



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street

San Francisco, CA 94105-3901

July 12, 1995

Mr. Stephen Chao  
Naval Facilities Engineering Command  
Engineering Field Activity, West  
900 Commodore Way, Bldg. 101  
San Bruno, CA. 94066-2402

Re: *Draft Station-Wide Remedial Investigation Report*, dated May 1, 1995

Dear Mr. Chao,

The U.S. Environmental Protection Agency (EPA) has received the subject document and submits the following comments. While the report shows a great deal of work put into compiling and presenting old and new site data, the risk assessment section is deficient in its presentation of cumulative risk at the site. If you have any questions, please call me at 415-744-2385.

Sincerely,

A handwritten signature in cursive script that reads "Michael D. Gill".

Michael D. Gill  
Remedial Project Manager  
Federal Facilities Cleanup Office

cc: C. Joseph Chou (DTSC)  
Michael Bessette (RWQCB)  
Ken Eichstaedt (URS)  
Sandy Olliges (NASA)  
Peter Strauss (MHB)  
Mike Young (PRC) (Fax)

## COMMENTS

*Draft Station-Wide Remedial Investigation Report, dated May 1, 1995*

### GENERAL COMMENTS

1. EPA has reviewed the subject document for consistency of risk procedures and applicability to the overall Remedial Investigation (RI) process. After several meetings to discuss the scope and application of the station-wide review, we believe that it will still require some amount of revision to make the estimated point risk plots useful for the project team to communicate the extent of actions taken and the completeness of the actions to the public. EPA realizes that the Navy's contractor was in disagreement with the suggested approach for presenting the areal achievements in risk reductions and the residual cumulative risk the project team will be determining. This version of the document uses different methods of tallying the risk from a release based on a point or area determination. This difference skews the area of concern interpretation of risks to make it appear that the point risks are outlandish. In any given area, the average of the point risks should match the areal average presented in the tables from the individual site risk assessments. In comparing any area of investigation using the two methods, the report shows discrepancies of up to two to three orders of magnitude. There is no reason this should be the case. Also, it is difficult to observe any cumulative risk effects without contour lines (risk isopleths) connecting these point risks on the plots. Because regulatory agency guidance has been consistently disregarded, it has been suggested by some that the Navy replace the contract team working on the sample by sample point estimates and replot the data before additional hours are charged to rewrite the text. The document must be rewritten to answer the questions of reduction of risks and the acceptability of remediation in a manner that is acceptable to the regulatory agencies. The additional mapping to present before and after remediation needs further development to demonstrate the accomplishments of the remedial actions in terms of cumulative risk reduction for the base.
2. The report presentation of the extent of contamination is limited to the RI sites. The relationship between significant detections of constituents in soil, groundwater, and soil gas should be included and discussed in order to allow the reader to verify the site conceptual models presented.
3. It is very difficult to discern the differences between the various risks plotted on the sample by sample plots. Because the eye cannot easily differentiate between the symbol sizes used, EPA suggests using either different colors or different symbols to represent different orders of risk magnitude.
4. It appears that most areas' risks at the site are driven by risk from inorganics. We suggest that these areas that exhibit background (naturally occurring) levels of inorganics be replotted to show risk from contaminants of concern that are anthropogenic in nature. The Navy needs to first provide proof of their natural occurrence, as was done for beryllium.
5. It appears that by virtue of the delineation of the Site 9 documents in the petroleum sites section and the language in the site descriptions that the Navy maintains its argument that there is no VOC contamination attributed to Navy sources in Site 9 area. Because there are

still some outstanding issues on this subject, EPA feels that this document should reflect the areas of uncertainty with regard to source, in particular, the Buildings 29/31 area.

6. Please provide a table of outstanding work that needs to be completed before finalizing this Station Wide RI/FS process (e.g. SWEA, Phase II Additional Sites, Site 12, treatability studies, source of runway wetland, etc.).

