



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

March 15, 1994

Ernesto M. Galang  
Western Division - Code T4A2EG  
Naval Facilities Engineering Command  
900 Commodore Drive  
San Bruno, California 94066-2402

Re: Draft Remedial Investigation Report - Phase I for Naval  
Station Treasure Island dated November 8, 1993

Dear Mr. Galang,

The U. S. Environmental Protection Agency (EPA) has received and reviewed the subject document and submits the following comments. The comments should be considered in developing the Phase II Remedial Investigation Work Plan and ultimately addressed in the Remedial Investigation Report.

I look forward to discussing these comments with the Navy at our scheduled project managers meeting on Monday, March 21, 1994. If you have any questions, please call me at (415) 744-2386.

Sincerely,

*Rachel D. Simons*

Rachel D. Simons  
Remedial Project Manager  
Federal Facilities Cleanup Office

Enclosure

cc: Jim Sullivan, Naval Station Treasure Island  
Tom Lanphar, California Environmental Protection Agency  
H-9-2 File

*Admin Record (3 copies)*

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DRAFT REMEDIAL INVESTIGATION REPORT - PHASE I  
NAVAL STATION TREASURE ISLAND - SAN FRANCISCO, CALIFORNIA  
DATED NOVEMBER 8, 1993

General Comments

1. For all Installation Restoration (IR) sites, the site description and history should include the following:
  - historical and current site use
  - existing and former buildings and structures
  - historical and current use, storage and disposal of chemicals
2. EPA does not agree with the conclusion of no further investigation for sites 4/19, 12, 14, 15, 16, 20, 22 and 24. EPA also does not agree with the conclusion of no further action for sites 5, 7 and 21. See specific comments for the individual sites.
3. Data from previous investigations should be considered when determining the nature and extent of contamination at a site. The data from previous investigations should be included on all figures and identified as validated or unvalidated.
4. During a site visit on February 14, 1994, Jim Sullivan pointed out three potential IR sites. These sites included two 90-day hazardous waste storage areas (near sites 4/19 and 3) and the area at buildings 342 and 343 which was used for sealed radiation services. Are these sites going to be addressed under the IR program?

Specific Comments

1. Section 1.2.4, Prior Assessments, Page 1-9

This section should include a comprehensive table or list of all IR sites including the sites that were eliminated from the IR program after the PA/SI.

2. Section 1.3.6, Pesticide Storage Area (Site 07), Page 1-16

Section 1.3.6 states that "excess pesticides and paint fluids were disposed of by pouring directly onto the ground or into stormwater drains east of building 62". The area where the fluids were disposed, the stormwater drains and pier 11 should be identified on Figure 11. Also identify the square and circular

shapes on the Figure 11.

**3. Section 1.3.11, Old Bunker Area (Site 12), Page 1-18**

The first paragraph of this section states that "both trench-type disposal units and general debris disposal areas" were constructed surrounding the bunkers. Show the locations of these units and areas on Figures 19 and 20. These areas should be investigated.

**4. Section 1.3.11, Old Bunker Area (Site 12), Page 1-19**

This section states that 86 surface soil samples and a single soil sample at 1321 "A" Westside Drive were collect at the site during previous investigations. Show the locations and results of these samples on Figures 19 and 20.

The last paragraph on this page states that aerial photographs and a geophysical survey were used to identify "potential waste burial" areas. These areas should be located on Figures 19 and 20 and should be investigated.

**5. Section 1.3.13, New Fuel Farm (Site 14), Page 1-20**

Clarify how many tanks are currently at this site and if the tanks are above or below ground. What type of fuel was released from Tank 4?

**6. Section 1.3.14, Old Fuel Farm (Site 15), Page 1-21**

Locate building 89 and 2nd Street on Figure 27.

**7. Section 1.3.18, Auto Hobby Shop and Transportation Center (Site 20), Page 1-24**

Show the previous locations of buildings 194, 224, 267 and 370 on Figures 33 and 34. The location of the four tanks east of building 225 should be included on the Figures 33 and 34. What were the results of soil borings B4 through B7 and why were they not included on the Figures?

**8. Section 1.3.18, Auto Hobby Shop and Transportation Center (Site 20), Page 1-25**

What is the current status of the stockpiled soils mentioned in the third paragraph?

**9. Chapter 5, Nature and Extent of Contamination, Page 5-1**

Define ambient concentrations as stated in the first paragraph.

