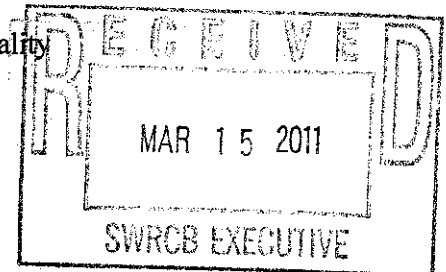


Summary and Recommendations on the Current and Proposed SQO Objectives based on

Comments on

“Draft Staff Report Substitute Environmental Document Proposed Amendments to the Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1 Sediment Quality for the Protection of Fish and Wildlife’ Report of State Water Resources Control Board Division of Water Quality
January 28, 2011”

G. Fred Lee, PhD, AAEE Bd. Cert. Env. Eng., F.ASCE
Anne Jones-Lee, PhD
March 14, 2011



Summary of Comments

The development of narrative sediment quality objectives can be a major step toward effecting reliable evaluation and regulation of pollutants in aquatic sediments provided that the SQO implementation is grounded in reliable evaluation of sediment toxicity and excessive bioaccumulation of chemicals that are a threat to human health for those who use aquatic organisms as food. Chemical concentration-based approaches should not be used in the estimation of sediment toxicity. Properly developed, technically sound TIEs are essential to the reliable identification of the cause of the sediment toxicity.

There is need to immediately correct the technical shortcomings and errors reflected in the Part 1 SQOs, including the elimination of the grandfathering of previously adopted sediment TMDL goals developed through co-occurrence-based sediment quality guidelines.

Unreliable approaches for sediment toxicity identification, including the statistical correlations and gradient analysis, should be removed from the toxicity identification procedures suggested in the current SQOs.

The chemical concentration-based so-called “chemistry” component of the current SQOs should be abandoned for use in evaluating sediment quality since it has been well-established that there is no relationship between the total concentration of a chemical in sediments and aquatic life toxicity.

The list of focus chemicals that can cause sediment toxicity needs to be expanded to include ammonia, nutrient-caused low-DO situations, and pyrethroid pesticides; those parameters in particular, should be given high priority for attention.

List of Primary Actions that should be Adopted by the SWRCB

- The Draft report fails to address several significant deficiencies in the September 16, 2008 SQO Plan that undermine the Plan’s technical validity. For example, use of co-occurrence-based sediment quality objectives is allowed by the September 16, 2008 SQO Plan if the Regional Board had incorporated them into TMDL goals adopted prior to February 19, 2008. Co-occurrence-based objectives and regulatory instruments should not be allowed. As discussed below there is immediate need to amend the Part1 SQO

plan to correct this significant error.

- The studies conducted by SWRCB contractors in developing the Part 1 SQOs Plan clearly demonstrated what had been demonstrated in the 1970 by Lee and his associates: there is no relationship between the total concentration of a chemical in sediments and its toxicity to or bioaccumulation within aquatic life. The wording in this Draft Report needs to state emphatically in that such approaches are not to be used in association with screening, evaluation, or management of sediments.
- One of the most significant deficiencies in the current SQOs is their limited scope of pollutant types that are addressed. The deliberate exclusion of ammonia, low-DO conditions caused by nutrient discharges to a waterbody, pyrethroid-based pesticides, and others and the inclusion of only a few of the well-known, and even less concerning, pollutants in aquatic sediments represents a very significant shortcoming in the current SQOs Plan that should be immediately corrected. Ammonia, pyrethroid-based pesticides, and low-DO conditions are among the most significant causes of real sediment toxicity. Large amounts of money will be spent in "remediating" sediments targeted because of their heavy metal content that may or may not be causing water quality problems, while ignoring known, more important causes of sediment toxicity is contrary to the public interests.
- The Part 1 SQO Plan should be immediately amended to eliminate the grandfathering of previously adopted, unreliable TMDL remediation goals based on co-occurrence-based approaches.
- Because of their inherent unreliability for this purpose, total contaminant concentrations should be eliminated from the SQO protocols used to evaluate "sediment quality" and sediment toxicity. Instead, narrative SQOs based on direct measurement of toxicity should be used as the primary tool for assessing sediment quality with respect to toxicity to aquatic life.
- Statistical correlations should not be used to try to identify the cause of sediment toxicity.
- The SWRCB/State of California needs to take aggressive action to prevent the US EPA Region 9 from further imposition of technically invalid co-occurrence-based TMDLs and remediation goals on California stormwater management agencies and other California dischargers.