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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

cc: Tetra Tech (1 copy)
AR (2 copies)
3/9/98

VIA FACSIMILE
(650) 244-2712

March 6, 1998

Commander
Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-2404
ATTN: Mr. Luciano Ocampo, Code 1842

Re: U.S. EPA Review of FISCO Draft Phase II RI Report

Dear Mr. Ocampo:

The U.S. Environmental Protection Agency (U.S. EPA) appreciates the opportunity to comment on *Fleet and Industrial Supply Center Oakland Phase II Remedial Investigation Report Onshore Operable Unit* (Draft RI Report). The Draft RI Report was prepared by Tetra Tech EM Inc. on behalf of the Department of the Navy and is dated December 19, 1997.

Based upon our review, U.S. EPA has determined that the Draft RI Report is relatively complete and should require limited modifications to be acceptable to U.S. EPA. The most significant concern noted is the absence of a residential exposure scenario in the risk assessment. Please see Enclosure A for U.S. EPA's Federal Facilities staff comments. Additional comments are also provided by Dr. Jeffrey Paull, U.S. EPA Human Health Toxicologist (Enclosure B) and Dr. Ned Black, U.S. EPA Ecologist/Microbiologist (Enclosure C).

If you have any questions concerning this letter, please contact me at (415) 744-2365.

Sincerely,

Phillip Ramsey
Remedial Project Manager

Enclosures

cc: Mary Rose Cassa, California Department of Toxic Substances Control
Joseph Chou, California Regional Water Quality Control Board - San Francisco Bay Region
Diane Heinze, Port of Oakland

ENCLOSURE A

March 6, 1998

U.S. EPA review of *Draft Phase II Remedial Investigation Report Onshore Operable Unit, Fleet and Industrial Supply Center Oakland, Oakland California*, dated December 19, 1997

General Comments:

1. U.S. EPA has concerns with the Navy not conducting a residential exposure scenario in the risk assessment. Cleanup to industrial standards would require institutional controls to restrict future land use to industrial use only and institutional controls are limited remedial actions. The Navy needs to clarify how it would conduct a nine-criteria analysis of alternatives if it hasn't evaluated unrestricted use. In the Feasibility Study, an evaluation of alternatives should be considered that would result in cleanup to unrestricted use, since such alternatives may require only limited additional expenditures (see Enclosure B).
2. Appendix P, Examination of Beneficial Use of Groundwater. EPA is attempting to reconcile discrepancies between State and Federal law on exempted aquifers to determine whether the requirements are equivalent or whether Federal Law is more stringent and therefor should be applied. In order to assist U.S. EPA with reconciling the clause in 40 CFR Ch.1, Section 146.4, please indicate what State or Federal guidance or criteria the Navy used to establish that the aquifer "...is not reasonably expected to supply a public water system."
3. In general, the information and data presented in the Draft RI Report is well organized and presented. Also, the figures and tables are appropriately used and technically accurate.
4. In general, U.S. EPA concurs with the Draft RI Report recommendations; however, additional discussion will be needed to address Long-term groundwater monitoring, IR-02, and operation and management of the storm drain system.

Specific Comments:

1. Section 1.3, Background. U.S. EPA recommends that the last paragraph on page 1-3 reference Appendix I, which contains a more detailed description of the Environmental Impact Statement/Environmental Impact Statement for the Disposal and Reuse of FISCO.

