPA data from Superfund sites. Data were reviewed to determine their utility. Dr. Yee found that the much of the PCB dredged sediment concentrations were below detection and therefore, of limited use. Don Yee investigated the impacts of seasonality, interannual variations, and depth. Don Yee concluded that the dredge data set can be used for comparative studies for most trace metals and PAHs (all other data sets were of limited use due to high detection limits or other artifacts). Dr Yee observed that the dredge data show seasonality effects or interannual trends.

Jim McGrath commented that shallow sediments (referred to as “fluff”) in the Ports tend to be more contaminated than deeper sediments. Andy Jahn commented that the interannual comparison would be affected by the fact that the US Army Corps is only allowed to dredge certain times of the year. In addition, smaller marinas might only dredge once every three to four years. Karen Taberski commented that she has not seen analyses of interannual variation for the RMP data and that this would be a good exercise for the ten-year synthesis articles.

11. Information: Update on Toxicity Studies

This item was dropped from the agenda as there were no activities conducted on these projects this quarter.

12. Action: Responding to Review Panel Recommendations

This item was dropped from the agenda as the memorandums were not ready for distribution.

13. Action: RMP Management Question Revision

Dr. Davis presented the revised RMP Management Questions and asked whether the TRC had any comments on the latest version. No additional comments were forthcoming and a motion was made by Karen Taberski and Chris Sommers to approve the revised questions. The motion was passed.

14. New Analytes

The new analytes that were incorporated into the RMP in 2002 were discussed in the December 2004 TRC meeting. The consensus in the December meeting was that all “new analytes” should be dropped except for PBDEs. At that time, the Committee felt that there was two years of data that could be evaluated and if it was decided that additional analyses were necessary they could be approved for future S&T sampling events.

Meg Sedlak provided a handout of the “new analytes” and asked that the TRC confirm that all “new analytes” with the exception of PBDEs were being dropped. Karen Taberski and Chris Sommers made motions for approval and the motion passed.

As Dr. Davis was unavailable for several minutes to address the next agenda item, Dr. Connor queried the group about the utility of the lunch time presentation. Specifically, Dr. Connor asked the TRC whether having UCSC participating in the RMP was beneficial in both in terms of publications and being associated with a research university. Dr. Connor pointed out that it costs the RMP more to use UCSC and that UCSC has a longer turn around time than a commercial laboratory. One member asked how much more it cost the RMP for methyl mercury analyses. Meg Sedlak stated that she believed UCSC charged the RMP approximately \$220 per sample and that Brooks Rand laboratory charges approximately \$135 per sample. Chris Sommers asked what the detection limits were for water and Don Yee indicated that Brooks Rand’s detection limit was 0.02 ng/L and that they were looking to lower the detection limits to 0.01 ng/L. Concentrations in the Bay are in the range of 0.01 ng/L. UCSC’s methylmercury detection limits in water are not known as UCSC is in the process of implementing its methyl mercury analyses. UCSC is hoping to have a detection limit of 0.008 ng/L.

The Committee indicated that it enjoyed having UCSC participate in the RMP; however, if their participation resulted in an increase cost and/or delay in the reporting of sample results then it was probably not a worthwhile collaboration. Dr. Connor suggested that the RMP could stay the course, use Brooks Rand laboratory and fund UCSC research through a PS/SS, or stop using UCSC all together. Chris Sommers requested that this be an agenda item for the next TRC meeting.

Action item: Place a discussion of UCSC’s participation in the RMP on the June TRC agenda.

15. Information: Workgroup Updates

Dr. Davis stated that the EEPS Work Group would be meeting April 4th to develop a five-year plan. He indicated that the work group solicited proposal for fish effects and received a very good proposal from Bob Spies of AMS who will collaborate with UC-Davis Bodega Bay. Lester McKee stated that the Sources, Pathways, and Loading Work Group will meet in the second or third week of April. The Contaminant Fate Work Group is scheduled to meet April 15th.

16. Information: Program Update and Laboratory Data Status

Meg Sedlak presented the revised Scorecard and commented that Don Yee was close to completing his 2001 dredge study. In addition, Ms. Sedlak had finished revising the Contaminant Literature Review so that most of the 2001 reports were now complete.

Ms. Sedlak stated that the Mercury Coordination Meeting was held on February 24th and approximately 45 people attended. These presentations are posted on the SFEI website. Ms. Sedlak also stated that Daniel Oros has initiated a multi-laboratory group to facilitate the transfer of information among Bay Area laboratories on new methods, QA/QC issues, and general information of interest to research scientists. Four groups will participate: CDFG, CalEPA, SFEI, and EBMUD. Each member in the group will host an open house. The first open house will be at Dave Crane's CDFG laboratory on March 29.

Ms. Sedlak also presented the laboratory status sheet and commented that UCSC had made a great effort to analyze the 2002, 2003, and 2004 sediment samples for methyl mercury. She also noted that AXYS had had some issues with blank contamination for PCBs and PAHs and loss of QA/QC samples for PCBs that had resulted in a delay of reporting times.

Ms. Sedlak indicated that the preliminary validation package submitted by EBMUD for the new high resolution mass spectrometer (HRMS) had several significant QA/QC issues that had impacted the results. EBMUD recently submitted a new package with split samples that were analyzed by AXYS; however, several QA/QC issues had been identified with this package as well. Ms. Sedlak indicated that she would speak with EBMUD in the next few days to trying to identify corrective action measures that could be initiated.

It was noted that Daniel Oros may go over to EBMUD to assist EBMUD in getting a HRMS on-line. TRC members noted that CalEPA has the ability to analyze PBDEs if the EBMUD laboratory is unable to get the instrumentation running in time for the 2005 S&T. AXYS is currently experiencing a nine-month delay in analyzing samples for PBDEs.

Action item: Meg Sedlak to work with EBMUD to identify potential corrective action measures to be implemented.

17. Action: Set Agenda and Date for Next Meeting

Jay Davis suggested that the TRC meet on June 21 at 10 am. Meeting was adjourned at approximately 3:00 pm.

ACTION ITEMS

ACTION	WHO	STATUS
Look into whether recent data on PCB congeners can be provided electronically	David Dwinell	
Talk with Dave Tucker about a joint TRC/TC meeting	Jay Davis	Meeting held on May 31, 2005
Provide an update to the TRC on the budget process approval memorandum.	Mike Connor	Will be given at June 2005 TRC meeting
Convene a work group to discuss Winter Sampling PS, the CTR Study and the Episodic Toxicity Study and how findings from these studies may result in the modification of the RMP	Sarah Lowe	Meeting will be held in the Fall 2005 to discuss these issues
Prioritize studies for the development and implementation of TMDLs	Mike Connor, Andy Gunther, and RWQCB	CEP/RMP meeting was held on May 31 st . This is an on-going issue
Follow up on corrective measures identified for Selenium analyses.	Meg Sedlak	Brooks-Rand is evaluating corrective measures.
Determine whether Caltrans or the Army Corps of Engineers have sediment core data for environmental pollutants	John Oram	
Develop a method for the selection of the second pollutant to be modeled.	Jay Davis	Discussions have occurred at CFWG and TRC
Place a discussion of UCSC's participation in the RMP on the June TRC agenda	Meg Sedlak	This will be deferred until the Fall as the 2005 contract with UCSC was signed in January 2005.
Help EBMUD to identify appropriate corrective actions to be implemented for HRMS analyses	Meg Sedlak	EBMUD methods are now up and running