10. Section 5.3.1, Site 4/19, Contaminant Sources, Page 5-7

To clarify Figure 6, show the location of the 55-gallon drums of waste oil and the stormdrain 30 feet from the pad. These areas should be investigated for possible contamination.

11. Section 5.3.2, Site 4/19, Sampling Objective, Page 5-7

What are the constituents of waste oil? The soil at this site should be analyzed for these compounds.

12. Section 5.3.6, Site 4/19, Recommendations, Page 5-11

EPA does not agree with the conclusion for no further investigation because the extent of the contamination for this site has not been fully defined.

Table 2 shows high concentrations of oil and grease and total petroleum hydrocarbons (TPH) in soil samples 1, 2 and 4 from the previous investigations. Also, Table 8 shows a high concentration of antimony (4820 mg/kg) for soil boring SB-6. This previous data needs to be addressed and further investigated as potential sources of contamination.

13. Section 5.4.5, Site 05, Geophysical Results, Page 5-13

Anomalies I and II should be located on Figure 8 and investigated.

14. Section 5.4.5, Site 05, Recommendations, Page 5-13

EPA does not agree with the conclusion for no further action for the following reasons. The locations where the asbestos was buried need to be identified on Figure 8. The future use activities that may disturb the asbestos at the site need to be considered.

15. Section 5.5.1, Site 06, Contaminant Sources, Page 5-14

The last sentence in the first paragraph states that the previous investigations reported primarily TPH-gasoline (TPHg) and TPH-diesel (TPHd), but soils were only analyzed for TPHd in the current investigations. Explain the rationale for this.

Table 3 shows high concentrations of mercury (Hg) in surface soil samples 2 (4,220 ppm), 6 (3,750 ppm) and 7 (775 ppm) from previous investigations. This previous data needs to be addressed and further investigated as a potential source of contamination.

Show the location of the paved yard and the sumps stated in the second paragraph on Figures 9 and 10.

During a site visit, it was observed that all building have been demolished from the site. Figures 9 and 10 should reflect this information.

**16. Section 5.6.5, Site 07, Recommendations, Page 5-22**

EPA does not agree with the conclusion for no further investigation because the site has not been fully investigated for possible contamination.

Section 1.3.6 states that "excess pesticides and paint fluids were disposed of by pouring directly onto the ground or into stormwater drains east of building 62". The area east of building 62 along with the areas around the stormdrains and near pier 11 need to be investigated for possible contamination.

**17. Section 5.8.1, Site 09, Contaminant Sources, Page 5-25**

Besides being used as a paint booth, what other activities have taken place in the foundry?

**18. Section 5.9.1, Site 10, Contaminant Sources, Page 5-28**

This section states that waste paints, thinners and solvents may have been released on ground near building 335. Most of the samples collected at the site were near the tanks where there were "no suspected sources". Explain the rationale for this. Additional sampling is needed on the ground near building 335. Show the location of the floor drain in the building where liquids were disposed on Figure 16.

**19. Section 5.11.1, Site 12, Contaminant Sources, Page 5-37**

EPA does not agree with the conclusion for no further investigation because the extent of the contamination for this site has not been fully defined.

In Table 6, data from previous investigations shows high concentrations of manganese in soil borings SB-16 (2,200 to 13,900 mg/kg) and SB-21 (2,700 mg/kg). Soil boring SB-21 is missing from on Figures 19 and 20. This previous data needs to be addressed and further investigated as a potential source of contamination.

Also the disposal areas and units mentioned in Section 1.3.11 need to be addressed and investigated.

**20. Section 5.12.4.2, Site 13/13A, Evaluation of Sediment Contamination, Page 5-44**

For Metals, the last two sentences states that "All of the inorganic constituents detected were present in most samples,

making it impossible to trace them to one sources. This leads to the conclusion that they are not a result of naval operations. Therefore, they should not be considered contamination." EPA does not agree with this conclusion and recommends that metals be considered when evaluating the sediments contamination.

**21. Section 5.12.4.2, Site 13/13A, Evaluation of Sediment Contamination, Page 5-45**

Define ambient concentrations as stated in the first paragraph.

For SVOC, the last sentence states that "The PAH concentrations found at NAVSTA TI reflect the ubiquitous nature of PAHs throughout San Francisco Bay and should not necessarily be considered a product of activity on NAVSTA TI". EPA does not agree with this conclusion and recommends that PAHs be considered when evaluating the sediments contamination.

