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

April 27, 2007

Mr. Thomas Macchiarella, Code 06CA. TM
Department of the Navy
Base Realignment and Closure
Program Management Office West
1455 Frazee Road, Suite 900
San Diego, CA 92108-4310

Re: Review of the Draft Revision 1 Remedial Investigation Report IR Site 20 (Oakland Inner Harbor) and IR Site 24 (Pier Area), Alameda Point, California, February 2007

Dear Mr. Macchiarella:

The U.S. Environmental Protection Agency (EPA) Region 9 has received the Draft Revision 1 Remedial Investigation Report IR Site 20 (Oakland Inner Harbor) and IR Site 24 (Pier Area), Alameda Point, California, dated February 23, 2007. We have reviewed the aforementioned document and the Navy's responses to our May 18, 2006 review comments on the draft version. Our comments are enclosed.

If there are any questions, please feel free to contact me at (415) 972-3002.

Sincerely,

Xuan-Mai Tran
Remedial Project Manager
Federal Facilities and Site Cleanup Branch

cc: Andrew Baughman, BRAC PMO, West
Mary Parker, BRAC PMO
Erich Simon, SFRWQCB
Dot Lofstrom, DTSC Sacramento
George Humphreys, RAB Co-Chair
Peter Russell, Russell Resources, Inc.
John Chesnut, EPA

Review of the Draft Revision 1 Remedial Investigation (RI) Report for IR Sites 20 and 24, Alameda Point, California
and
The Responses to Comments on the Draft RI Report for IR Sites 20 and 24, Alameda Point, California
February 2007

GENERAL COMMENT

1. Based on the RI results, the Human Health Risk Assessment (HHRA) found an excess cancer risk of 9×10^{-4} for shellfish consumption (primarily due to arsenic, chromium, polynuclear aromatic hydrocarbons [PAHs], and polychlorinated biphenyls [PCBs]) and an excess cancer risk of 2.2×10^{-3} for fish consumption (mostly due to arsenic and PCBs). The total reasonable maximum exposure (RME) hazard for adult fish consumption is 27.13 and for children the total RME hazard 12.9, based on all data and 22.8, based on 2005 surface sediment data. Although the text states that these IR Site 20 risks are similar to risks associated with the reference area, the text needs to expand to include more supporting information to show why NFA is recommended (i.e., (1) future dredging will reduce the contamination in surface sediment; (2) high percentage of cancer risk is associated with arsenic in the fish and shellfish consumption; however, according to ATSDR, "most of the arsenic in fish and shellfish is the less harmful organic form"; (3) there is a fish and shellfish consumption advisory in place; etc.). The supporting information would help the reader to understand better why NFA is recommended for IR Site 20.

SPECIFIC COMMENTS

1. **Executive Summary, Page viii, Section 9.2.1, Nature and Extent of Sediment Contamination, Page 9-3 and Response to Specific Comment 1:** It is unclear why the text in these sections and in the response indicates that silver is naturally occurring at IR Site 24. If it was naturally occurring, one would expect that the distribution would be fairly uniform, but the highest concentrations of silver were detected in sediments near Outfall J. Since silver had many industrial uses, including battery cathodes, electroplated bearings used in aircraft engines, for brazing, for soldering (including copper pipe), electroplating, photography, and for electrical components, it is likely that the silver found in Site 24 sediments is related to former industrial activities at Alameda Point. The Navy also experimented with using silver as an anti-fouling additive to marine paint. Please delete all references to naturally occurring silver and discuss industrial activities that may have resulted in release of silver to Site 24 sediment.

   Similarly, the text in these sections and in the response indicates that nickel is naturally occurring, but it appears that there are areas near the outfalls where there are higher concentrations of nickel in sediment. The concentration of nickel in surface sediment appears to be higher than in subsurface sediment, when a natural distribution would be

more uniform. Since nickel is a constituent of most steel alloys, and is also used in electronics, batteries, for plating and electroplating, and in various other industrial and construction applications, it is likely that former industrial activities at Alameda resulted in releases of nickel through the outfalls. Please delete references to naturally occurring nickel and discuss the industrial activities that may have resulted in releases of nickel through to the outfalls.

2. **Section 4.2.1.3, Subsurface Sediment Spatial Distribution, Page 4-7 and 4-8:** Although the text states that the distributions of copper, lead, and nickel are uniform across depth, a comparison of the bubble plots in Appendix A indicates that the concentrations of these metals vary with depth. In addition, the distribution of other metals, like cadmium, is not discussed in the text. Please revise the text to indicate that the distribution of copper, lead, and nickel is not uniform across depth and discuss the distribution of the other metals.