2. Section 2.4, Groundwater Monitoring Well and Piezometer Installation, Development, and Sampling. Please include reference to a February 3, 1997, Addendum to the Expanded Site Investigation and Remedial Investigation Quality Assurance Project Plan for the Phase II Remedial Investigation/Feasibility Study at Fleet and Industrial Supply Center Oakland for Final Phase II Remedial Investigation/Feasibility Study Work plan and Field Sampling Plan (WP/FSP).
3. Section 2.4.3, Groundwater Sampling. On page 2-6 text indicates static water levels were measured before sampling began. Please clarify if water levels were measured during purging activities.
4. Section 2.4.3. On page 2-10, text indicates that slow recharging wells were sampled after bailing dry two to three times. Please identify the wells which were bailed dry prior to sampling and indicate if U.S. EPA RCRA Groundwater Monitoring: Draft Technical Guidance, November 1992 (EPA/530-R-93-001) was followed.
5. Section 2.5, Phase II Aquifer Testing. U.S. EPA recommends that the Navy include a statement in the text indicating if the combined Phase I and Phase II aquifer tests provided a representative assessment. Based upon U.S. EPA review, the spacial distribution of wells tested does appear representative. Also, U.S. EPA suggest that a figure or modification of an existing figure (i.e., Exhibit I) be used to illustrate the location of the aquifer test wells.
6. Section 2.8, Contingency Sampling and Investigation. The last sentence on the bottom of page 2-15 regarding MTBE sampling in well A1-MW06 should be moved to the first paragraph under the heading "Area 1 Contingency Sampling".
7. Section 2.15.1, Basewide Deviations. On page 2-22, please specify how many additional water level measurement events were conducted.
8. Section 3.0, Physical Characteristics and Environmental Setting. The correct name for the neighboring military facility is "Oakland Army Base". Please correct.
9. Section 4.0, Nature and Extent of Contamination. Text indicates that ketones and phthalates which are consistently detected at FISCO are "...recognized by U.S. EPA as common laboratory contaminants and therefore are not included in the text of the figures..." The Navy needs to support the exclusion of this data from text and figures. For example, please indicate what types of ketones were detected, the concentrations detected, and the consistency of detections.

10. Section 4.0, Nature and Extent of Contamination. Within several subsection, the Navy provides IR site-specific information on time-critical removal actions. Please provide the volumes of soil removed in all time-critical removal action sections.
11. Section 9.1.3, Evaluation and Comparison of Metals Concentrations. Please provide more detail in the conclusions regarding the metals that exceeded ambient concentrations included as COPCs in the HHRA and ERA and those assumed to be ambient.
12. Table 2-2, Groundwater Sampling Summary. U.S. EPA requests that the table be modified to include well screen intervals.



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

MEMORANDUM

To: Phillip Ramsey
Remedial Project Manager
Federal Facilities Cleanup Office

From: Jeffrey M. Paull, DrPH, CIH
JMP Regional Toxicologist
Superfund Technical Support Section

Date: March 5, 1998

Subject: Review of "Fleet and Industrial Supply Center, Oakland (FISCO) Draft Phase II Remedial Investigation Report, Baseline Human Health Risk Assessment"

Scope of Review

We reviewed above-referenced Remedial Investigation (RI) Report, prepared by Tetra Tech EM Inc., on behalf of the U.S. Department of the Navy, Engineering Field Activity West (EFA-West). The RI Report was transmitted to the USEPA for review on December 19, 1997. Our review focused on the Section 6 of the RI pertaining to the Baseline Human Health Risk Assessment, and Appendix Q, pertaining to the Statistical Evaluation of Ambient Metal Concentrations in Groundwater and Soils. The RI was reviewed for scientific and technical accuracy, and for conformance with USEPA Region IX risk assessment guidelines, policies, and procedures.

In conducting our review, we assume that sampling of environmental media, analytical chemistry data, and QA/QC procedures in the RI have been adequately examined by appropriate regional personnel. Minor editorial and grammatical errors in the document are addressed only to the extent that they may affect the interpretation of the risk assessment. We request that future changes in the document made in response to these comments be clearly identified.

Summary

Overall, the Baseline Human Health Risk Assessment (HHRA) section of the RI was found to be consistent with USEPA Region IX risk assessment guidance. In characterizing site risks, relevant exposure pathways were generally considered, exposure assumptions were plausible, appropriate toxicity values and exposure factors were utilized, and random checks verified that exposure point concentrations, excess cancer risks, and noncancer hazard indices were correctly calculated.

Although in general, the HHRA adequately characterizes potential human health risks, we have identified several specific technical and human health risk assessment-related issues, explained in more detail below, for which we are requesting additional information or further clarification from the Navy. The most significant of these issues involves the omission of the residential exposure scenario for future land use from consideration in the HHRA, and the uncertainty involved with the determination of ambient background concentrations for several metals.

