

**Comments on the Draft Monitoring and Toxics Subcommittee  
PowerPoint Slides**

**Dated February 25, 2004, by Tom Grovhaug**

Submitted by  
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At the February 25, 2004, SRWP meeting, T. Grovhaug made a presentation on the SRWP monitoring program. This presentation was based on a set of PowerPoint slides. Requests were made at the presentation for comments. At the presentation I made a number of comments on the presentation. I have also subsequently reviewed the PowerPoint slides. My comments on them are presented below.

The slide entitled “Five Years of SRWP Monitoring” states, as the first two bullets,

- *“Early Focus – to develop and conduct a scientifically-defensible water quality monitoring program*
- *Kicked off in 1998 with monitoring goals and objectives derived from stakeholders”*

As an individual who was involved with Val Connor and several others in helping to shape the initial SRWP monitoring program, I feel it is important to point out that, initially, the stakeholders agreed to a suggestion that I made of following the Evaluation Monitoring approach that Dr. Anne Jones-Lee (my wife) and I had developed in our work in the Upper Newport Bay watershed in Orange County, California. Instead of a traditional monitoring program, where water quality parameters are monitored and then an attempt is made to determine if the monitoring data provide useful information about water quality characteristics of the water monitored, the focus of the SRWP program was to be on defining water quality use impairments and then developing programs to control the impairments. This approach was adopted in the early phases of the SRWP monitoring program; however, over the past three years or so, the program has fallen back to the more traditional water quality monitoring, which focuses on data gathering. As has been demonstrated by this set of PowerPoint slides, the goals and objectives of the program have shifted, with the result that the program is no longer defining problems, but simply collecting data.

By design, the initial monitoring was to determine if there were water quality problems associated with bioaccumulatable chemicals (such as mercury, organochlorine pesticides and PCBs), aquatic life toxicity (which would screen for toxicity problems due to heavy metals, organics and other chemicals), constituents that are known to impair the beneficial uses of waters for domestic consumption purposes, and impairment of contact recreation.

The slide “Goals and Objectives of the Current Program” states, *“Establish baseline conditions, understand variability, assess compliance.”* This is one of the problems with the current program. While this type of monitoring is traditional, it often leads to spending large amounts of money with limited success in solving real, significant water quality problems. For example, one of the problems that was investigated as part of the Evaluation Monitoring

approach that was initially adopted as a basic component of the SRWP monitoring program was that of excessive bioaccumulation of organochlorine pesticides and PCBs in fish tissue. The initial monitoring program focused some of the funds on this issue, and it was found that there is a significant water quality problem due to excessive bioaccumulation of organochlorine pesticides and PCBs (OCIs) in some Sacramento River watershed fish. However Grovhaug's summary of the current program, did not mention that the monitoring program had defined a major public health problem – excessive organochlorine bioaccumulation in edible fish. Throughout this program there has been a Fish Focus Group, of which I have been a member, which has provided attention to this issue. Further, in response to a request from the CVRWQCB, Dr. Anne Jones-Lee and I compiled a comprehensive review of the organochlorine legacy pesticide and PCB excessive bioaccumulation problems in Central Valley fish, which included the SRWP data:

Lee, G. F. and Jones-Lee, A., "Organochlorine Pesticide, PCB and Dioxin/Furan Excessive Bioaccumulation Management Guidance," California Water Institute Report TP 02-06 to the California Water Resources Control Board/Central Valley Regional Water Quality Control Board, 170 pp, California State University Fresno, Fresno, CA, December (2002). <http://www.gfredlee.com/OCITMDLRpt12-11-02.pdf>

Further, I have widely distributed a summary of the need for funding to properly address excessive bioaccumulation of OCIs, with particular reference to fish taken from the Sacramento River:

