Cal/EPA

January 27, 1997

*Department of Toxic Substances Control*

*700 Heinz Avenue Suite 200 Berkeley, CA 94710-2737*

*Pete Wilson Governor*

*James M. Strock Secretary for Environmental Protection*

Engineering Facility Activities, West
Attn: Mr. Richard Powell [1832]
900 Commodore Drive
San Bruno, California 94066-5006

Dear Mr. Powell:

**PARCEL C REMEDIAL INVESTIGATION (RI) REPORT HUNTERS POINT**

The Department of Toxic Substances Control (Department) received the Parcel C RI report on 12/2/96. Despite data gaps, inadequate site characterization, and omission of certain areas of concern, there is adequate information to proceed with the feasibility study. The enclosed general comments should assist the Navy in revising the Parcel C RI report. The Department will review the Revised Parcel C RI report in its entirety to ensure issues and concerns raised by agencies are addressed. Comments from the Regional Water Board are also enclosed.

Sincerely,

/s/ Cyrus Shabahari

Cyrus Shabahari
Project Manager
Office of Military Facilities

Enclosures

cc: US EPA Region IX
Attn: Sheryl Lauth [H-9-2]
75 Hawthorne Street
San Francisco, California 94105

Regional Water Quality Control Board
Attn: Richard Hiett
2101 Webster Street, Suite 500
Oakland, California 94612

## GENERAL COMMENTS

1. Although the report provides data tables and maps, it lacks discussion on characterization and understanding of the problem areas. For example, we have been able to find very little information with respect to the VOCs in the bedrock. We are not sure how a thorough discussion on such an important area of concern did not get into this report. It is important to note that the RI report should contain all available information with respect to nature and extent of contamination.

2. The Parcel C RI report contains inadequate explanation of the results of workplan of 1994. There might be enough data to move ahead developing the feasibility study, but we have been unable to find enough information to satisfy the objective of the RI report. For example, there are no plume maps to illustrate the areas of concern. Instead, several volumes of data tables are provided in lieu of, what appears, an in-depth analysis of site characterization. Site characterization of each IR site does not contain information with respect to the extent of contamination, origin, and how contaminants are spreading.

3. Please provide a separate chapter on workplan deviation. In 1994, the agencies and the Navy met and discussed the scope of additional work. For example, the additional work included field work to determine the presence of DNAPL at Parcel C.

4. The Parcel C RI report contains unsubstantiated conclusions. For example, the Executive Summary states the source of the VOCs in the groundwater at IR-58 "may be" an UST source at IR-28. However, the report does not explain how the VOCs in groundwater migrated in a direction opposite to the groundwater direction flow.

5. In absence of a documented release, the Navy appears to attribute metal contamination to non-anthropogenic sources. For example, the ES states that "metal concentrations" do not "indicate" a release. As we explained in our letter to the Navy on 11/5/95, it is often difficult to find a source of contamination at Hunters Point. There have been cases where trucks drove around while unloading their contaminated cargo. It is thus incomplete and inaccurate to characterize the site solely based on identifying a source.

6. Chapter on radiological investigation at Parcel C is incomplete. That chapter should discussed all previous, present field investigations. The report needs to state how the Navy intends to seek "release" from the Department of Health Services.

7. The report should have an in-depth analysis of B aquifer. How contaminants migrated into that aquifer? Despite several years of investigation, why the Navy has failed to determine the nature and extent of contaminants in B aquifer?

8. The report should provide a chapter on workplan variances.

9. The Parcel C RI report should include the results of exploratory excavation, if available.

10. Discussion on soil boring/hydropunch transect, as agreed upon as the result of the SI activities is missing.

11. The report should be inspected for accuracy and completeness. By inspecting only few figures we have been able to identify several anomalies. For example, Figure N.1-2 contains information on F aquifer. What is F aquifer? IR58MW32B seems to indicate a monitoring well. However, the legend explanation refers to this point as a soil boring. Which one is it? It is important to put in-place a system of quality control to avoid providing confusing information.

12. Please provide a plume map for PCBs.

13. Please provide a separate plume map showing the areas with DNAPL. This information could also be provided with the VOC plume maps.

14. The VOC plume maps should show the UST and AST locations.

15. The presence of VOCs in the soil and groundwater can create an unacceptable environment for the people who occupy the buildings. It is important that this report discusses the risk associated with contamination in these buildings to the present and future tenants.

16. It is important to note that the Department considers 1, 1,000,000 as a point of departure.

17. Please explain the results of the risk assessment in the ES. Please explain the results of both residential and industrial scenarios explicitly. This information will help the community members as well as other interested parties. It also presents a decision making tool for all the interested parties to plan for appropriate and acceptable cleanup action. In the ES, please explain the problem areas, what data indicate, what kind of risk those chemicals present and to whom, and finally what is the next step.

