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TREASURE ISLAND
SSIC NO. 5090.3.A

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

February 5, 1997

Ernesto M. Galang
EFA West - Code 1832.5EG
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-2402

Re: Draft Ecological Assessment of the Clipper Cove Skeet Range for Naval Station Treasure Island dated October 22, 1996

Dear Mr. Galang,

The U. S. Environmental Protection Agency (EPA) has received and reviewed the subject document. EPA's comments are enclosed.

If you have any questions, please call me at (415) 744-2383 or Clarence Callahan at (415) 744-2314.

Sincerely,

Rachel D. Simons

Rachel D. Simons
Remedial Project Manager
Federal Facilities Cleanup Branch

Enclosures

cc: Jim Sullivan, NAVSTA TI
Chein Kao, DTSC
Gina Kathuria, CRWQCB
Martha Walters, SFCHD
H-9-2 File
Pat Helson, RAB Co-Chair
Paul Hehn, RAB Alt. Co-Chair
ARC Ecology, RAB
Bill Van Peeters, Code 18524
Admin Record (3 copies)
Sharon Tokian, PRC EMI

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Draft Ecological Assessment of the Clipper Cove Skeet Range for Naval Station Treasure Island dated October 22, 1996

General Comments:

1. EPA agrees that PAHs do not appear to pose a risk to potential receptors in the Bay, but there is not enough evidence to conclude that lead is not posing a risk. It can be concluded from the results of the bioassays that (1) lead or a factor that was not measured is causing bioassay toxicity or (2) the bioassay results are erroneous. EPA recommends that the cause of the toxicity be further investigated by incorporating this area in the off-shore remedial investigation. The Navy should include samples in the Clipper Cove Skeet Range area for analysis of a complete list of contaminants for further evaluation of the potential impact to sediment dwelling organisms. Bioassays should be included, especially between the dilution of 50% and 100% sediment material.

2. Based on the results of the bioassays, please provide EPA with the toxicity data from both the amphipod and echinoderm bioassays. Please also provide EPA with the following reports:

   - "Results of *Eohaustorius estuarius* Sediment Survival and Reburial Toxicity Tests, Reference SDG: TI078." Inchcape Testing Services Environmental Laboratories 1996

   - "Results of *Strongylocentrotus purpuratus* Embryo Development Toxicity Tests, Reference SDG: TI077." Inchcape Testing Services Environmental Laboratories 1996

Specific Comments:

1. **Section 1.2 Deviations from the Proposed Investigation Approach, page 1-2 and 1-3**

The appropriate sediment benchmarks are the San Francisco Bay ambient values developed by California RWQCB (1996). The pore water sample data should be compared to Ambient Water Quality Criteria (AWQC) U. S. Environmental Protection Agency (1994) or effects data as developed by the bioassays for this study. NOAA ER-L and ER-M data are not appropriate benchmarks since they not promulgated and are general in nature. Also, the NOAA ER-L and ER-M data are not specific to the environment of San Francisco Bay.

2. **Section 5.1 Sediment Screening Criteria, page 5-1**

The RWQCB preliminary ambient sediment screening values (1996) are appropriate for screening whole sediment chemistry, however the NOAA ER-L and ER-M data are not appropriate for this screening (see Specific Comment #1).

3. Section 5.2 Pore Water Chemistry Screening Criteria, page 5-3

The available EPA AWQC are appropriate for screening observed pore water contaminants. For the contaminants that do not have AWQC, screening levels should be developed from the bioassays performed in this study.

4. Section 5.3 Uncertainties, page 5-4

Bioassays performed in an appropriate manner would reduce all of the "uncertainties" listed in this section. The use of EPA AWQC for this study appears to be inadequate based on the uncertainties presented, whereas a site specific bioassay would reduce or virtually eliminate the uncertainties listed on this page. In general, bioassays are preferred when possible over literature derived benchmarks.

5. Section 6.1 Sediment Results, page 6-1

What is meant by the statement, "The lead fraction in the sediment that could be attributed to lead shot was calculated."? How was it determined that the lead found was from lead shot?

6. Table 6-1 Summary of Metal Concentrations in Sediment Grab Samples, page 6-1

Please present the detection limits for the metals listed in this table.

7. Table 6-1 Summary of Metal Concentrations in Sediment Grab Samples, page 6-1

Why are the results marked "J" estimated? How accurate are the estimated numbers? Are these values based on wet weight or dry weight?

8. Table 6-2 Summary of the Polynuclear Aromatic Hydrocarbon Concentrations in Sediment Grab Samples, page 6-5

Are these data based on dry or wet weight?

9. Table 6-3 Summary of Physicochemical Parameters Measured in Sediment Grab Samples, page 6-7

Why does the lead concentration data in Table 6-3 differ from the data reported in Table 6-1 (page 6-3)? These lead concentrations

also differ from the 0-1 ft core concentrations in Table 6-5. Please explain these apparent discrepancies.

Where are the data for the simultaneous extracted metals? How will the sediment BOD be interpreted? How are the percent solids data interpreted, are these parameters a measurement of the percent solids or the percent moisture? Have the metals data been adjusted by the moisture content? What is the significance of the acid volatile sulfides?

10. Table 6-4 Summary of Polynuclear Aromatic Hydrocarbon Concentrations in Sediment Core Samples, page 6-8 to 6-14

Why are some results in the table left blank, for example Station S-7 at 3-4' for 1,1'-Biphenyl? How are the rejected data to be rectified?

11. Table 6-5 Summary of Physicochemical Parameters Measured in Sediment Core Samples, page 6-15

How are the percent solids data interpreted? Please define what the data listed under "Percent Solids (Percent Moisture)" means? Are the recorded results percent solids or percent moisture? Have the metals data been adjusted by the moisture content?

12. Table 6-6 Summary of Sediment Lead Pellet Fraction Collected From Sediment Cores, page 6-16

Why is the data shown as a percentage? The data should be converted to mg/kg dry weight.

13. Section 7.6.1 Amphipod Whole Sediment Toxicity Test Results, page 7-6

The mean survival for the amphipod, *Eohaustorius estuarius*, was significantly different than the control for all samples tested. As stated in the text, neither ammonia nor sulfide appears to have adversely affected the amphipod test mortality. It appears that lead is above the significant level when considered on a dry weight basis, thus being a possible cause for the toxicity observed from these data presented. Also, was the lead concentration data presented in Table 6-1 or in Table 6-3 the measured concentration for the bioassay samples?

14. Section 10.0 Conclusions and Recommendations, page 10-1

From the data collected Table 6-5, many lead concentrations exceed the ambient levels, and thus could be the cause of toxicity in amphipod bioassays. The ER-L values of Long et al (1995) are not relevant for these comparisons (see Specific Comment #1). Lead concentrations observed at depth (3 to 5 feet) suggest that the lead shot have settled to these depths. The

physicochemical data, percent fines, show that the sediment in this area is extremely fine material, thus permitting the settling of any material like lead shot.

Although lead pellets were not found in high numbers, the lead concentrations in the samples from Table 6-5 were near or above the ambient level and the sediment characteristics indicate that indigenous sediment organisms would most likely be of the amphipod type i.e., small and interstitial. Based on the observed mortality of the amphipod tests, it is possible that indigenous organisms would be impacted based on these lead conditions. Therefore, lead may be related to the mortality of the amphipods and should remain a chemical of concern.