**22. Section 5.13.1, Site 14, Contaminant Sources, Page 5-49**

EPA does not agree with the conclusion for no further investigation because the site has not been fully investigated for possible contamination.

Show the locations of the pits where sludge was disposed around the tanks on Figures 25 and 26. Sampling should be done in those areas.

**23. Section 5.13.2, Site 14, Sampling Objectives, Page 5-50**

As shown in Table 7, data collected from previous investigations detected TPHg in several soil samples. But the current investigations only analyzed soil for TPHd. Explain the rationale for this.

**24. Section 5.14.2, Site 15, Sampling Objectives, Page 5-54**

The last sentence states that soil boring locations were based on the results of the geophysical surveys and location of suspected oil contamination. Show these areas on Figure 27.

**25. Section 5.14.6, Site 15, Recommendations, Page 5-56**

For the EPA to consider this site for no further investigation, groundwater must be investigated.

**26. Section 5.15.6, Site 16, Recommendations, Page 5-58**

For the EPA to consider this site for no further investigation, groundwater must be investigated.

**27. Section 5.16.1, Site 17, Contaminant Sources, Page 5-59**

Show the location of the 130 ft. by 22 ft. spill area on Figures 31 and 32. Additional soil sampling should be done where this area is located. Also additional soil sampling should also be done to determine the extent of contamination near soil boring 17-SB02.

**28. Section 5.18.2, Site 20, Sampling Objectives, Page 5-63**

The last sentence states that soil boring locations were based on the results of the geophysical survey. Show these results on Figures 33 and 34.

**29. Section 5.18.7, Site 20, Recommendations, Page 5-65**

EPA does not agree with the conclusion for no further investigation because the extent of the contamination for this site has not been fully defined.

From previous investigations, Table 2 shows high concentrations of lead in surface soil samples 2 (700 mg/kg) and 3 (2,000 mg/kg). Table 2 also shows high concentrations of oil and grease and TPH for surface soil samples 2 and 3. This previous data needs to be addressed and further investigated as potential sources of contamination.

**30. Section 5.19.2, Site 21, Sampling Objectives, Page 5-66**

The last sentence states that soil boring were selected based on observable staining. Show the location of staining on Figure 5.

**31. Section 5.19.5, Site 21, Recommendations, Page 5-67**

EPA does not agree with the conclusion for no further action because groundwater has not been investigated and the extent of the diesel contamination has not been fully defined.

**32. Section 5.20.1, Site 22, Contaminant Sources, Page 5-67**

As stated in this section, show the locations of the storm drains where waste fluids may have been disposed on Figure 25 and 26.

**33. Section 5.20.7, Site 22, Recommendations, Page 5-72**

EPA does not agree with the conclusion for no further investigation because the extent of the contamination detected at soil borings 22-SB-01 and 22-SB-02 has not been fully defined.

**34. Section 5.21.1, Site 24, Contaminant Sources, Page 5-73**

Show location of leaking abandon underground pipe lines as stated in the first sentence on Figures 31 and 32.

**35. Section 5.21.7, Site 24, Recommendations, Page 5-76**

EPA does not agree with the conclusion for no further investigation because the extent of the contamination has not been fully defined. Section 5.21.1 states that building 99 could be a possible source. If this is the case, additional soil sampling needs to be done in this area.

The extent of contamination detected at soil boring 24-SB02 needs to be defined. If it is a possibility that the dirt pile was leveled, another soil sample should be taken in this area.

**36. Section 7.3, Fate and Transport of Contaminants, Page 7-29**

The site specific chemicals of potential concern need to be revised using data from the previous investigations and from the Phase II RI investigations.

**37. Section 7.4., Modeling of Contaminated Media, Page 7-37**

The volumes of contaminated soil for each site need to be revised after addressing these comments and incorporating the data from the Phase II RI investigations.

**Comments on the Draft Human Health Risk Assessment are in Attachment I**

**Comments on the Draft Ecological Assessment Report are in Attachment II**

**ATTACHMENT I**  
**Comments on the Draft Human Health Risk Assessment**

**Draft Baseline Human Health Risk Assessment  
Naval Station Treasure Island San Francisco, California  
dated November 5, 1993**

Dr. Sophia Serda, Ph.D. EPA Regional Toxicologist reviewed the subject document. If you have any questions, Dr. Serda can be reached at (415) 744-2307.