18. Please explain how soil ambient levels for cobalt, Nickel and chromium were selected when screening sites. How these values were used in determining the nature and extent of contamination? How these values were used in determining whether or not further action is required? How these values were determined to be related to ambient? With respect to these elements, a regression was to be used to estimate the ambient concentration.

19. There are many maps showing different chemical concentration in different media. However, despite available data, only one figure was provided showing an approximate extent of TCE in the B aquifer. We ask the Navy to compile the data and provide plume maps for chemical groups, such as VOCs, metals, TPH, in different aquifers. It is impossible to discern the area of extent in fragmented fashion, as provided in the report.

20. The RI report does not describe the particulars nor provide a lucid picture of the lower aquifer. The report does not explain how contamination has migrated into the lower aquifer despite its upward gradient, as stated by the Navy.

21. The discussion of ecological risk at different IR sites at Parcel C is very important. Several areas of groundwater contamination are near the Bay. And it is evident that contaminated groundwater has a potential to be discharged into the Bay. It is thus important to discuss this possibility in depth.

STATE OF CALIFORNIA—CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY PETE WILSON, Governor

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# MEMORANDUM

**TO:** Cyrus Shabahari, Project Manager
Site Mitigation Branch, Region 2
700 Heinz, Second Floor, Building F
Berkeley, CA 94704

**FROM:** James M. Polisini, Ph.D.
Human and Ecological Risk Division (HERD)

**DATE:** January 29, 1997

**SUBJECT:** PARCEL C DRAFT REMEDIAL INVESTIGATION HUMAN HEALTH RISK ASSESSMENT
[PCA 14740, SITE 200050-47 H:32]

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## Background

We have reviewed portions of the document titled *Parcel C Remedial Investigation Draft Report, Hunters Point Shipyard, San Francisco, California* and prepared by PRC Environmental Management, Inc. The volumes received for review included: Volume X, Appendix N; Volume XI, Appendix N (Continued); Volume XII, Appendix N (Continued); and Volume XIII, Appendix O and P. This review is in response to your written work request.

Hunters Point Annex (HPA) is situated on a promontory in the southwestern portion of San Francisco Bay. HPA is bounded on the north and east by San Francisco Bay and on the south and west by the Bayview Hunters Point district of San Francisco. The on-base property at HPA is approximately 497 acres of land of which 77 acres are contained in Parcel C. Parcel C is bounded on the east by San Francisco Bay, on the south-southwest by Parcel D, on the north by Parcel B.

## General Comments

In general the risk assessment is well written and understandable. We do, however, have some methodological objections in several areas.

## Specific Comments

1. Please make comparisons of Hunters Point soil concentrations, in addition to those made to Hunters Point Ambient (HPA) concentrations, to California-specific soil concentrations, rather than background soil concentrations from the entire United States (Section 2.2.1, page N-2-4). Bradford, et al. (1996) contains an analysis of California soils from areas believed to be unimpacted.

2. Please expand the description of the Installation Restoration sites (Section 3.2.1, pages N-3-4 through N-3-6) to include the current use. These sections now contain statements that buildings are '...currently used by the Navy'.

3. It is difficult to imagine the situation where inhalation of volatile organic compounds (VOCs) associated with the A-aquifer is applicable to the future residential use scenario, but not applicable to the future industrial use scenario (Section 3.2.3.2.2, page N-3-12). Exclusion of the A-aquifer VOCs from the future use industrial scenario would seem appropriate only for outdoor workers. If the future industrial use scenario considers only outdoor workers, that should be clearly stated, and would be acceptable as long as the future indoor residential scenario is explicitly used to assess future indoor workers.

4. The units for groundwater measurements should be mg/l rather than mg/kg. In addition, we cannot follow the logic used to develop the chromium VI to total chromium ratio (Section 3.2.4.1, page N-3-17 and Attachment N-D):

   a) Chromium VI was detected in only two of the groundwater samples analyzed for both total chromium and chromium VI (Attachment N-D). The ratio of chromium VI to total chromium in these two samples was 0.0518 and 0.0036 (5.18 percent and 0.36 percent).
   b) The lowest total chromium concentration in the 72 samples with detected total chromium is stated as 25.9 mg/kg (Attachment N-D).
   c) The statement is made that the detected total chromium concentration of 25.9 mg/kg implies a chromium VI concentration less than 0.19 percent.
   d) The conclusion is reached that based on the implication that the chromium VI to total chromium ratio is less than 0.19 percent that there are 72 data points with chromium VI to total chromium less than 0.19 percent.