## **SPECIFIC COMMENTS**

7. Section 1.2.2, page 1-4, para 3. It is possible that this section will need to be updated with regard to NASA after the BRAC 4 Base Closure list is finalized this year.
8. Section 1.2.2.2, page 1-5, first full para. Mountain View Well 18 (MV-18) south of Highway 101 has been producing water for domestic purposes since July 1994. The statement that "the C aquifer in the area of MFA is confined to agricultural purposes" should be corrected to reflect this fact.
9. Section 1.2.4, page 1-7, last para. The last sentence in this paragraph should be modified to explain that if petroleum products are commingled with CERCLA substances, they will be addressed through RODs. Also, this section should reference the documents that pertain to any UST cleanup.
10. Section 1.2.4.5, page 1-13, last para. This introduction on petroleum sites should briefly mention that various treatability studies are being conducted at these sites. Other sections with more detail should be referenced.
11. Section 1.2.4.5, page 1-14, para 2. Include a definition of the "capillary fringe zone".
12. Section 1.2.4.5, page 1-14, para 3. Although this is a Petroleum Sites section, the discussion of Buildings 29 and 31 should include language regarding the potential contamination from VOCs.
13. Section 1.2.4.5, page 1-14, para 3. Reference the determination of lead found in AVGAS.
14. Section 1.2.4.5, page 1-15, para 1. Reference any documentation related to the additional investigation of Site 12.
15. Section 1.2.4.5, page 1-16, para 3. Although this is a Petroleum Sites section, the discussion of Tanks 2 and 43 should include language regarding the potential contamination from VOCs (commingling).
16. Section 1.2.4.6, page 1-16, para 1. This description of OU6 should describe how the Site Wide Ecological Assessment covers ecological risk assessment and the OU6 Remedial Investigation covers human health risk assessment.
17. Section 1.2.4.7, page 1-18, para 1, last sentence. A magnetometer survey cannot

- definitively prove that metallic materials have not been buried at the site. It is suggested that the sentence be reworded.
18. Section 1.2.4.7, page 1-19, last sentence. This sentence seems to indicate that since Building 487 was found to be clean, that all buildings in the weapons storage bunkers area are clean. Is this true? Were the other building inspected as well?
  19. Section 1.2.4.7, page 1-20, para 4. Please clarify whether nuclear weapons or nuclear weapons components were never stored in the bunkers. Can the recent letters received from the bunkers' caretakers be used to reference this statement along with PRC 1995b?
  20. Section 1.2.4.7, page 1-20, last sentence. The Navy is encouraged to locate and identify the source of the potential runway wetland (ag well?) prior to the final version of this document.
  21. Table 1-3, page 1-62, first row. It is our recollection that EPA, not the Navy, requested this report to close out the OU4 deliverables once the MEW ROD was deemed applicable for the west side aquifer. Isn't this report merely a repackaging of the OU4 Remedial Investigation report with out the risk assessment? Please clarify.
  22. Table 1-4, page 1-68. Please add the Final OU5 FS and any versions of the ROD that are released prior to completing this document. Generally speaking, Tables 1-1 through 1-7 may need updating prior to the completion of this document due to other document submittals.
  23. Table 1-6, page 1-79. Please add SWEA Phase II documents (workplans).
  24. Table 1-9, page 1-84, Site 12. This site work is not completed yet. EPA submitted comments on the Site 12 Completion Report (June 5, 1995 letter) that called for additional excavation and groundwater monitoring. Please clarify this in the table.
  25. Section 2.3.3.3, page 2-10, para 4. EPA encourages that the collection of replacement soil samples in the Inferred Sources 8 and 9 area be completed prior to the submittal of the Final version of this document.
  26. Section 2.3.3.4, page 2-12, first para. It should be clarified that in addition to operations at Building 88, VOC contamination at Site 9 could potentially have come from activities in the vicinity of Buildings 29 and 31. At present, this is unclear.
  27. Section 2.3.5, page 2-17, para 3. The OU6 Remedial Investigation Report still has some outstanding issues and is therefore not approved as final at this time.
  28. Section 2.3.6.2, page 2-19, para 4. The Site 12 Completion Report is not yet finalized. As commented earlier, EPA submitted comments on the Site 12 Completion Report (June 5, 1995 letter) that called for additional excavation and groundwater monitoring. Please clarify this in the text.