**GENERAL COMMENTS**

1. Section 1.3.3 and Appendix E, Exposure Assessment

No site conceptual model is presented. The conceptual site model is a basic element of any risk assessment and aids in the identification of all potential sources, pathways and receptors. Surface water and sediment pathways are not evaluated. The impact of ground water on sediments and the bay is not addressed. Also, it is unclear what criteria were used to determine that ground water is nonpotable.

2. Appendix B, Data Analysis

Soil samples were collected from 0-2 feet, 2-5 feet, and 5-8 feet. Future exposure scenarios evaluate soils from 0-8 feet. Soil contamination is not uniformly distributed and the addition of nondetect soil samples can mask elevated levels of contamination. Also, it should be noted that the current exposure scenario evaluates surface soils from samples taken from 0-2 feet below ground surface (bgs). However, to evaluate true surface soil samples should be taken from 0-6 inches.

3. Appendix C, Inorganic Background Levels

The background concentrations selected as ambient concentrations, surface soils in the Western United States, represent general inorganic background information. It is the local background that is of interest with respect to the background for inorganics at Treasure Island and therefore important in determining levels that may require remediation at the site.

4. Appendix E, Exposure Assessment

The exposure parameters used for the soil ingestion pathway are not the standard parameters and must be corrected. For example, the current residential exposure, child at Site 12 (Table F-1) the body weight (bw) parameter of 70 kg is incorrectly used; the correct bw for children is 15 kg. Also, for the future resident (child/adult) scenario (Table F-7) the soil ingestion rate of 120 mg/kg is erroneously used with an adult bw of 70 kg. To correct this discrepancy

and to maintain consistency with the current residential exposure scenario (child) calculate for the future residential scenario the child exposure separately from the adult exposure and present the results from both. (See attachment: *Region IX Preliminary Remediation Goals (PRGs) First Half 1994*, EPA 1994.)

#### 5. Appendix G: Exposure Model to Assess VOC Concentrations in Indoor Air

The indoor air concentrations for Sites G1, G3, and G4 calculated from a very simplistic model are high enough to be of a concern (concentrations with associated risk in excess of  $10^{-3}$ ). The VOC exposure model is based on very conservative parameters and must be refined to account for capillary fringe. The results obtained from the refinement of the VOC model must be included in risk assessment for Sites G1, G2, and G4. Additionally, examples of calculations must be provided to verify that the exposure model to assess VOC concentrations in indoor air was calculated correctly. VOC risk should be included in the risk assessment for sites G1, G2, and G3.

#### 6. Dermal Soil Absorption Values

Some of the dermal absorption values appear to be from Cal EPA or DTSC. A statement of the uncertainty associated with these values must be included in the risk assessment.

#### 7. Preliminary Remediation Goals (PRGs)

Preliminary Remediation Goals (PRGs) were not used in the Baseline Risk Assessment. It is unclear how PRGs were used in the RI/FS process. Please clarify.

The development of PRGs (Appendix G of the RI report) is inconsistent with standard risk assessment guidance. Region specific guidance on calculation of PRGs must be followed. There is no need to recalculate the PRGs. (See attachment: *Region IX Preliminary Remediation Goals (PRGs) First Half 1994*, EPA 1994.)

#### 8. Preliminary Assessment/Site Investigation (PA/SI) Data

Certain Sites at Treasure Island use the Preliminary Assessment/Site Investigation (PA/SI) Data in the Baseline Risk Assessment. Please clarify the rationale for determining when PA/SI data is used or not used in the Baseline Risk Assessment.

### SPECIFIC COMMENTS

#### 1. Site 1 - Medical Clinic

The maximum value for silver in Table C-1 at Site 1, 9.7 mg/kg, is inconsistent with the maximum silver value in Table 3-2, 7740 mg/kg.

## 2. Site 12 - Old Bunker Area

The results of the preliminary risk assessment for Site 12 completed in 1992 must be summarized in this document. Also, the soil data used for the preliminary risk assessment must be included in the current risk assessment for Site 12 .

## 3. Site 13 and 13a - Storm Water Outfalls

Explain why the Human Health Baseline Risk Assessment does not address storm water outfalls.

