



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

June 24, 1997

Mr. Stephen Chao  
Naval Facilities Engineering Command  
Engineering Field Activity, West  
900 Commodore Way, Bldg. 210  
San Bruno, CA. 94066-2402

Re: *Technical Memorandum, Sediment Risk Characterization,  
Site-Wide Ecological Assessment, Moffett Federal Airfield,  
dated June 2, 1997*

Dear Mr. Chao,

The U.S. Environmental Protection Agency (EPA) has received the subject document. This technical memorandum (TM) was requested by EPA to respond to questions raised during the technical meeting of April 24, 1997. The purpose of this meeting was to clarify the characterization of risk to sediment receptors at Moffett Federal Airfield. We found the meeting helpful and appreciate the work that went into the TM. However, it appears that the results remain inconclusive. We believe the reason for this goes back to the fact that there were too few samples collected and hence the statistics are unable to produce any conclusive correlations. Uncertainties continue to exist. Attached comments reflect our disagreements with the TM.

The next step in the process was to take the conclusions reached in this ecological assessment and use them to move ahead with the Station-Wide Feasibility Study (SWFS). EPA agrees it is important to move forward. Although our comments indicate problems with the TM, we believe agreement on two other issues will determine the success of the SWFS and future remediation. They are the appropriate cleanup levels and the long term monitoring plan. Therefore, we are not requesting that any additional work be done on this TM. But we are including these general comments for the record. All prior responses to comments should now be included in a final version of the Phase II SWEA Report so that we can all move towards remediation of the ecological areas of Moffett Field. If you have any questions, please call Clarence Callahan at 415-744-2314 or me at 415-744-2385.

Sincerely,

Michael D. Gill  
Remedial Project Manager  
Federal Facilities Cleanup Office

cc: J. Chou (DTSC), K. Eichstaedt (URS)(email), T. Mower (PRC)(email), S. Olliges (NASA)(email), M. Rochette (RWQCB), P. Strauss (MHB)(email), K. Walsh (MW)(email)

## COMMENTS

*Technical Memorandum, Sediment Risk Characterization, Site-Wide Ecological Assessment, Moffett Federal Airfield, dated June 2, 1997*

1. Analysis 2. Trends do seem to exist, but low sampling density does not allow enough statistical significance. The test is really unable to predict anything. A 20% range of survival is not enough to allow a precise test. 20% is the range after Group 1 (one sample) is dropped from the data set.
2. Analysis 3. Attachment 2 shows correlation coefficients that are very good for arsenic, mercury, nickel and TOC. We compared two correlations, metals/TOC by survivability and metals by survivability and found little difference. This seems to indicate that TOC is not making any difference; that metals appear to be the only stressors. In addition, the statement is made that metals may be "co-stressors"; that is, they may have synergistic effects when present together. This could indicate even more toxicity.
3. Analysis 4. The statement is made that "...only arsenic and nickel were significantly negatively correlated with amphipod survival.". What about antimony (Sb)? The correlation coefficient in Attachment 3 is -.894 for both cases. This is significant.
4. Analysis 5. In addition to normalizing to ER-Ms, it would have been helpful to report critical toxicity values. ER-Ms alone only tell us what the distribution of effects are and not much about the toxicity.

It is stated that "nickel might be most responsible for amphipod toxicity". By comparing the straight correlation with the ER-M normalized values in Attachment 4, it can be shown that arsenic, mercury and antimony also have significant correlations, just like nickel.

5. Analysis 6. Table 2 on page 6 and Figures 1 and 2 in Attachment 5 have inconsistent PEL and NOEL numbers. We believe the notations in Figures 1 and 2 for PEL and NOEL should be swapped. In addition, the PEL needs more proof from actual test data. Literature values from Long and Morgan are insufficient.

The MacDonald data should not have been plotted on Figures 1, 2 and 3 in Attachment 5. Other compounds could have affected the toxicity in that data, which make it a different data set. To use the data set properly, you need to be sure that the compounds affecting the amphipod mortality are known.

6. Analysis 7. It is stated that "...evidence suggests that TOC may have a role in explaining toxicity to *E. estuarius*". By reviewing the scatter plots in Attachment 6, we could not find a negative correlation to conclude that TOC has a role in toxicity.

7. Analysis 8. The text states that "scatter plots in Attachment 7 indicate that arsenic, nickel, TOC-normalized arsenic and TOC-normalized nickel concentrations show trends of decreasing amphipod survival associated with increasing metal concentration.". As in Analysis 7, we cannot see this trend in the scatter plots.
8. Analysis 10. pH does not seem to have been considered in this analysis. It could have an effect on the echinoderm survivability due to ammonia and sulfides.