29. Section 2.3.6.9, page 2-26, para 5. The Site 12 Completion Report is not yet finalized. As commented earlier, EPA submitted comments on the Site 12 Completion Report (June 5, 1995 letter) that called for additional excavation and groundwater monitoring. Please clarify this in the text.
30. Section 2.3.7.5, page 2-30, last para. The Phase I Site Wide Ecological Assessment has not been approved as final yet. Please clarify this in the text.
31. Section 3.3, page 3-2, para 4. It is our understanding that in the OU1 model used to calculate infiltration potential, 18" of rainfall per year was used. Is this an updated local average rainfall that should replace the 13.2" mentioned in the text?
32. Section 3.5, page 3-3. It is unclear in this section whether or not the potential for groundwater flow at Moffett Federal Airfield is affected by tidal fluctuations. Any studies conducted regarding the tidal effects on the groundwater should be referenced and the potential impact of tidal fluctuations on the groundwater flow should be addressed.
33. Section 3.5.3, page 3-7, para 3. It is stated that the "B/C aquitard is considered an effective barrier to any potential downward migration of contaminants." This statement needs to be supported by analytical or hydrogeologic data. Please reference data to support this statement.
34. Plates 3-2 through 3-5. Please provide a legend that describes the lithology types as indicated in these geologic cross sections. (e.g. CH=\_\_\_, CL=\_\_\_, ML=\_\_\_)
35. Section 3, Geologic Cross-Sections A-A' through E-E'. It would be helpful if the aquifer zone designations were indicated at the appropriate depths on the cross-sections.
36. Section 4.0, page 4-2, first para. Please remove the phrases following the listing of references. These phrases may be viewed as editorializing and do not add to the content of the report. The sentence, starting on page 4-1, should read: "Detected inorganic chemicals have been shown to be present at naturally occurring levels (IT 1992, PRC 1994d, and PRC 1995b)."
37. Section 4.1.5, page 4-10, para 2. The soil gas data collected should be correlated with the corresponding soil and groundwater data.
38. Section 4.2.3.1, page 4-15. The significance of detecting a constituent at a frequency greater than 5 percent is no longer an important criteria. EPA Region 9 PRGs eliminate the need to use the frequency of detection criteria.
39. Section 4.2.5, page 4-17, para 1. See comment on Section 4.1.5.
40. Section 4.7, page 4-30. This section discusses the Chase Park area. Please label this on Figure 4-14.
41. Section 4.10.1.1, page 4-38, para 3, fourth sentence. It is stated that the contaminant

distribution in groundwater may be explained by the presence of a channel deposit. A brief discussion should be provided in the report that explains how the chemical distribution map was compared with the sand channel map and how this hypothesis was concluded.

42. Section 4.10.1.1, page 4-39, first para. This paragraph states that the "deepest detections and highest concentrations of these solvents are from samples collected from the following monitoring wells". The first bullet below the paragraph lists well W7-8 as having a PCE detection of 170  $\mu\text{g/L}$  in October 1991. In fact, at well W43-2, PCE was detected at 260  $\mu\text{g/L}$  in 1991. This appears to be the highest concentration of PCE detected in this area. This discrepancy should be corrected.
43. Section 4.10.1.2, page 4-40. The first and second sentences are in disagreement with one another. The B2 aquifer is affected by some of the A1/A2 aquifer contaminants. TCE was detected in both A1/A2 aquifer zones and the B2 aquifer. Please describe the levels at which TCE was detected in the B2 aquifer.
44. Section 4.11, page 4-43, para 2. The OU6 RI Report and the Phase I Site Wide Ecological Assessment have not been approved as final yet. Please clarify this in the text.
45. Section 4.13, page 4-59, para 1 and page 4-62, paras 1, 2, 3, 4. The Site 12 Completion Report is not yet finalized. As commented earlier, EPA submitted comments on the Site 12 Completion Report (June 5, 1995 letter) that called for additional excavation and groundwater monitoring. Please clarify this in the text.
46. Section 4.13.2.1, page 4-61, para 4 (bulleted items). A list of semivolatile organic compounds (SVOCs) detected outside the excavated area is provided. Please provide a statement as to whether or not these detections exceed applicable standards or EPA Preliminary Remediation Goals (PRGs) and whether the SVOCs are commingled with total petroleum hydrocarbon (TPH) contamination.
47. Section 4.13.4, page 4-62, para 5. See comment on Section 4.1.5.
48. Section 4.19, page 4-82, paras 2 and 3. Reference is made to Figure 4-47, but the reference should be to Figure 4-42.
49. Section 4.21.3, page 4-93, para 1. Figure 4-46 does not presently show sample locations at the flux ponds, as mentioned here. Please correct Figure 4-46.
50. Figure 4-7. Based on the data presented, it appears that Site 3 is not the source of the PCB contamination observed. This should be discussed in the text.
51. Figure 4-20. TPH concentrations of greater than 700  $\mu\text{g/L}$  have been highlighted on this figure. The text should explain why this is a significant concentration. Please reference the Petroleum Sites Corrective Action Plan (CAP).
52. Figure 4-27. A cleanup level for TPH-extractable of 400 mg/kg is referenced on this figure. The source of this cleanup level should be explained in the text. Please reference the

Petroleum Sites CAP.

