California Regional Water Quality Control Board
San Francisco Bay Region

1515 Clay Street, Suite 1400, Oakland, California 94612
510.622.2300 • Fax 510.622.2460
www.waterboards.ca.gov/sanfranciscobay

Linda S. Adams
Secretary for
Environmental Protection

Arnold Schwarzenegger
Governor

Date: February 26, 2010
File No. 2129.2011 (EKW)
GeoTracker No. T0609560708

N00221_001430
MARE ISLAND
SSIC NO. 5090.3.A

Department of the Navy
BRAC Program Management Office
Attn: Mr. Michael Bloom
1455 Frazee Road, Suite 900
San Diego, CA 92108-4301
Via E-mail: michael.s.bloom@navy.mil

SUBJECT: **Comments on the Draft Remedial Investigation Report for Investigation Area K, Former Mare Island Naval Shipyard, Vallejo, California**

Dear Mr. Bloom:

I reviewed the November 20, 2009, *Draft Remedial Investigation Report for Investigation Area K* (Draft Report). The Draft Report presents the results of sediment sampling conducted in Investigation Area (IA) K along the eastern side of Mare Island and an updated baseline ecological risk assessment (BERA). The Draft Report recommends conducting a feasibility study in the area of elevated chemical concentrations around several outfalls based on the analytical data and the results of the BERA. Water Board staff comments are presented below.

General Comments

1. The State Water Resources Control Board adopted Resolution 2008-0070, Water Quality Control Plan for Bays and Enclosed Estuaries, on September 16, 2008. This Plan became effective August 25, 2009 and establishes sediment quality objectives for the protection of aquatic life using a multiple line of evidence approach. Please confirm that the Baseline Ecological Risk Assessment (BERA) was conducted in a manner consistent with this Plan.

2. Clarify how petroleum hydrocarbons are addressed in the BERA. Specific toxicity information is not available for the petroleum hydrocarbon compounds detected in site sediment. The BERA includes total petroleum hydrocarbons quantified as diesel and as motor oil as chemicals of potential environmental concern, but does not discuss how they are evaluated in the context of the BERA or how they are eliminated as final chemicals of concern.

3. Water Board staff suggest providing cross-section figures showing lithology and sediment sampling locations. At least one figure for each of the four investigation areas will provide a

visual aid to assist the reviewer with understanding the depth from which samples were collected relative to top of sediment, historic dredge depths, and water elevation.

4. Please add page numbers to each of the tables in the form of Page # of #.

Specific Comments

1. Section 1.4: Clarify the boundaries of IA K. The description in the text is confusing.

2. Section 2.1.1: Complete the sentence at the end of the first paragraph.

3. Section 2.3.1.2: Include a discussion regarding the sampling protocol for clams and specifically clarify why samples were combined if an adequate number were collected. This information is in Table 2-3, but not in the text.

4. Section 2.3.2: The text states that "supplemental" samples were collected from within cells 3, 4, 5, 7, 8, 9, 12, 14, 16, 42, and 47 to characterize contamination within offshore areas suspected to have been impacted by surface water runoff and historical offshore activities. Discuss how these cells were selected and state which of these suspected conditions each cell represents.

5. Table 2-1: Define "PCB" in the end notes. In addition, clarify which analysis was conducted, congener or Aroclor.

6. Section 3-8: Discuss the three habitat types shown on Figure 3-4, which is referenced in the text.

7. Figure 3-2: Revise the figure so that the 5-foot contours can be seen on the figure. The color used for the contours is too light.

8. Figure 3-3: The bathymetric information shown on the figure is difficult to discern. Due to the small scale of the figure, the various shades of blue used are not differentiated enough to interpret the site information.

9. Figure 3-4: Define each habitat area. No information is provided about each habitat area (Habitats 1, 2, and 3) shown on the figure or discussed in the text of Section 3.

10. Section 4.1.1.1, last paragraph: Revise the last sentence to read …"there are no known continuing Navy-related sources…"

11. Section 4.2:

    a. Include a discussion of how organotins were evaluated. No screening criteria are discussed.

b. Include a discussion of how petroleum hydrocarbon results were evaluated. Provide the basis for the screening criteria of 110 and 500 milligrams per kilogram for total petroleum carbons quantified as diesel and motor oil, respectively.

12. Section 4.2.2: The "Water Board study" cited for ambient sediment concentrations is referenced incorrectly in the text and references. The citation is from an article prepared by Water Board staff in cooperation with personnel from EcoAnalysis, Inc., that was published in the San Francisco Estuary Institute's 1997 Annual Report. Please correct the citation.