   The lowest detected concentration of total chromium in groundwater (Table N.D-1) is 0.56 mg/kg in sample 9304A485, not 25.9 mg/kg as stated in item b. It is not possible to infer a chromium VI concentration for a sample analyzed for total chromium as appears to have been done for the sample with 25.9 mg/kg total chromium in item c. There is no information provided which supports a belief that the ratio of chromium VI to total chromium changes with the concentration of total chromium. We cannot determine how the chromium VI to total chromium ratio of 0.19 percent was obtained. It is certainly not the average of the two chromium VI to total chromium ratios developed from the analytical results in item a, nor is it a chromium VI analytical result for the sample with a total chromium concentration of 25.9 mg/kg. In summary, the chromium ratio of 0.0036 does not appear conservative, as stated in Attachment N-D, when the only other chromium VI to chromium ratio based on analytical results is 5.18 percent.

5. We have checked the lead calculations performed with the DTSC spreadsheet. We agree that the soil lead value of 245 mg/kg used in this assessment is protective of the 99$^{th}$ percentile typical child, given the site specific parameters for lead in air and lead in water. The statement of protection afforded to typical children by use of this soil concentration is correctly stated initially (Section 4.3, page N-4-5). In later statements, however, the protection for the 99$^{th}$ percentile at the 10 µg/dl blood lead level is misstated:

   a) Section 5.3.1.1.1, page N-5-20 should read 'DTSC's blood lead model predicts a blood lead concentration equal to or <u>less than</u> 10 µg/dL in 99 percent of exposed children at soil lead concentrations equal to or <u>less than</u> 245 mg/kg'.
   b) Section 6.4.5, page N-6-8 should read 'A soil lead concentration resulting in blood-lead concentrations less than 10 µg/dL for the 99$^{th}$ percentile for a typical child is considered protective.'

6. Please expand the discussion of the sampled air concentrations of VOCs to include a comparison of the sampled air concentrations in Parcel C buildings with the modeled air concentrations used in the human health risk assessment (Section 5.1.3, page N-5-5). Indicate specifically whether the measured air concentrations for A aquifer contaminants in Parcel C buildings is higher or lower than the modeled air concentrations of those contaminants.

7. There does not appear to be any presentation of risk or hazard associated with exposure to both soil and groundwater (Section 5.3.1, pages N-5-13 through N-5-37). For example, residential incremental cancer risk associated with soil is presented in Table N.5-9 while residential incremental cancer risk associated with groundwater is in Table N.5-11. Please provide an additional presentation of total risk and hazard for those exposure areas where appropriate. Graphical presentation of total risk or hazard may be more appropriate than tabular presentation because of the differing densities of soil and groundwater samples. We would accept either presentation method. This same comment was made on the human health risk assessment in the RI/FS for Parcel D.

8. Please provide the basis for the four hazard index groupings of: less than one; 1 to < 3; 3 to <7; and greater than 7 (Section 5.3.1.1.1, page N-5-18).

Attachment A

9. Plant uptake factor (UF) calculations (Table N.3-2) were checked at random and found to be correct within rounding error.

10. Dermal absorption factors (Table N.3-5) were checked and found to be those recommended in the DTSC Preliminary Endangerment Assessment (PEA) Manual.

11. We do not agree with one of the selection criteria for the average exposure parameters (Tables N.3-3, N.3-4, N.3-7, N.3-8 and N.3-11). The arithmetic mean was chosen if the data were normally distributed or the distribution was not tested. If the distribution is not tested, the 50$^{th}$ percentile should be used rather than the arithmetic average. Disagreement on this point will not affect any remediation decisions, as EPA Risk Assessment Guidance for Superfund (RAGS) requires that remedial alternatives be evaluated on the reasonable maximum exposure scenario.

12. The average adult resident soil ingestion rate is based on an EPA Review Draft document (Table N.3-3). We recommend that draft guidance not be used as the basis for risk assessments.

13. The exposure dose calculation use 0.2 mg/cm$^2$ as the soil adherence factor for calculating dermal dose in both the reasonable maximum exposure (RME) calculation and the average calculation (Table N.3-4). A soil adherence value of 1.0 mg/cm$^2$, as contained in the U.S. EPA guidance on dermal exposure and DTSC Supplemental Guidance for Human Health Risk Assessments, is more appropriate for the RME calculation. Please use this value for the RME calculation. This same comment was made on the human health risk assessment contained in the Parcel D RI/FS. The EPA reference for this value, Dermal Exposure Assessment: Principles and Applications (EPA/600/8-91/011B), is an Interim Report. The reference (Page N-R-3) should be amended to indicate the complete title.