Lee, G. F., "Need for Funding to Support Studies to Control Excessive Bioaccumulation of Organochlorine 'Legacy' Pesticides, PCBs and Dioxins in Edible Fish in the Central Valley of California," Report of G. Fred Lee & Associates, El Macero, CA, July (2003). [http://www.gfredlee.com/OCI\\_Support.pdf](http://www.gfredlee.com/OCI_Support.pdf)

It was somewhat of a surprise that, at the meeting, Grovhaug indicated that there was no OCI excessive bioaccumulation problem in Sacramento River fish. On the contrary, the major issue that needs to be addressed, in terms of problem definition, is the excessive OCIs in fish from the Sacramento River. This problem is of at least equal, if not greater, significance to the public than the mercury problem, since it affects people of all ages.

Another problem with the SRWP monitoring program is that, for a number of years, the data were analyzed with respect to compliance with water quality objectives, based on median concentrations. As I have repeatedly pointed out over the years, this approach is technically invalid. A statistical approach for analyzing data is technically invalid with respect to determining whether there is an impairment of the beneficial uses of waterbodies due to a potentially toxic chemical. A single toxic event can have a significant adverse on aquatic-life-related beneficial uses of a waterbody.

The statement on the slide "Findings of SRWP Monitoring Program," "*Mercury levels in fish are lower than mercury loadings would suggest,*" has no technical basis. There is no way to relate mercury loadings to mercury levels in fish. We do not understand that coupling. The statement, "*Toxicity at the urban runoff site is worse than elsewhere in the watershed,*" also has

no meaning and should be deleted. Urban stormwater runoff in Sacramento is toxic. Agricultural stormwater runoff associated with areas where diazinon has been applied is also toxic.

The slide “Most monitored sites meet most water quality objectives” is a technically invalid approach for assessing water quality impairment, since it uses a statistical approach (such as, “< 95% for Hg and coliform WQOs, or mean TOC > 2 mg/L”). A single exceedence of a water quality objective can be disastrous in adversely impacting the beneficial uses of a waterbody. The studies that have been done have not involved the followup needed to properly implement an Evaluation Monitoring program to determine, where toxicity is found, whether it is adversely impacting the beneficial uses.

The slide “Drinking water quality is high” contains a figure entitled “Total Dissolved Solids.” This figure does not have the correct Basin Plan objectives for the Sacramento River. It is not 500 mg/L, but ranges from 230 to 340 µmhos/cm, which translates to approximately 150 to 200 mg/L TDS.

The slide “Total Organic Carbon” shows that there is a potential for TOC problems both with respect to water utilities that use the Sacramento River as a source of drinking water, and as a contributor to the TOC problem in the Delta that is adverse to the use of Delta water for domestic water supply purposes.

The slide “Fecal Coliform Bacteria” evidently is based on a MPN/100 mL for contact recreation. This needs to be specified.

The two slides on copper are appropriate; however, it would be appropriate to indicate that there is growing evidence that nickel and cadmium, even though they meet the current toxicity-based water quality objective, may be significant problems in the Sacramento River watershed and Delta due to bioaccumulation within aquatic life tissue which is harmful to the host organisms.

With respect to the slide “Toxicity at the urban runoff sites is worst,” this needs to be better defined. “Worst” compared to what – other urban sites? Agricultural sites? What is meant by “worst”? Is the toxicity significantly adverse to the beneficial uses of the waterbody? This is doubtful, compared to agricultural runoff diazinon which could be adverse to Sacramento River tributaries’ beneficial uses.

The slide “Plan for 2004” calls for a “5-year re-evaluation of SRWP Monitoring Program.” Before this is done, there is need to properly analyze the data that have been collected – not using statistical techniques on the frequency of exceedances, but presenting the data in terms of the potential for adverse impacts on the beneficial uses of the water. For several years I have been calling for a more comprehensive analysis of the SRWP Monitoring Program data. Last fall I raised this issue again, where I indicated that there was need to develop a comprehensive report. I was told by Kathy Russick that this would be done this spring. It now appears that this has been postponed again.