

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**SAN FRANCISCO BAY REGION  
2101 WEBSTER STREET, SUITE 500  
OAKLAND 94612Phone: (510) 286-1255  
Fax: (510) 286-1380  
BBS (510) 286-0404**September 6, 1996**  
**File No: 2169.6013 (SFG)***EMG 9/12/96*Mr. Ernie Galang  
Engineering Field Activity - WEST  
900 Commodore Drive  
San Bruno, CA 94066-2402**SUBJECT::** COMMENTS BY THE SAN FRANCISCO BAY REGIONAL WATER QUALITY CONTROL BOARD FOR ECOTOXICOLOGICAL TESTING SAMPLING AND ANALYSIS PLAN FOR DEVELOPMENT OF PETROLEUM CLEANUP GOALS FOR NAVAL STATION TREASURE ISLAND, dated August 23, 1996

Dear Mr. Galang:

Below are comments based on the San Francisco Bay Regional Water Quality Control Board staff's review of the referenced document.

**General Comments:**

1. In general, the document and approach is satisfactory. However, there are a few points which require clarification before field work can begin. We suggest that a conference call with interested agencies, the Navy, and their contractors might be the most efficient way to resolve our questions.

**Specific Comments:**

2. **Section 4.1, Regulatory Framework:** The Navy should cite San Francisco Bay Regional Water Quality Control Board Order No. 95-136, which required the San Francisco International Airport to determine soil TPH cleanup values based on a similar approach described in the subject document.
3. **Section 4.2, Soil Sampling and Analysis, page 15:** The Navy should provide the rationale used for selecting Sites 06, 12, 15, and 22 as the sites being representative of the types of TPH found at TI. There are a number of sites which have varying mixtures of petroleum compounds; why are these particular sites the most appropriate? Review of Tables 2 through 5 seem to indicate that the emphasis is on TPH-diesel; is this adequate coverage of other types of petroleum compounds?

One consideration for selecting the sites is the issue of assigning EC<sub>10</sub> to mixtures particularly where percentages of each compound might vary at the different sites.

The approach for selecting three soil samples at each of the four sites to represent high, medium, and low concentrations of TPH types seems clear. However, Section 5.2, page 19 sampling procedures are unclear as to whether the three samples will be homogenized or retained as separate for the testing.

Based on the results at the San Francisco Airport site, the medium concentration range of 100 to 1,000 mg/kg may need to be refined (although the constituents are different). It seems likely that the EC<sub>10</sub> value could fall closer to the 100 mg/kg concentration than the 1,000 mg/kg concentration. Will the range finding approach prior to performing the dilutions assist in honing in on the likely effects concentration? The Navy might consider taking backup soil samples at the medium concentration areas to be held and only utilized if needed, should the first attempt on the bioassay fail to identify an EC<sub>10</sub>.

This methodology also brings into question the selection of location 22HP19 at Site 22 at an immunoassay concentration of > 100 mg/kg, for similar reasons stated in the above paragraph regarding obtaining a meaningful range of dilution concentrations.

One concern with the proposed control site is that there has not yet been chemical analysis performed. RWQCB staff recommend taking soil samples from a different location as a backup, should the original location prove to be inappropriate as a control site.

4. **Section 4.3, Toxicity Testing and Section 5.3.1, Analytical Testing:** The Navy has proposed performing chemical analysis on the elutriate of the samples before performing the bioassays. Chemical analysis should also be performed on the elutriate of the control samples, as well, unless the results of the soil analysis will already be available to indicate there are no contaminants present.
5. **Section 4.4, Derivation of Cleanup Goals:** It is unclear what the outcome will be is the EC<sub>10</sub> values will be averaged by using the three samples from each site. Unless the subsequent dilutions from each concentration range (high, medium, and low) overlap, will it be appropriate to average EC<sub>10</sub> values. RWQCB staff would like to discuss this further with the Navy's contractors to better understand how the effects concentration will be used.

It is unclear from this section if the Navy's intent is to determine a cleanup goal for each one of the petroleum compounds, or if a cleanup goal will be assigned to a specific site, depending upon the mixture at that and sites with similar mixtures. Please clarify.

6. **Appendix A:** page A-4 describes the methodology for porewater extraction. Please modify to reflect the methodology to be used for elutriate preparation.

If you have any questions or concerns, I can be reached at (510) 286-4267 or contact Ms. Susan Gladstone at (510) 286-0840.

Sincerely,



**Gina Kathuria, P.E.**  
**Project Manager**



**Susan Gladstone**  
**Technical Support**

cc: Chein Kao, DTSC  
Rachel Simons, USEPA  
Jim Sullivan, NSTI  
Pat Nelson, RAB Co-Chair  
Paul Hehn, RAB Co-Chair  
Admin Record (3 copies)