



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, Ca. 94105-3901

March 4, 1994

Mr. Bill McAvoy
Remedial Project Manager
Mail Code: T4A1WM
Western Division
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-2402

Dear Mr. McAvoy:

We have reviewed the Draft Parcel B Site Inspection Report (Including Drydock 4 Area) for the Hunters Point Annex Superfund site. We are providing the attached comments to you. These comments include recommendations for some additional sampling which should be addressed in a work plan addendum. They also point to the need to: 1) better integrate the SI and RI data for the whole parcel, and 2) give more focus to ecological issues.

We appreciate your full consideration of these comments in your preparation of the Draft Final SI Report. Should you have any questions, you may contact me at (415) 744-2366.

Sincerely,

for *Roberta Blana*
RAYMOND SEID

Remedial Project Manager
Federal Facilities Cleanup Program

Attachments

cc: Cyrus Shabahari, DTSC
Barbara Smith, RWQCB
Amy Brownell, SFDPH
Ray Ramos, BEC, NAVFAC WESTDIV

**U.S. EPA Comments on the U.S. Navy's
Draft Parcel B Site Inspection Report (Including Drydock 4 Area),
Naval Station Treasure Island, Hunters Point Annex, San Francisco, California**

General Comments

1. The SI report covers the field investigation, field results, and conclusions and recommendations for each preliminary assessment (PA) area of Parcel B separately. The report should include an integrated discussion of both the IR and SI results, conclusions, and recommendations for all of Parcel B. This comprehensive picture of the site should: (1) identify the individual contaminants and/or the classes of contaminants that are of concern across Parcel B, and (2) summarize the areas that are of concern together with historical operations and contaminants associated with each of these areas.

2. There are several areas of Parcel B not included in a PA for this SI or in an IR. The SI report should include a brief description of what occurred in each of these areas and why a PA was not deemed necessary (if no PA was conducted) or what the conclusions of the PA were for each area (if a PA was conducted). For example, hazardous substances associated with ship repair were probably used at Drydocks 5, 6, and 7 and yet no PA or IR area is shown covering the area of these drydocks. Has potential contamination been addressed here?

3. For each Parcel B PA area, rationale are not given for the selection of target analyses for collected samples. A discussion should be provided describing specific chemicals that probably would have been associated with a particular location and the ability of the selected sampling and analytical methods to detect and identify these chemicals. For example, Building 146 in PA-23 is identified as a photograph development laboratory. The Navy should discuss common chemicals and chemical products used in a photograph development laboratory and the ability of the selected sampling and analytical methods to detect and identify these chemicals.

4. The work plans described for each PA area of Parcel B can be viewed as addenda to previously submitted remedial investigation work plans. In proposing this additional work, the SI report does not assess whether this additional work together with data from IR investigations and other interim actions is sufficient to prepare a parcel remedial investigation (RI) report. The Navy should include an assessment of whether this additional data and existing data are sufficient to prepare a parcel RI report, public health and environmental evaluation, and feasibility study. For example, no wells are proposed for PA-26. Has the groundwater in this area been adequately characterized as part of a previous investigation?

5. A significant portion of Parcel B is bordered by San Francisco Bay, some part extending several hundred feet into the bay. There are many potential pathways of contaminant migration either from Parcel C contaminant sources or through Parcel C from

other Parcel sources which may contribute to risk to those biota which reside in or rely on the bay and/or its shorefront. For example, there are storm drains and sewer lines discharging to the bay from Parcel C which have a history of illicit contaminant disposal to them. There are steam lines, storm drains, sewer lines, and utilidors which may act as natural conduits transporting contaminated surface water or groundwater from contaminant sources to areas of communication with the bay. And, there is a shallow, tidally-influenced aquifer to which parcel C source contaminants may be transported via infiltration.

The RI work plan should be integrated with the Ecological Risk Assessment, where possible. It should identify criteria to screen on-shore data for its potential to cause ecological risk in the intertidal and nearshore ecosystems. And, it should include sampling locations appropriate for determining the extent to which shore-based contaminants have migrated to the bay.

6. For easier reference, summary surface map(s) of Parcel B should be prepared indicating the locations of all existing and proposed soil borings, grab groundwater sample locations, Hydropunch locations, and groundwater monitoring wells. Existing and proposed sampling locations should be distinguished by the use of different symbols or colors. The maps should also illustrate the extent of existing and proposed exploratory excavations and the locations of existing and proposed trenches. Maps should include sampling locations in both IR and PA areas.