**ATTACHMENT II**  
**Comments on the Draft Ecological Assessment Report**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, Ca. 94105-3901

February 10, 1994

**MEMORANDUM**

**SUBJECT:** Review of Naval Station Treasure Island  
Draft Ecological Assessment Report

**FROM:** Clarence A. Callahan, PhD *Callahan*  
Biologist

**TO:** Rachel Simons  
Remedial Project Manager

I have reviewed the above report and provide the following comments. The material presented conforms in the most part to Region IX guidance and procedures with some exceptions. Basically the material represents the completion of the Scoping and a Phase I efforts. My comments will relate to the shortcomings of these efforts.

From the description of the sites, I would suggest that there are a few sites that can be dropped from consideration for completing an ecological risk assessment at this time. I would reserve final judgement until a site visit, however sites 21 and 25, the areas that may be impacted by the storm water and the potentially impacted shorelines for marine environments are the only sites that I would state definitely need an ecological assessment. Other sites that may need an ecological assessment include sites 7,8,11,16,19 and 20 based on the material provided. A site visit is needed to make a final decision.

The information provides a fairly good description of the sites in terms of physical and biological conditions, however at this time complete information should be included. For instance, Tables 6 and 7 should indicate whether or not the species was observed or expected or the list from the sources should be provided as an appendix.

p 72, Section 4.0, Ecological Effects Screening.

An important component of the ecological risk assessment process involves the identification of target goals for protection i.e., assessment endpoints and the quantitative process for evaluating whether or not these goals are achieved i.e., measurement endpoints (Suter, Chapter 2, in U.S. Environmental Protection Agency, 1989, Ecological Assessment of Hazardous Waste Sites: A Field and Laboratory Reference, EPA/600/3-89/013, W. Warren-Hicks, B.R. Parkhurst and S.S. Baker, Eds. Environmental Research Laboratory, Corvallis, OR). Although there is mention of assessment and measurement endpoints in this section, the concept is not well developed. For example, assessment endpoints should be identified that insure all of the resources are protected, including important or significant habitats. From the agency viewpoint, assessment endpoints are attributes of the environment that are related to the use of the site, particularly those uses after remediation. Assessment endpoints are broad in scope extending beyond the setting of cleanup concentrations or establishing an acceptable level of risk for some generic undesirable event. Assessment endpoints therefore are compatible with the future use of the site. Useful ecological endpoints must also be realistic, both with regard to achievement and an assessment of success, and they must consider future site constraints.

Measurement endpoints are quantitative data that link the existing or predicted conditions on the site to the goals expressed by the assessment endpoints. Achievement of the assessment endpoints is determined through measurement endpoint, thus there must be at least one measurement associated with each assessment endpoint. Criteria for the selection of measurement endpoints include:

- 1) measurement endpoints must be directly related to assessment endpoints;
- 2) measurement endpoints must be measurable i.e., quantifiable in terms of an effects level;
- 3) availability of existing data;
- 4) the relationship to known contaminants and pathways;
- 5) the natural variability; and
- 6) the temporal and spatial scale of the parameter (Suter, *ibid*).

The only suggestion of assessment endpoints are "protective capability, market value and abundance" without identifying endpoints that may be important to Treasure Island. Because of the large amount of urban landscape in a limited area and an island at that, there is some value in this habitat to the biological resources that utilize Treasure Island. I would suggest that assessment endpoints should include the "protection of unique habitats e.g., urban, grassland, broad leaf evergreen, coastal scrub, rocky shore, intertidal and open water areas." For urban habitats an assessment endpoint might be, "that the potential (avian and

mammal) receptors not be exposed to detrimental levels of contaminants.” Based on the COCs and the exposure, potential receptors are selected along with measurement endpoints for the assessment of ecological effects. The limited terrestrial habitats in the urban areas might be covered by a simple evaluation of potential impact to soil organisms (uptake) if it is determined that species as the robin and California mouse are acquiring a substantial amount of their food (particularly during nesting) from the urban areas (reproduction and food chain impacts). From the material provided, it would seem reasonable that robins and other birds feed on the ball fields or other grassy areas which might serve as points for sampling to obtain comparative levels of COCs i.e., reference locations and background.

The marine areas should be evaluated by consideration of toxicity and community structure as was apparently done but not explicitly described in terms of assessment and measurement endpoints.

From Table 10, it is apparent that the Yerba Buena Island acreage for rocky shore, intertidal mudflat, and open water needs to be determined in relationship to the potential impact to the IRP sites.

p 72, Section 4.1, Evaluation of Existing Criteria and Effects Values.