14. Reference doses (Table N.4-1) were checked at random and found to be correct.

15. Oral and inhalation cancer slope factors (Table N.4-2) were checked at random and all but one were found to be correct. The Cal/EPA oral slope factor for methylene chloride is listed as 1.4E-01 $(mg/kg-d)^{-1}$ where the slope factor is 1.4E-02 $(mg/kg-d)^{-1}$ in the November 1, 1994 Cal/EPA list. Use of 1.4E-02 $(mg/kg-d)^{-1}$ would reduce the incremental cancer risk for methylene chloride by an order of magnitude from that estimated in the risk assessment. Based on a check of the cancer risk summary tables, methylene chloride is not a risk 'driver' and the incorrect cancer slope factor should not affect the conclusions of the human health risk assessment.

16. We did not validate the final calculation of risk and hazard because the intermediate spreadsheets and results of the dose calculations were not included for review. Please forward the dose calculation spreadsheets prior to submittal of the draft final Parcel C RI/FS directly to HERD so that the calculation of total incremental cancer risk and non-cancer hazard index can be verified. The spreadsheets containing the dose calculations and the calculation of risk and hazard for the individual COCs should then be included in the draft final Parcel C RI/FS.

**Conclusions**

Despite some methodological disagreements we believe the human health risk assessment contained in Appendix N identifies the areas of Parcel C which should be addressed in the Feasibility Study. Some method of presenting the combined risk and hazard associated with exposure to soil and groundwater should be included.

Please supply future versions of this risk assessment and other Hunters Point parcels in electronic format to facilitate review and conserve paper. This same request was made in the review of the human health risk assessment for Parcel D, but no electronic submittal was received for Parcel C.

**References**

Bradford, G.R., A. C. Chang, A. L. Page, D. Bakhtar, J. A. Frampton and H. Wright. 1996. Background Concentrations of Trace and Major Elements in California Soils. University of California Riverside, Division of Agriculture and Natural Resources.

Reviewed by: Brian K. Davis, Ph.D.
Staff Toxicologist
Human and Ecological Risk Division

cc: Michael J. Wade, Ph.D., DABT, Senior Toxicologist, OMF Liaison, HERD

Dan Stralka, Ph.D.
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Pete Wilson
*Governor*

**San Francisco Bay**
**Regional Water Quality Control Board**

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**VIA FACSIMILE**
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Mr. Cyrus Shabahari
DTSC, Office of Military Facilities
700 Heinz Avenue
Berkeley, CA 94710

January 23, 1997
File: 2169.6032

RE: **DRAFT PARCEL C REMEDIAL INVESTIGATION REPORT HUNTER'S POINT ANNEX (HPA)**

Dear Mr. Shabahari:

Regional Board Staff have reviewed the aforementioned report for water quality related issues and have the following comments:

General Comments:

On August 10, 1994 a Parcel C data presentation was given by the Navy's consultant Harding Lawson Associates (HLA). The presentation included soil boring data with OVA readings of VOCs in the unsaturated bedrock at IR 28 and IR 30 within Parcel C. At that time HLA recommended that further study, via a nested soil vapor well, was required as VOC concentrations to several hundred parts per billion were found throughout several borings to approximately 116 feet bgs. These "soil" data are presented in Tables 4.4.18 and 4.4.20, however, it is not discussed in this report. This data gap will need to be addressed in the revised RI.

Specific Comments:

1. Page ES-6, Ecological Risk Assessment: This section states that the greatest ecological concern is the *potential* for migration of contaminants to

aquatic receptors. Other sections of this report (e.g. page 5-37) describe the *likely* migration of contaminants to the bay. Please restate this and other sections to be consistent.

2. Page 2-12: The Navy has consistently stated, in the Parcel B and D RIs and the ERA 1B that an evaluation of the potential for groundwater transport of contamination to San Francisco Bay will be done. As with previous comments on the aforementioned documents (e.g Parcel D RI, Parcel B RI, Parcel B FS, Phase 1B ERA) this has not been done.

3. Page 4-7: NAWQC values for screening criteria should use non-conservative chronic values rather than non-conservative acute values (See: Regional Board letter 10/12/96 comment #7 HPA Parcel D Draft FS).

4. Page 4-62: As stated previously in Regional Board letter 8/12/96 for the Parcel D Draft RI comment #4, dilution is not an appropriate means of meeting NAWQC values. Please strike this paragraph.

5. Page 4-105: Define the solvent type.

6. Page 4-76: Appendix O describes generic processes which influence contaminant fate and transport. It is not specific to IR-27. Change this paragraph or collect the necessary data to support this statement.

7. Page 4-147: Please state which paragraph within section 4.4.4, soil samples IR28B182 and IR28184 are described and to which building or IR site they have been "reassociated".

8. Page 4-147 and 4-150: The screening value for TPHd is 100 ppb.

For questions regrading the contents of this letter please contact the undersigned at (510) 286- 4359 or Ms. Shin Roei Lee at (510) 286-0699.

Sincerely,

Richard Hiett
Groundwater and Waste
Containment Division