7. Summary map(s) should also be prepared showing the lateral extent of detected contamination in all areas of Parcel B. Different symbols and/or colors should be used to distinguish the degree/nature of detected contamination at each location.

8. The SI report should include vertical cross sections illustrating the vertical extent of soil and groundwater contamination in Parcel B, especially ones showing groundwater contamination at IR-6 and IR-10.

9. Several boxes on SI Plates showing risk level exceedences have not been colored in. Plates showing sampling results should be rechecked for coloring.

Specific Comments

1. Section 1.1, "Introduction" should also state which IR units are included within Parcel B.

2. Section 2.1, "Description and History of HPA" should include history and descriptions specific to Parcel B.

3. Section 2.2, "Previous Investigations" makes no mention of IR investigations conducted in Parcel B. The objectives and results of these IR investigations should be included here.

4. Section 2.2, "Previous Investigations" does not discuss any previous state or local

investigations in Parcel B. These investigations should be discussed here including a brief description of the objectives of the investigation; the nature, extent, and degree of any detected contamination; and recommendations for further involvement.

5. Section 2.2.1, "Surface and Subsurface Investigations" does not include the purpose, specific results, or follow up, for many of the described investigations. The SI report should include the initial objectives, findings, and follow up for each of the previous investigations. For instance, the SI states that the 1989 to 1991 Haring Lawson Associates RI at IR-6 and IR-10 detected several organic and metal contaminants in soil and groundwater and recommended that additional sampling be performed. The SI report does not discuss the general lateral extent and magnitude of the detected contamination nor whether additional sampling was performed in response to this investigation.

6. Section 2.3.2, "Geology." The description of stratigraphy and physiography in Parcel B is vague. The discussion should include the general thicknesses of geologic units at the center and edges of the parcel. Maps showing surficial geology and a vertical geologic cross-section through the parcel would greatly enhance the clarity of this discussion.

7. Section 2.3.3, "Hydrogeology" should include the depth to the B-aquifer, whether the aquifers are part of a larger regional groundwater flow system, and water quality in the A- and B- aquifers. Additionally, the thickness of the Bay Mud at the edges and center of the parcel along with the potential for the Bay Mud Deposits to act as an aquitard between the A- and B-aquifers should be discussed. Knowing whether the aquifers contain saline, brackish, or fresh water; whether these aquifers are part of a larger regional flow system; and what the degree of hydraulic communication is between the two units would greatly lend an understanding of contaminant fate and transport and the potential for groundwater contamination in Parcel B to impact human and ecological receptors.

8. Section 2.3.3, "Hydrogeology" states that groundwater within 200 to 400 feet of the shoreline is under direct tidal influence. It is noted that Parcel B is only approximately 800 feet wide and thus groundwater in one-quarter to one-half of the parcel is under direct tidal influence.

9. Section 3.3, "Data Evaluation Methods" states that interim ambient levels (IALs) were used for inorganic comparisons. The SI report should state the source for these IALs and provide their values. The IALs used in the SI were not approved by the agencies and the Navy should ascertain changes to its recommendations which might arise from a comparison of the SI data to the new IALs which were recently approved in concept.

10. Section 4.2, "Potential Receptors" states the "the discussion of potential receptors and exposure pathways presented in Preliminary Assessment, Sites PA-12 through PA-18 may be applied to the PA site investigations for the PAs in Parcel B." None of these PA sites is within Parcel B and an explanation as to why receptors associated with these other sites are applicable to Parcel B should be provided.

11. Section 4.2, "Potential Receptors" should address present or hypothetical future

offsite residents and workers as well as onsite workers and hypothetical future residents.

12. Section 4.2, "Potential Receptors" states that groundwater is not considered a primary exposure pathway because of "the limited potential for use of groundwater as a drinking water source." The SI report should include a description of potential aquifer yield and groundwater quality under the site to substantiate the limited potential for groundwater use as drinking water at and near the site. Additionally, if either the A- or the B- aquifer is part of a larger aquifer extending offsite, a discussion of actual or potential groundwater users associated with these aquifers should be included. Finally, A-aquifer groundwater under the parcel discharges into San Francisco Bay. Groundwater might be a pathway of concern if contamination from the site is adversely impacting aquatic biota in the bay. The SI report should include a discussion of aquatic receptors and fisheries in the bay.

The RI work plan should propose screening criteria by which to assess the potential for groundwater carried contaminants, through communication with San Francisco Bay, to cause risk to aquatic biota.