These effects criteria should be described in terms of the assessment-measurement endpoints to show the direct connection between them. The “effects criteria” listed state that water quality criteria for marine surface waters were applied in “modified form” which I believe was the “dilution factor of 100” method developed by Marshak (1986). There is no justification presented in the document for this modification. The measurement of COCs in groundwater at several points to determine the concentration as opposed to guessing at the concentration is a preferable approach. All estimates of chemical concentrations should be considered with a high degree of uncertainty that must be validated at the next level of effort i.e., Phase II lab and/or field efforts.

Section 4.1.1 Soils. The cited sources in this paragraph should be used to insure that detection limits are appropriate and then effects data from the literature compared to the ambient levels measured at the impacted sites. The only use of standards from the Canadian Ministry of the Environment and the Dutch Soil Cleanup (Interim) Act is for setting detection limits. The standard for effects or impacts is the no observable effects level (NOEL). Microtox® data may be appropriate if compared to results from a reference site because of the problems in interpreting the results as stand alone numbers.

p 76, Section 4.1.4 Sediments.

The Apparent Effects Threshold Approach (AET) is a reasonable approach, however the data developed has not been presented. For this report, I would like to see the a summary of the PTI (1989) data in graphical form. For each of the biological data sets, I would like to see the concentration of the chemical data plotted against the biological result e.g., X axis, concentration data, in the test sediment, Y axis, mortality of amphipods. The same kind of plot for both the bivalve larvae abnormality data and the benthic community composition data. Then show the same three responses for the field chemistry taken from the split samples collected at the same time.

p 77, Equilibrium Partitioning Approach. This approach is much less defensible than the AET because of its assumptions and the lack of field verification. The EPA Science Advisory Board (EPA-SAB-EPEC-93-002, 11/92) recognizes the relatively close association between laboratory toxicity data and the predicted by the EqP (between factors of 2 to 5). "However" the SAB states, "limited field data are available to assess the uncertainty associated with extrapolating values derived by the method to the natural environment. Thus, the accuracy and reliability of the method has not been fully characterized." Further, the SAB states, "..the predictive capability of EqP-derived criteria has not been demonstrated across a range of circumstances and field environments." And lastly, "Pore water concentrations, indeed, might allow prediction of bioavailability, in nature, when all routes of uptake are in equilibrium. The question of whether sediment associated organic contaminants are at equilibrium in nature is central to this point. The theoretical explanations that suggest that near-equilibrium is common in sediments are reasonable, although largely untested.... it emphasizes the need to understand under what conditions sediment associated organic contaminants are or are not at equilibrium with respect to the sediment particles, organic carbon, and interstitial water." I would not suggest using this technique to establish sediment quality standards. The appropriate standard is the NOEL determined by well designed bioassays.

The "standards" for soil quality, acute to chronic ratios, and levels toxic to plants do not have sufficient explanation for acceptance at this time. The detection limits are not shown; are they below the proposed action levels? Section 4.1.1 cites the reference, Fitchko (1989) but does not show the ratios and the source of the original data. The Contract Task No. 0199, Ecological Assessment Work Plan on page 8 states, "To characterize ecological effects a matrix will be created listing the toxic effects found for chemicals of concern and indicator species." This matrix is a good idea, but is not presented.

## Summary:

The material presented here represents Region IX procedures for an ecological risk assessment through the Scoping Phase and Phase I with some questions about the procedures and assumptions for several parts of the work. The following steps are represented by this material:

- 1-Identification of potential contaminants of concern; PRC may be a little premature in eliminating chemicals based on their standards that I think have problems;
- 2-Identification of non-listed species occurring or potentially occurring at the Base. This is fine.
- 3-Formulation of a preliminary conceptual model. Looks OK.
- 4-Identification of toxicological information pertaining to the effects of contaminants of concern for potential ecological receptors. This information is lacking in some cases and should be developed further.
- 5-Identification of data requirements and data gaps for the performance of a quantitative ecological risk assessment. This was done and is one of the strongest areas of the report.

The degree of risk characterization for Treasure Island and Yerba Buena Island is hampered by the lack of complete information for the ecological effects assessment. PRC has suggested that bioassays and further sampling of contaminated media be performed to reduce or eliminate the uncertainties related to the overall risk assessment. I agree that this is the best procedure to complete the work. Basically, the descriptive phase of the problem has been addressed with a few holes. The standards for comparison needs to be corrected and modified. Finally the bioassays need to be performed to confirm/validate the biological response to the contamination.