Specific Comments

- (1) **Potentially Exposed Populations, §6.3.1.3, p. 6-12 to 6-13:** Because the Navy has leased the entire base to the Port of Oakland which plans to use the site for container storage and intermodal railroad lines, the discussion of potentially exposed populations assumes that future land use will remain industrial. Although we acknowledge that land use at FISCO will in all likelihood remain industrial, we highly recommend the consideration of the residential exposure scenario in the risk assessment for the following reasons:
 - (i) Institutional controls such as deed restrictions are considered limited action alternatives. In the absence of a baseline risk assessment in which the residential exposure scenario is evaluated, performing an analysis of the nine criteria specified by the NCP for selection of appropriate institutional controls becomes problematic;
 - (ii) For bases like FISCO, where contaminants in soil are generally present at low levels, evaluation of the residential exposure scenario permits the designation of unrestricted land use for the preponderance of IR sites, thereby eliminating the need for institutional controls (e.g., deed restrictions), and the associated future liability, monitoring, and administrative costs for those sites.
- (2) **Identification of Exposure Pathways, §6.3.2, p. 6-13 to 6-14:** The conceptual site model (CSM) indicates that ingestion and dermal contact pathways for surface water and sediment are incomplete, based on the lack of evidence that recreational swimming occurs in the site area. However, recreational swimming is not the only way that a potential receptor may become exposed to contaminated sediments. A more complete explanation is required to rule out this potential exposure pathway.
- (3) **Identification of Exposure Pathways, §6.3.2, p. 6-13 to 6-14:** Exposure to VOCs emanating from shallow groundwater and subsequently transported into indoor air spaces is not considered as a potential exposure pathway in the risk assessment. Although there may be valid reasons why this exposure pathway was not considered (e.g., all existing buildings in proximity to contaminated groundwater are scheduled to be demolished) these reasons should be presented and made explicit in the risk assessment.
- (4) **Quantification of Chemical Intakes, §6.3.3.2, p. 6-16 to 6-21:** Please provide the rationale or reference for the "more limited" exposure frequency of 25 days per construction event.

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- (5) **Chemicals With No EPA Toxicity Values, §6.4.1.4, p. 6-29 to 6-31:** The concentration of lead in air was assumed to be 0.18 mg/m³ (180 µg/m³), and the concentration of lead in dust was assumed to be 26.8 µg/m³, which is also an airborne concentration. Please clarify how each of these different airborne lead concentrations were employed in the DTSC blood lead model, and what, if any lead-in-dust concentration (mg/kg) was used in the model. The calculated soil concentration of 4,800 mg/kg, which corresponds to a 0.01 probability of exceeding the 10 µg/dL blood lead concentration, appears to be biased high.
- (6) **Assumptions and Uncertainties Regarding Toxicity Values, §6.4.2, p. 6-31 to 6-32:** Please provide the method or equation used to calculate toxicity values based upon dose-route extrapolations (e.g., deriving an inhalation RfC value from an oral RfD value). Additionally, describe how a drinking water standard of 1.3 mg/L was used to calculate a surrogate RfD for copper.
- (7) **Area 2 Risk Characterization, §6.5.3.2, p. 6-38 to 6-39:** The total carcinogenic risk to a construction/utility worker at Building 740 is 1.3×10^{-4} , while the total noncarcinogenic hazard index is 20. Since these are the highest cancer and noncancer risks estimated for any of the IR sites, it is important to discuss the basis for the decision to collect additional data to "further characterize the extent of soil and groundwater VOC contamination" at this site (p. 6-1), and what effect, if any, data limitations would be expected to have on the current risk estimates.
- (8) **Recreational Fishing Scenario, §6.5.4, p. 6-41:** Please provide a more complete explanation for why no surface water data were collected during the remedial investigation; this appears to be a significant data gap in the risk assessment.
- (9) **Data Evaluation Uncertainty, §6.5.5.1, p. 6-41 to 6-42:** The quantitation limit for vinyl chloride in water is equivalent to the 10^{-4} risk level based upon the drinking water PRG (p. 6-5). The health risk implications of this relatively high quantitation limit, at the high end of the 10^{-6} to 10^{-4} target risk range, should be included in the discussion of uncertainties in the risk assessment.
- (10) **HHRA Summary, §6.6.1, p. 6-43 to 6-45:** Much of the information presented in this section is redundant and may be eliminated (e.g., the first paragraph under "Risk Characterization" on p. 6-44 is nearly identical to that presented on p. 6-33).
- (11) **HHRA Text Formatting, §6.0, p. 6-1 to 6-45:** We found the text font size utilized throughout the HHRA quite small and difficult to read, and recommend a larger, more readable font style and/or size. We also recommend reducing or limiting the number of acronyms and abbreviations used (e.g., the following 36 terms were cited numerous times throughout the document: AOC, COCs, COPCs, CSM, CTE, ELCR, EPCs, ESI, HEAST, HHRA, HI, HQ, IRIS, NCP, PAHs, PCE, PEF, PRC, PRGs, RCRA, QAPJP, QCSR, RfD, RI, RME, SF, SI, SQL, SVOCs, TCE, TCRA, TICs, TPH, TiEMI, UCL, VOCs). Excessive reliance on these terms can make the document unnecessarily confusing and difficult to read, particularly for members of the public. Alternatively, a "List of Acronyms and Abbreviations" can be provided to improve the readability of the document.