3. **Section 4.3.1.1, Surface Sediment Spatial Distribution, Pages 4-11 and 4-12:** It is unclear why this discussion does not include the 2006 data, since it appears that the concentrations of cadmium, chromium, lead, nickel, selenium, silver, and zinc exceed their effects range median (ERM) values. Please revise the text to include a discussion of the 2006 data.

4. **Section 4.3.2.3, Surface Sediment Spatial Distribution, Page 4-15:** The 2006 data do not support the statement in the text, "A visual examination of the concentrations by depth on the box plots in Appendix A shows that concentrations of PAHs are relatively uniform or decrease across sampling depth." Beneath the roadway, it appears that the highest concentrations of some PAHs like anthracene, acenaphthene, naphthalene and fluorene, is in the 5 to 25 centimeter depth interval. Please delete or revise the quoted statement.

5. **Section 9.2.3, Human Health Risk Assessment, Page 9-5 and Section 7.2.1.2, IR Site 24, Page 7-3:** It is unclear whether the exposure pathways assessment includes the area under the roadway at Site 24. A description of the water depth has not been provided, and in places the text calls this area a "sediment shelf," which implies a depth shallower than 40 feet that could possibly support clam beds. During the Regulatory Agency site visit, sediment was visible in the vicinity of Outfall J, which suggests that there may be habitat for clams. Please provide a more complete description of the area beneath the piers and roadway. If there are areas where clams could live under the roadway, please calculate the risk for this pathway, since it is possible that the roadway could be removed or require replacement in the future.

6. **Section 9.3, Recommendations, Pages 9-5 and 9-6:** Since Site 24 was apparently recommended for evaluation in an FS based on exceedences of the ERMs, all areas that have exceedences of the ERMs, including open-water areas south of Piers 1 and 2 should be included in the FS. Please revise the recommendation for an FS also to include open-water areas where the ERMs are exceeded.

COMMENTS ON THE HHRA

1. Food-related ingestion pathways could represent significant potential exposure to contaminants of potential concern (COPCs) such as polychlorinated biphenyls (PCBs), due primarily to bioaccumulation potential and food chain impacts. Despite the fact that health advisories are in effect with regard to all major waterways within the San Francisco Bay Area, this report attempts to minimize the impact of and potential for shellfish ingestion exposure attributable to children. Recreational exposure through ingestion of shellfish by local residents is a complete exposure pathway – and is relevant for adult and children. Arguments to support exclusion of child exposures based on small exposed population sizes are not relevant given that the pathways associated with these exposures are reasonable and complete. This risk evaluation, as a baseline, will help to form the basis for site risk management decisions. The HHRA must be more representative of the surrounding populace. Please revise the HHRA to address shellfish ingestion by children. Additional exposure routes, such as infant exposure to PCBs via the ingestion of mother's breast milk may also be considered viable pathways of exposure. This pathway has not been considered in the Conceptual Site Model (Figure 7.1. Human Health Conceptual Site Model [CSM]). Addition of this pathway to the quantitative analysis does not appear to be critical. However, please consider adding a qualitative assessment of the associated potential risk to a nursing infant to the Uncertainty Analysis.

2. The 95th percentile soil ingestion rate value used to evaluate sediment ingestion is one-half the recommended value presented in USEPA's 2006 Child-Specific Exposure Factors Handbook (ChEFH). Please consult the 2006 ChEFH during the selection of pertinent exposure parameter values (e.g., fish tissue ingestion rates) during HHRA development in the future.

3. It appears the HHRA considered only detected compounds during the COPC screening process. To the greatest extent practicable, the HHRA should represent a stand-alone document. A discussion should be included in the text to indicate that all non-detect results were reviewed to ensure that the associated reporting limit was sufficiently sensitive (in comparison to the most relevant health-based screening criterion) to ascertain whether or not the contaminant at issues was present at a concentration capable of eliciting an adverse human health effect. Non-detect results associated with an elevated appropriate reporting limit (e.g., a sample quantitation limit [SQL], rather than a method detection limit [MDL]) should identify that associated target analyte as a site COPC. Please verify that COPC screening considered reporting limits during the evaluation of non-detect results.