13. Section 4.2.4: Discuss the differences between the congener and Aroclor analyses and clarify why only the congener data was used in the data analysis. The text does not explain clearly why only the congener data, which comprise 70 percent of the PCB results, were used.

14. Section 4.2.8: State whether any detection limits were elevated (e.g., due to matrix interference) to concentrations greater than screening criteria. If so, justify the use of zero for these "non-detect" values in the data analysis.

15. Section 4.2.12: Include a reference to Figure 4-7 in the text.

16. Section 4.3.1: Clarify why detected concentrations were averaged for comparison to screening criteria.

17. Figure 4-5: Put cell numbers on the figure. Because the figure presents information from Table 3, which is by cell number, it is difficult to relate the figure to the table.

18. Figure 4-15: Include the ER-L and ER-M values in the note regarding concentration being less than ambient for reference. Add this information to other figures with the same note.

19. Figures 4-76 through 4-79: Reorder the chemicals in data tables (spider diagrams) to match the order in the Screening Criteria table.

20. Table 4-1: Include a column with related offshore cell number for each site.

21. Table 4-3:

    a. Revise cells 11-13 to reflect that dredging was conducted. Figure 4-5 shows these cells as part of "Other Former Dredge Area."

    b. Change the reference to Figure 8 in Note (a) to the correct figure number.

22. Table 4-4: Show the quantitation units for the "Average Detection Limit Value" and "Average Detected Concentration."

23. Table 4-6: Clarify why the PCB Aroclor results are included in the table if they are not used in the data analysis and BERA.

24. Section 5.0: For the areas that are characterized as depositional, include a discussion of the source of the sediment.

25. Section 5.3: Provide a reference for the 10-centimeter thickness of the biological active layer for the benthic community.

26. Section 5.4: Revise the text and provide justification for elimination of degradation processes and products as a concern. The text states that dechlorination of PCBs does "not necessarily result in the transformation of the contaminant to innocuous products." However, in the next sentence, degradation is eliminated from further evaluation.

27. Figures 5-2 through 5-5: Provide a reference figure for the exposure units (EUs) noted on the figures. The term "EU" is shown but hasn't been defined prior to these figures in the Draft Report.

28. Section 6.0: Include a discussion of the exposure pathway and whether it is complete or not at the outfalls and the sand blast material area. It is not clear in the text whether people, such as maintenance workers or recreational users, could come into contact with sediment at outfalls that are not submerged and with sediment in the sand blast material area that contains chemicals.

29. Section 7.2.2.3: Discuss the uptake of chemicals into plants at the site. Plant life can be impacted by chemical concentrations in soil/sediment and animals that feed on the plants can be adversely affected. The conceptual site models do not address this exposure route, which could be applicable at Mare Island. For example, the salt marsh harvest mouse eats pickleweed, both of which are present at Mare Island.

30. Section 7.4.2.4: Expand the discussion regarding the selection of the toxicity categories. Explain how 50 percent was selected as the cutoff between "clearly" toxic and "possibly" toxic.

31. Figures 7-2 and 7-3: Add plant uptake to the food web and conceptual site model.

32. Section 8.0:

    a. Identify the areas and outfalls for which a feasibility study is recommended. Clarify if the areas of ER-M exceedances that "pose a potential localized risk to benthic populations" are included in the areas for the feasibility study. Further, discuss how the ER-M is the appropriate screening value to make this determination. Explain why outfalls 23, 25, and 30, at which elevated concentrations of chemicals were detected, are not included in the discussion.

    b. Revise the discussion regarding detections at concentrations greater than the ER-Ms to include a list of the "exceptions." If these exceptions are not to be addressed in the feasibility study, provide the reasoning.

c. No discussion regarding uptake of chemicals into plants is included in the Draft Report. If this pathway poses a risk to ecological receptors (plants and animals), revise the text to indicate how the Navy will address this risk.

If you have any questions, you can contact me via phone at (510) 622-2440 or e-mail at ewells@waterboards.ca.gov.

Sincerely,

Elizabeth K. Wells

Elizabeth Wells, PE
Water Resource Control Engineer

Distribution (via E-mail):

Department of the Navy
Ms. Heather Wochnick – heather.wochnick@navy.mil
Ms. Marie Dreyer – marie.dreyer@navy.mil

Department of Toxic Substances Control
Ms. Janet Naito - jnaito@dtsc.ca.gov

Environmental Protection Agency
Ms. Carolyn d'Almeida - dAlmeida.Carolyn@epamail.epa.gov