53. Figure 4-29. A cleanup level for TPH-purgeable of 150 mg/kg is referenced on this figure. The source of this cleanup level should be explained in the text. Please reference the Petroleum Sites CAP.
54. Figure 4-35. If sidewall confirmation samples were collected from the excavation, then these results should be shown. Also, the former underground storage tank (UST) location should be depicted on the figure.
55. Figure 4-36. This figure identifies groundwater concentrations of TPH. However, the estimated limit of TPH in the soil is shown. Also, the former underground storage tank (UST) location should be depicted on the figure.
56. Figure 4-37. The former underground storage tank (UST) location should be depicted on the figure.
57. Figure 4-38. Based on the data for Site 19, it appears that SVOCs are a bigger contributor to environmental risk than TPH-E. It would be more useful if the distribution of one of the more toxic SVOCs was also depicted on the figure. In addition, the symbol that consists of a partially filled in circle is not explained in the legend.
58. Figure 4-40. See comment on Figure 4-29.
59. Figure 4-41. An explanation should be provided in the text why no soil samples were collected in the area of the documented fuel release.
60. Section 5.1.1, page 5-2, para 2. The detection of concentrations of polychlorinated biphenyls (PCBs) at Landfill 2 soil should be added to the discussion.
61. Section 5.1.2, page 5-2, para 3. The second to last sentence states that shallow groundwater beneath Marriage Road ditch was not evaluated during this (IT's RI) study. Please clarify that this groundwater was sampled during OU5 studies.
62. Section 5.1.3, page 5-3, para 2. Although Site 4 has been closed, EPA does not recall that it has been capped. We understand that soil excavations will be occurring later on this summer. Please clarify.
63. Section 5.1.4, page 5-4, para 1. The detection of concentrations of polychlorinated biphenyls (PCBs) at Site 5 soil should be added.
64. Section 5.1.9, page 5-6, para 3. The Site 12 Completion Report is not yet finalized. As commented earlier, EPA submitted comments on the Site 12 Completion Report (June 5, 1995 letter) that called for additional excavation and groundwater monitoring. Please clarify this in the text.
65. Section 5.1.11, page 5-7, para 3, second sentence. The document states that low levels of

- VOCs were detected in soil. EPA does not consider 7,100  $\mu\text{g}/\text{kg}$  of benzene and 2,400  $\mu\text{g}/\text{kg}$  of toluene to be low levels (see Section 4.14.1.1). Please define what is considered "low level."
66. Section 5.1.11, page 5-7, para 4. The document states that low levels of contamination at Tanks 19 and 20 have not migrated significantly from the shallow soils adjacent to the tank locations. EPA does not consider 5,900  $\mu\text{g}/\text{L}$  of benzene (see Section 4.14.1.2) and 42,000  $\mu\text{g}/\text{L}$  of TPH (see Section 4.14.3.2) to be low levels. Please define what is considered "low level" regarding the contaminant concentrations and what is considered "significantly" regarding migration distance.
  67. Section 5.1.18, page 5-10, para 1. The description of Hangar 1 should be expanded to include its potential contribution to contamination to the regional groundwater plume through horizontal conduits, etc.
  68. Section 5.1.19, page 5-12, para 1, third sentence. This sentence reference the detection of VOCs in groundwater at the flux ponds. The data presented in Section 4.21.3 do not include this information. This inconsistency should be addressed.
  69. Section 5.4, page 5-20, para 3, first sentence. The acronym "MT3D" should be defined in the text and included in the list of acronyms.
  70. Section 6.2.2.4, page 6-9, para 3. It should be clarified that in addition to operations at Building 88, VOC contamination at Site 9 could potentially have come from activities in the vicinity of Buildings 29 and 31. At present, this is unclear.
  71. Section 6.2.2.4, page 6-11, para 3. Although this is a petroleum sites section, it should be mentioned that TPH contamination, as well as VOC contamination exists in the areas around Tanks 2 and 43. These two types of contamination are commingled.
  72. Section 6.2.2.6, page 6-14, para 2. Please present the magnetometer survey results in this document (possibly in an appendix).
  73. Section 6.2.2.6, page 6-16, para 1. This sentence seems to indicate that since Building 487 was found to be clean, that all buildings in the weapons storage bunkers area are clean. Is this true? Were the other building inspected as well?
  74. Section 6.2.2.6, page 6-16, para 5. Please clarify whether nuclear weapons or nuclear weapons components were never stored in the bunkers. Can the recent letters received from the bunkers' caretakers be used to reference this statement along with PRC 1995b?
  75. Section 6.2.2.6, page 6-17, para 1. The second sentence should be modified to read: "These ponds were taken out of service in January 1994 and will be remediated".
  76. Section 6.3.2, page 6-18, para 2, second bullet. EPA Region 9 does not consider frequency of detection as a selection criteria for determining chemicals of concern (COCs) in a human health risk assessment. Preliminary Remediation Goals provide a more realistic screen of