13. Section 4.2, "Potential Receptors" states that surface water is not considered a primary exposure pathway because "surface water flows are primarily restricted to the storm and sewer system." Storm water, and due to a sewer-storm drain cross connection, some sewer water discharges to San Francisco Bay. Depending upon the nature and degree of contamination, contamination migrating via the surface water pathway could adversely impact aquatic ecological receptors and bay fisheries. The potential receptors subsection should discuss aquatic receptors.

14. Section 5.1, "PA-45 Steam Lines" refers to Plates 8 and 9 to show steam line inspection and sampling locations. Several of the steam lines are shown as not investigated during the SI. The SI report text should state why these lines were not investigated.

15. Section 5.2, "PA-46 Fuel Distribution Lines, Tank Farm" refers to Plate 10. Plate 10 should show sampling locations for fuel lines as well. It is difficult to get a comprehensive picture of sampled areas from the plates that follow.

16. Section 5.2.5, "PA-46 Fuel Distribution Lines, Tank Farm; Discussion and Recommendations" states that analytical results for samples from Test Pits PA46TA07 through -TA11 do not indicate that point source releases have occurred at these locations and does not recommend further investigation. Sample results indicate that Aroclor-1260 was detected above HBLc at location PA46TA10. Justification should be provided for why the lateral and vertical extent of contamination above a health based benchmark will not be investigated. Additionally, a single point (PA46TA09) does not seem to be adequate to characterize contamination along the entire Berth 64 line.

17. Section 5.3.1, "PA-50 Storm Drain and Sanitary Sewer Systems, Storm Drain System" states that storm drain lines are below static water levels in the northern half of Parcel B. What are static water levels in a tidally-influenced area?

18. Section 5.3.1, "PA-50 Storm Drain and Sanitary Sewer Systems, Storm Drain System" states that the storm drain lines were used for the disposal of hazardous materials. The report should include the types of hazardous materials and probable disposal locations.
19. Section 5.3.1, "PA-50 Storm Drain and Sanitary Sewer Systems, Storm Drain System" lists as one SI objective to evaluate if storm drain contaminants have been released to San Francisco Bay. No sediment samples were collected from around the storm drain outfalls as a means of satisfying this objective. Given the sporadic nature of storm water discharges and the difficulty of determining through storm drain sediment analyses alone the degree to which transport through the storm drains has occurred as an historical matter, the SI Report should be modified to better identify the satisfaction of this objective as incomplete and propose a means by which the gaps will be filled in the RI.
20. Section 5.3.1, "PA-50 Storm Drain and Sanitary Sewer Systems, Storm Drain System" states that major breaks in storm drain lines were infrequent. The Navy should indicate where these breaks occurred. Were samples collected from soils around them?
21. Section 5.3.1, "PA-50 Storm Drain and Sanitary Sewer Systems, Storm Drain System" states that field personnel noted sewage materials and odors at storm drain station PA50SW218 and that Navy control diagrams indicate that the sanitary sewer and storm drain lines intersect. This cross-connection should be corrected immediately.
22. Section 5.3.1, "PA-50 Storm Drain and Sanitary Sewer Systems, Storm Drain System." Table 21 and Plate 21 indicate that only a single test pit will be made during the RI to investigate the potential for releases from the storm drain system. Justification should be provided for why this location was selected and why only one location is sufficient to characterize a fairly large drainage system with five separate outfalls and storm drain systems.
23. Section 5.3.2, "PA-50 Storm Drain and Sanitary Sewer Systems, Sanitary Sewer Lines" refers to Reaches 1 through 10. These reaches are not shown on Plate 22 (map of the sewer system) and should be identified.
24. Section 5.3.2, "PA-50 Storm Drain and Sanitary Sewer Systems, Sanitary Sewer Lines" states that several interconnections remain between the sewer and storm drain systems. Section 5.3.1 references only one. How many interconnections are there and where are these located? Again, these cross-connections should be corrected immediately.
25. Section 5.3.2, "PA-50 Storm Drain and Sanitary Sewer Systems, Sanitary Sewer Lines" describes the installation of two monitoring wells adjacent to sewer lines and the collection and analysis of water samples from these wells. Although the purpose of these wells was to evaluate groundwater quality and the potential for flow into and out of sewer vaults, the adjacent sewer vaults were not sampled. If the objectives of these monitoring wells are to be met, both the wells and the closest sewer vaults should be resampled.
26. Section 5.3.2.3, "PA-51 Former Transformer Sites, Field Investigation" states that

samples were collected from historic transformer lines "as appropriate." The SI report should contain the criteria for collecting or not collecting samples at each location. For instance, Table 36 indicates that near Building 132 staining on the wood floor and thick tar-like material on the switch box cover and concrete were observed, yet no sample was collected. The Navy should evaluate whether the present sampling program is adequate to characterize PCB contamination at former transformer sites.

