

MEMORANDUM

Dan Cloak Environmental Consulting

To: Andria Ventura, Clean Water Action
From: Dan Cloak
Environmental Technical Representative to the Clean Estuary Program
Subject: **Report from 2 April 2004 CEP Technical Committee Meeting**
Date: 3 April 2004

Background and Setting

The all-day meeting was held to review and discuss four draft Conceptual Model/Impairment Assessment (CM/IA) reports:

- Legacy Pesticides
- Dioxins
- Selenium
- Diazinon/Toxicity

These reports contain initial analyses to support Water Board TMDL processes for these pollutants in San Francisco Bay.

Last week, I submitted comments on the Legacy Pesticides, Dioxins, and Selenium CM/IAs to the CEP. CEP staff compiled comments on the reports from various stakeholders, including the following:

- Water Board staff
- Bay Area Clean Water Agencies
- City of San Jose
- Bay Area Stormwater Management Agencies Association
- Western States Petroleum Association
- Grassland Area Farmers
- Environmental Technical Representative

Attendees at the meeting included Technical Committee (TC) members, commenters, and report authors. Rebecca Bryson of CONCUR facilitated the meeting.

Highlights and Items of Interest

The CEP will distribute a detailed summary of the meeting. The following points may be of specific and timely interest to Clean Water Action and the Environmental Justice Coalition for Water:

- The group discussed criteria for judging “impairment.” The regulatory definition of “impairment” may not always coincide with any of particular individual’s or group’s understanding of the scientific evidence that beneficial uses are actually impaired. There was a suggestion to adopt a semi-quantitative point system for judging impairment, but this just erects a façade over the contentious—but inevitable—subjective weighing of evidence. It was agreed to use the weight-of-evidence approach from the Lower South Bay copper/nickel TMDL, which employs five categories:
 - No impairment
 - Impairment unlikely
 - Possible impairment
 - Definite impairment
 - Cannot determine.
- Fish consumption is the key variable in determining whether the Bay is impaired by legacy pesticides, dioxins, and some other pollutants. See Figure 9 on p. 27 of the Legacy Pesticides CM/IA (2nd draft, 4 February). At the lowest screening value considered (16 g/day), only dieldrin appears to be a problem, and then only in two species; at the highest (107 g/day) dieldrin, chlordanes, and DDT all appear to be a problem. Tom Mumley (Water Board staff) supported using a range of between 16-32g/day, which he said was consistent with USEPA guidance. The same number should be used consistently for all pollutants.
- The consensus on **legacy pesticides** leaned toward “possible impairment.” There were some differences over specific pesticides. The major issues related to these pollutants are (1) their legacy nature, i.e. no current inputs; (2) strong association with sediments; (3) bioaccumulation; (4) low degradation rates. I advocated that the discussion of impairment, and of the associated uncertainties, should note that individuals who are most dependent on sport fishing for subsistence are also most likely to fish in the most polluted areas of the Bay.
- Regarding **dioxins**, data are insufficient to provide a judgment on impairment. Among the factors driving decisions about dioxins are
 - The high cost of sampling and analysis
 - Inconsistent use of definitions and measures, including whether to include dioxin-like PCBs and whether to consider total mass of dioxins or “toxic equivalents” (TEQ), which weighs different dioxins and furans according to their toxicity
 - Debate as to whether the principal dioxin sources are “legacy” (e.g. from breakdown of pentachlorophenol, a now-disused pesticide) or current (e.g. deposition by air from local or global sources).

Importantly, Mike O’Connor (SFEI) and Kelly Moran (TEC Environmental) noted that USEPA’s forthcoming dioxin plan will probably reduce threshold levels by approximately an order of

magnitude. Under these new criteria, sport fishing in the Bay could be judged to be severely impaired. However, this judgment may be complicated by evidence that exposure to dioxins is widespread and comes from many sources. I advocated that, with respect to dioxins and other pollutants, certainty is not a prerequisite to reasonable, prudent actions that protect the environment and human health.

- Speciation is the main factor that complicates any judgment of sources, fate and effects of **selenium** in the Bay. The 90% reduction in selenide discharged by north Bay refineries was soon reflected in water-quality samples; however, there was no detectable response in clam tissue concentrations. This suggests that the pathways that cause impairment may be more complex than originally thought. A meeting participant noted that the “in-valley disposal” option is the preferred alternative for the San Luis Drain project; however, two Delta disposal alternatives and a Morro Bay disposal alternative are still “on the table.” High selenium concentrations in South Bay waters are a mystery, but may be connected to geologic sources in the downstream part of the Guadalupe Watershed—someone mentioned that the dewatering pumps at the San Jose Airport discharge 1-2 MGD to the Guadalupe River, and local groundwater may be high in selenium.
- The phase-out of **diazinon** is already reflected in lower ambient water concentrations. There is substantial evidence that the Bay is not impaired by diazinon, and a delisting is possible. As Regional Board staff noted, this does not mean that there is no toxicity in the Bay.

Communication and Planning

Last summer, the CEP TC prepared an outline to be used in preparing the CM/IAs. The outline was successful in guiding development of the CM/IAs and insuring an overall consistency in approach.

The outline suggested that the reports include graphics illustrating the conceptual model; in particular, the graphics were to help the reader (including the TC) think through:

- Where are the links in the sources/transport/fate/effects causal chain that might be control points?
- Where should monitoring be done to detect changes?
- Which links in the chain have uncertainties?

As noted during the group’s discussion, the authors seemed confused about how to go about developing such a figure and integrating it into the text. Perhaps this happened because the figure is listed in the outline under “communications,” and the authors regarded it as an aesthetic illustration rather than as a way of thinking through the problem. This shows that although technical researchers and analysts working on Bay pollutant problems use the term “conceptual model” regularly, many do not yet fully understand how to use conceptual models as tool for analysis and planning.

I emphasized that the “planning” and “next steps” sections of each CM/IA, as currently drafted, are biased toward more data-gathering and analysis rather than evaluating and recommending proposed actions. (This is understandable since they were prepared by expert scientists who are not connected with regulators, dischargers, or advocates.) I suggested three options: (1) Have the authors take a “best shot” at suggesting and evaluating proposed actions; (2) Delete the sections entirely; (3) Convene the Technical Committee or another group to identify proposed actions to be evaluated.

After some discussion, it was agreed that the sections would stand but would be framed with paragraphs explaining that the recommended “next steps” were limited to considering data gaps encountered during development of the impairment assessment and that the CEP would pursue a process for identifying and evaluating proposed actions.

Next Steps

It was agreed that a process for identifying and evaluating proposed actions should proceed from the next TC meeting, scheduled for 7 April.

The authors of the four reports will produce new drafts for review by the Technical Committee. Schedules are shown in the monthly progress reports for each project.

Summary and Evaluation

In many respects, the reports and discussion validated the CM/IA process and the CEP TC’s outline from last year. Friday’s discussion was fast-moving, productive, and without rancor.

The TC’s discussions and the CEP’s resources need to focus on identifying, evaluating, and proposing actions that can be taken to reduce the effects of pollutants on aquatic life and human health (including remediation of “hot spots”). The results of the 2 April 2004 meeting were promising and this effort will be continued in upcoming TC meetings.