Phillip Ramsey

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- (12) **Appendix Q, §1.3, Approach, p. Q-3:** On what basis is the "dummy" value selected for metals having a low frequency of detection (<50%)? The statement that "the dummy value is equal to an arbitrary value less than the detection limit" is too vague, and does not provide sufficient rationale for the selection of the dummy value.
- (13) **Appendix Q, §3.1, Treatment of Nondetected Data, p. Q-8:** Here it is stated that "for metals that were detected less frequently, an arbitrarily small value (one-tenth to one-hundredth of the minimum detected value) was selected as a placeholder for the probability plots." As stated above, an appropriate rationale is needed for the selection of these arbitrary and widely different dummy values.
- (14) **Appendix Q, §3.2, Exclusion of Outliers, p. Q-8:** Probability plots were constructed for each of the ambient metals concentration data sets that contained at least two detected groundwater and soil sample sets. However, a sample set consisting of only two detected values is insufficient for constructing a probability plot, or for inferring the nature of the underlying data distribution.
- (15) **Appendix Q, §3.6, Estimates of 95th Percentile for COPCs, p. Q-1 2:** No probability plot is included for cadmium, mercury or selenium in groundwater, or cadmium and thallium in soils as these metals had only one or fewer detected values. However, as stated in the comment above, probability plots should not be constructed for metals having two or fewer detected values (e.g., cobalt in groundwater and selenium in soil). Note also, the next-to-last sentence on p. Q-12 is grammatically incorrect, and its meaning is unclear.
- (16) **Appendix Q, §4.0, Results, p. Q-13:** Please provide an explanation for why mercury is considered a "special case."
- (17) **Appendix Q, Attachment 1, Figures:** For the reasons stated in comments 14 and 15 above, the following probability plots containing two detected values should be deleted: Figure 12 (cobalt in groundwater), and Figure 43 (selenium in soil). In addition the probability plot, and assumed distribution for molybdenum in soil, and thallium in groundwater is highly uncertain (only three detected values). The uncertainty of the ambient background concentrations for cadmium, mercury, molybdenum, selenium, and thallium due to data limitations should be evaluated, and discussed in terms of selection of COPCs.

cc: Dan Opalski, USEPA Region IX
John Christopher, CAL-EPA/DTSC

jmp/fisco4.mem



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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MEMORANDUM

SUBJECT: Review of Section 7, Ecological Risk Assessment, of the FISCO Phase II RI Report, 12/97 (groundwater and stormwater assessment).

FROM: Ned Black, Ph.D. *JNB*
Ecologist/Microbiologist
Technical Support Team (SFD-8-B)

TO: Phillip Ramsey
Remedial Project Manager (SFD-8-2)

DATE: 25 February 1998

I have reviewed this ecological risk assessment and find it acceptable within the context of the effort at this site. Ordinarily, I would not accept a risk assessment which goes no further than hazard quotients as having adequately characterized ecological risk. If for no other reason, such a risk assessment would likely be too conservative and so lead to excessive cleanup requirements. Furthermore, risk to benthic infauna is not acceptably assessed by comparison of dissolved contaminant concentrations against ambient water quality criteria (AWQC). Risk to infauna could be screened by comparing measured or modeled sediment contaminant concentrations against benchmarks such as the National Oceanic and Atmospheric Administration's effects range-low (ER-L) guidelines or perhaps the sediment monitoring data collected as part of the Regional Monitoring Program conducted by the San Francisco Estuary Institute.

The conservative nature of comparing contaminant concentrations in storm water run-off against AWQC, however, together with the lack of contaminants of concern in the groundwater, serve to make the risk characterization of this report acceptable. There is clearly risk to marine receptors from metals and DDT in the storm water. The management of this risk, in light of the reuse plans for this site, can be addressed in the feasibility study.