27. Section 5.3.2.5, "PA-51 Former Transformer Sites, Discussion and Recommendations" states that no further investigation is necessary at location PA51SS01 even though Aroclor-1242 exceeded the 10^{-6} HBLc for Aroclor-1260. Explanation should be provided for why no further investigation is necessary at this location even though a HBLc is exceeded.

28. Section 6.2, "PA-23 Building 146, former Building 161, and former Building 162," states that no samples were collected at Building 162, a former paint storage shed, as this building had been demolished and soil excavated. A soil sample should be collected from the excavation to confirm that underlying soil is clean and not contaminated by vertical or lateral migration of contamination from the former paint shed.

29. Section 6.3.2, "PA-24 Former Building 124, Building 125, Building 127, and Building 130; Previous Investigations," refers to historic soil borings in this area. Plate 27 does not show either the locations or the results. A plate and a table should be prepared showing the results of previous investigations in this area.

30. Section 6.3.3, "PA-24 Former Building 124, Building 125, Building 127, and Building 130; Field Investigation," should state why groundwater is of concern under PA-24. Similarly, sections for other PA areas should state why groundwater is or is not of concern in those areas, as well.

31. Section 6.3.3, "PA-24 Former Building 124, Building 125, Building 127, and Building 130; Field Investigation," states that no work was performed near Building 124 as this area was investigated during RI work at nearby sites IR-6 and IR-10. A brief discussion of the findings and recommendations of these investigations in the area of Building 124 should be included in the SI text.

32. Section 6.3, "PA-24 Former Building 124, Building 125, Building 127, and Building 130" indicates that cadmium was detected in groundwater near Building 125 at concentrations slightly above federal and state MCLs yet recommends no further investigation in this area. The SI report should address possible sources of this cadmium and further investigation of its lateral and vertical extent, if warranted.

33. Section 6.4.4, "PA-25 Building 124, Discussion and Recommendations," does not include a discussion or recommendation for the sample collected from PA25SS04 where the 10^{-5} HBLc for Aroclor-1260 was exceeded. Plate 31 shows no further work is recommended in this area. The SI should discuss these results and address what means will be taken to characterize the lateral and vertical extent of this detected PCB contamination, if warranted.

34. Section 6.8, "PA-57 Drydock 4 Area." The SI should state why no sample was collected from the oil stain under a leaking transformer and submitted for PCB-analysis. If PCB contamination is of concern here, exploratory borings should be made to assess the vertical and lateral extent of contamination.
35. Section 6.8, "PA-57 Drydock 4 Area." The SI should address why asbestos-containing material associated with pipe wrapping in the drydock area was not sampled and what action will be taken regarding this pipe wrapping.
36. Section 6.8.4, "PA-57 Drydock 4 Area, Discussion and Recommendations." Once the configuration of the storm drain system is evaluated, sediment samples should be collected from San Francisco Bay sediments around the outfall(s) to determine if contamination from storm drains has adversely impacted the bay.
37. Section 7.0, "Risk Assessment Summary." Appendix I states that risk assessment of the sandblast material at the PA-31 site is not necessary as this material is tentatively scheduled to be removed from the site. The sandblast material has not yet been removed and thus remains on site with associated risk to human health and the environment. Once this material is removed from the site, confirmatory samples need to be taken to assess residual contamination associated with the sandblast grit.
38. The lack of samples collected from within the dry docks proper should both be explained and remedied.
39. Please see the attached Memorandum from Matthew Hagemann to Ray Seid regarding our hydrogeologic review comments which should be addressed along with the above comments.

February 28, 1994

MEMORANDUM

SUBJECT: Review of the draft *Hunter's Point Parcel B Site Inspection Report*

FROM: Matthew Hagemann, Hydrogeologist *Matt*
Technical Support Section (H-9-3)

TO: Ray Seid, RPM
Navy Section (H-9-2)

Roberta Blank, RPM
Navy Section (H-9-2)

I have reviewed the hydrogeologic aspects of the January 11, 1994 draft Site Investigation Report (SIR) for Parcel B. In my review I have referenced the California Base Closure Environmental Committee's report *Recommended Content and Presentation for Reporting Hydrogeologic Data During Site Inspections* (1993). My main concerns are summarized below. More specific concerns follow, with references to sections of the report.