COCs when considering sites with large amounts of acreage and unevenly spaced sample points, as on military bases.

77. Section 6.3.2.2, page 6-20. Remove this section, as it is no longer considered part of the selection criteria for determining COCs. PRGs are now the recommended screening tool.
78. Section 6.3.3, page 6-21, 22. This list of COCs needs to be compared to final list to be included in the Phase I SWEA. The SWEA COCs should be a subset of this list. Since the Phase I SWEA is not accepted as final, it may be necessary to update this document's COC list once the Phase I SWEA is finalized.
79. Section 6.4.2.3, page 6-31. Reword the last sentence to reasonably explain the lack of surface water exposures.
80. Section 6.4.3, page 6-31, 32. Remove the editorializing throughout this section. It will be sufficient to explain and contrast the area average and point estimate approaches.
81. Section 6.4.5, page 6-38, last para. Explain or reference the determination of possibly naturally occurring metals through the areal extent and their average risk estimates, as done for beryllium at OU2-East.
82. Section 6.6, page 6-86, para 2. Please provide more justification why acute exposures are not of concern. Typically, acute effects are more noticeable at higher concentrations.
83. Section 6.6, page 6-86, para 4. Procedures for evaluating dermal exposures are presented in the Region 9 PRGs and should be followed. Delete the correction of oral toxicity for absorbed doses.
84. Section 6.6.1, page 6-89, para 2. Please explain why risk isopleths were not possible to be constructed. Other sites have graphically constructed them with minimal problems.
85. Section 6.6.1, page 6-91, para 3. The California State screening value for lead in soil is 130 ppm and should be considered here because it is more conservative than the EPA level.
86. Section 6.6.2, page 6-92, para 1. Why was only a small area chosen to demonstrate the exposure area approach? Results from one area of the total site may not be representative of the complete site. If the Navy is going to argue in favor of using this technique, cumulative risk throughout the whole base must be shown. EPA requested a sample by sample approach be used and be shown with risk isopleths. These were never drawn. Without these isopleths, it is impossible to see a time-lapsed effect of removals or remedial actions. Both methods are incomplete.
87. Section 6.6.4, page 6-94, para 4. The methods for a quantitative uncertainty analysis were not presented nor were they determined necessary for this base. Please delete this paragraph.
88. Figures 6-9 and 6-10. The symbol configuration used to illustrate intensity should be

proportional to the value, not inversely so. Please change the symbol intensities to be intuitive.

89. Table 6-26. Why is there a TBD (to be determined) in a station-wide review?

## EDITORIAL COMMENTS

90. Please submit only one copy of the draft final version of this document. We unnecessarily received five copies of the draft version.
91. From EPA's perspective, it is not necessary to resubmit the appendices for the Draft Final version of this document. It may not be necessary to submit them for the final version either.
92. This document should include an overall, summarized table of contents in every volume. The outside cover pages should provide more description than they presently do (e.g. Station-Wide Remedial Investigation Report, Chapters 1-4).
93. Section 1.2, page 1-2, para 1. The first sentence of this section does not make sense and should be reworded.
94. Section 2.4.1, page 2-32, para 1. Tables 2-2 through 2-4 summarize sample collection and analysis, not Table 2-1 through 2-3 as listed.
95. Section 4.14, page 4-63, para 3. "Site 5" should read "Site 14 South".
96. Section 6.6, page 6-88, first bullet. This should read Region 9, not Region 4.