4. In the next version of this document, care should be taken to differentiate between risk and hazard, in particular, Section 7.4.3 (Risk Characterization Results) and corresponding tables (i.e., Tables 7-6 through 7-14). These terms are not interchangeable and proper terminology usage will facilitate understanding. Please revise the text to use the terms risk and hazard correctly in the text and tables.

SPECIFIC COMMENT

1. **Table 4.2. RME. Reasonable Maximum Exposure Values Used for Daily Intake Calculations for IR Site 20, Page F-22:** The exposure duration (ED) value for an adult fisher ingestion of forage fish scenario reflects central tendency, rather than RME, conditions (i.e., 9 years). Please revise Table 4.2 so that this ED is changed from 9 years to the RME ED of 30 years and ensure the associated quantitative expressions of site-related risk and hazard are updated, as necessary.

COMMENTS ON THE RESPONSES TO EPA COMMENTS

Response to General Comment #3: The response partially addresses the comment. The Navy did not address the uncertainties that may arise from the spatial and temporal gaps between measurement endpoint sampling efforts.

Response to Specific Comment #4: The response does not address the comment. Although it is understood that the approach has been approved and supported by EPA, additional supporting information should be provided in the Remedial Investigation (RI) Report to summarize the approach and results of the documents used to justify removal of radiological contaminants of potential ecological concern (COPECs) from further consideration at the site. The information does not need to be provided in Section 2.1.2. Please revise the document to include a summary of past study results, along with complete references to these documents.

Response to Specific Comment #11: The response indicates the text of Section 2.1.2 has been modified to include a reference to the Storm-Sewer Study Report for Alameda Point, Alameda, California (TtEMI, 2000); however this reference was already included in the previous version of the RI report. It may be helpful to state in the text that the building locations and their associated IR sites are further described in the Storm-Sewer Study Report, as the current citation of this report is not related to building locations and respective activities.

Response to Specific Comment #15: The response addresses the comment by adding text to the RI report; however, groundwater discharge and other mechanisms (wave action, harbor activity, and bioturbidity) have not been added to Figure 3-1 as requested in the original comment.

Response to Specific Comment #16: The response partially addresses the comment regarding the rationale for excluding surface water as a potential contaminated media at the site. The response does specify the contaminants of potential ecological concern (COPEC) detected at the site for the first listed rationale, as requested. However, the text should still be expanded to include a more complete rationale for each of the three presented points, in order to justify excluding surface water as an exposure pathway. For example, for the first listed rationale, in addition to specifying the COPECs, provide a general discussion on site-specific sediment and water chemistry, and include further information on these COPECs to justify the statement that

they are fairly insoluble and will not partition under site-specific conditions, among others. The second and third presented points also require more detailed rationale. Please revise the RI Report to include this information.

Response to Specific Comment #23: The response partially addressed the comment by removing the sentence stating that "locations of higher concentrations were sporadic and not consistent through time." However, the text of the RI report was not modified to include the contaminant associations specified in the original comment. Please revise the text to include the contaminant associations discussed in the comment.

Response to Specific Comment #26: The response partially addresses the comment; however, the text was not modified to discuss the potential that the observed contaminant distribution is the result of discharges from the outfalls. The Navy states that use of the term "urban background" is intended to imply that the site has been affected by a wide variety of sources. While this term is intended to encompass outfall discharges, please specifically state that discharges from the outfalls are a potential source of contamination.

Response to Specific Comment #30: The response partially addresses the comment. The referenced sentence, as currently written, acknowledges that the samples between years are not co-located and concludes that "the elevated pesticide concentrations observed in the surface sediment in 1996 are not currently present in IR Site 24 surface sediment (e.g. *alpha*-chlordane), or are confined to very small areas in the immediate vicinity of the outfalls and eastward of the quay wall (e.g. dieldrin and 4,4'-DDx)." This statement implies that pesticide concentrations declined over time, based on elevated pesticide results from a 1996 data set as compared to the 1998 and 2005 data set, when the more recent data sets were not co-located with the 1996 data set. Please revise the text to acknowledge that this apparent decrease over time may be associated with the distance between sampling locations, or remove the statement from the RI Report.

Response to Specific Comment #33: The response addresses the comment; however, the Navy states that the expanded text added to the Executive Summary has been added to this section. A review of the RI Report text indicates that some, not all, of this expanded text has been added to Section 4.3.5. Please include the full expanded text in this section.

Response to Specific Comment #37: The response addresses the comment. However, this information should be included in the RI Report.