General Comments:

(1) Groundwater flow rate and direction in the tidally influenced A-aquifer are not known. Water levels in the A-aquifer in Parcel B have been shown to fluctuate up to 3.5 feet in response to tidal fluctuation (HLA, 1992); however, the water level contour map (Plate 4) included in the SIR is based only on water-level measurements taken over a seven hour period on August 16, 1993 in the A-aquifer. Accurate determination of groundwater flow in tidally influenced aquifers can only be determined if the mean hydraulic gradient is ascertained (Serfes, 1991). A technique for determining the mean hydraulic gradient is to compare groundwater to surface water elevations over 25 or 71 consecutive hourly readings (Serfes, 1991). Records of groundwater and surface water fluctuations over 72-hour periods are included in a report by HLA (1992); however, the mean gradient was not calculated in this report.

(2) Quantification of fundamental characteristics of the aquifers is not provided in the SIR. For example, values for hydraulic conductivity, transmissivity, and storativity are not provided. Tests for these parameters were previously conducted by HLA (1991); however, these results were not included in the SIR.

(3) The format of the *Recommended Content and Presentation for Reporting Hydrogeologic Data During Site Investigations* (CBCEC, 1993) was not followed in the SIR. Missing components include:

(a) summaries of historic water quality and potentiometric data

(b) identification and discussion of trends in analytical and potentiometric data

(c) an evaluation of the monitoring systems and monitoring and reporting programs to provide for estimates of the nature, extent, and rate of migration of contaminants in groundwater

(d) tabular summaries of the histories of mean water levels in each well

(e) groundwater elevation hydrographs

(f) hydrogeologic cross sections to include identification of vertical and horizontal flow paths within all of Parcel A

(g) structure contour maps

(h) water level contour maps based on mean water levels, to include explanation for the omission of data.

(i) cross-sections to include the vertical distribution of hydraulic head between the A-, B- and bedrock aquifers.

(j) results of tests for the determination of aquifer properties

(k) rates and directions of groundwater flow

(l) rates and extent of groundwater contamination, to include

- background water quality
- summary tables and graphs
- contaminant distribution and cross sections

(m) recommendations for the development of a long term groundwater monitoring plan.

Specific Comments:

Section 5.4.5: The groundwater monitoring well, PA24MW02A, is located within 50 feet of a PCB release at PA51SS02 to soil that exceeds health-based risk levels. This well should be sampled for the presence of Aroclor 1260.

Section 6.3.2: The locations of six monitoring wells and two soil borings are referenced to Plate 27. However, the referenced plate only shows the location of three monitoring wells.

Section 6.3.3: On the basis of previous field investigations, a stated objective in this section was the determination of groundwater flow direction and gradient. However, no conclusions on the groundwater flow direction and gradient were reached in this section.

Section 6.3.4: An explanation of previously detected contamination (as described in section 6.3.2) was not included in this section.

Conclusions and Recommendations:

Stated objectives of the Parcel A SIR (section 1.1) included an assessment of site-specific hydrogeologic conditions. Additionally, as stated in section 1.1, further objectives "at sites where there was existing analytical data indicating potential soil or groundwater contamination, the focus of the SI included . . . evaluation of the groundwater flow direction and gradient and . . . further identification of migration pathways."

It is my conclusion that the Parcel B SIR has failed to satisfy these objectives. To adequately assess the stated objectives, it is my recommendation that the SIR follow the outline of the CBCEC, in addition to addressing each of the specific comments outlined in this memo.

References:

Harding Lawson Associates (HLA), 1991. *Draft Phase I Aquifer Testing Results, Recommendation for Phase II Aquifer Testing, Naval Station Treasure Island, Hunter's Point Annex, San Francisco, California.* November 21, 1991.

_____, 1992. *Technical Memorandum, Tidal Influence Monitoring, Hunter's Point Annex, Naval Station, Treasure Island, San Francisco, California.* August 6, 1992.

California Base Closure Environmental Committee, 1993. *Recommended Content and Preparation for Reporting Hydrogeologic Data During Site Investigations.* August 5, 1993.

Serfes, M.E., 1991. *Determining Mean Hydraulic Gradient of Groundwater Affected by Tidal Fluctuations.* *Groundwater*, vol. 29, no. 4, pp. 549 - 555.