

## CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION  
1111 JACKSON STREET, ROOM 6040  
OAKLAND 94607Phone: Area Code 415  
464-1255March 12, 1986  
File No. 2189.8009 (TJB)Commander J. T. Sherron  
Head, Facilities Management Department (09B)  
Department of the Navy  
Western Division, Naval Facility Engineering Command  
P.O. Box 727  
San Bruno, CA 94066Subject: Review of Preliminary Confirmation Study (Verification Step)  
Report, Moffett Field Naval Air Station, November 1985

Dear Commander Sherron:

I am enclosing a copy of Regional Board staff's comments regarding the Confirmation Study Report dated November 1985 prepared by Earth Science Associates. The enclosed comments were discussed with representatives from Moffett Field and their consultants (Earth Science Associates and Montgomery Engineers) at meetings held on January 31, 1986, February 7, 1986, and March 5, 1986. It is my understanding that the enclosed comments would be addressed in the final report to be submitted by Earth Science Associates.

Staff is available to discuss the enclosed comments with you if you so desire. If you have any questions or comments please contact Tom Berkins of my staff at (415) 464-1249.

Sincerely,

  
Richard K. McMurtry  
Section Leader  
South Bay Division

Enclosure

cc: Chuck Armstrong, DOHS/TSCD  
Robert Cooley, Montgomery Engineers  
Ensign Hawkins, Moffett Field  
Tom Iwamura, SCVWD  
Lewis Mitani, EPA Region 9  
Charles Nichol森, SCCHD  
Phil Parisius, City of Mountain View  
Al Rench, Western Div., NAVFACENCOM  
Gil Torres, SWRCB  
Julio Valera, Earth Science Assoc.

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**SAN FRANCISCO BAY REGION**

## INTERNAL MEMO

TO: Richard K. McMurtry, Section LeaderFROM: Thomas J. Berkins  
Environmental EngineerSouth Bay DivisionDATE: March 12, 1986SIGNATURE: Thomas J. BerkinsSUBJECT: Review of Preliminary Confirmation Study (Verification Step) Report,  
Moffett Field Naval Air Station, November 1985

The following comments were discussed with representatives from Moffett Field and their consultants (Earth Science Assoc. and Montgomery Engineers) at meetings held on January 31, 1986, February 7, 1986, and March 5, 1986.

1. Page 3-4, first paragraph - The cross-sections presented in the report do not indicate an extensive clay aquitard at a depth of 100 to 150 feet near Moffett Field. Other investigations conducted in the vicinity of Moffett Field indicate the B-C aquitard is present at a depth of 150 - 200 feet. This should be clarified.
2. Page 3-4, fourth paragraph - Various previous reports submitted to the Regional Board staff indicated that artesian conditions did exist in the C aquifer wells north of the Bayshore Freeway. This should be clarified and specific supporting documentation provided.
3. Page 4-2, last sentence - The report states that three boreholes were abandoned; however, Figure 4-1 indicates that only two boreholes were abandoned. This should be clarified. In addition, the methane levels detected should also be reported.
4. Page 4-3, first sentence - The difference between landfill and refuse fill needs clarification.
5. Figures 4-2, 4-9, and 4-10 - The explanation key presented on the figures designates silt, clayey silt or sandy silt as aquitards; however, the cross-sections presented designates these zones as aquifers. This should be clarified.

The sand pack and screened interval for all monitoring wells presented on the cross-sections should be shown. The sand pack and screened interval should also be shown for all A and B aquifer monitoring wells installed adjacent to all B and C aquifer wells presented on the cross-sections (e.g. MW-10 at W4-1B, MW-6 at W6-1B, W10-1A and 2A at W10-1B and 2B, MW-20A at MW-20B, W7-3A at W7-3B, MW-17A and 17B at W3-1C, and W3-3A at W3-3B). In addition, the locations of soil samples collected for chemical analyses and lithologic description at each borehole should also be shown on the cross-sections. It would also be useful to present the results of soil and groundwater samples collected for each monitoring well on the cross-sections.

6. Figures 4-3, 4-4, 4-5, 4-6, 4-8, 4-11, 4-12, 4-14, 4-15 - The geophysical logs presented on the various figures varied widely from well

to well and in some instances the logs indicate abnormal behavior. In particular, the short and long normal curves often criss-cross each other and the electric logs frequently "drift." An explanation and interpretation of the various logs at each borehole is needed, particularly noting which logs, if any, may be invalid.

The aquifer zones shown on the three cross-sections should also be designated on the "composite log" for each figure. Similar to comment #5 above, it would be useful to indicate the sand pack and screened interval for each well adjacent to the composite log on the figure.

Similar to comment #5 above, the explanation key designates silt, clayey silt, and sandy silt as aquitard materials; however, it appears this contradicts the composite log aquifer designations. Clarification is needed.

7. Page 5-1, third paragraph - Information regarding private wells should not be limited to Moffett Field. Private wells located off-site of Moffett Field which may be impacted by contamination from Moffett should also be identified ( e.g. well 10Q03, 10Q\*, and 10G1).

8. Page 5-1, last sentence - Similar to comment #1 above, based on other investigations in the area, it appears that the C aquifer lies below a depth of 150 - 200 feet. Clarification is needed.

9. The following information should be included in Table 5-1:

- aquifer zone monitored
- sealed interval(s)
- well depth
- measurement point elevation
- sand pack interval elevations and depths
- screened interval elevations and depths
- ground surface elevation
- casing diameter
- casing depth and material
- geophysical log availability

The information requested above should be included for all wells installed to date, including wells installed during previous investigations. All elevations should be referenced to USGS datum.

10. Page 5-2, first paragraph - Based on the boring logs and cross-sections presented in this report, it appears that the five separate B aquifer units are not laterally extensive across the site. As mentioned earlier in this memo, it also appears that several zones designated as B aquifers are aquitard materials. This should be clarified.

11. Page 5-2, first paragraph, last sentence - Monitoring wells and/or aquifers which indicate "apparent leakage" between aquifer units should be identified. Although there may be interlensing of the sediments

within the B aquifer zone(s), it is not appropriate to treat the entire B aquifer as a whole. Thus, monitoring wells installed into the B aquifer should only be constructed to monitor a single discrete aquifer zone.

12. Page 5-2, third paragraph - Continuous water level recorders should be considered to determine any effects of tidal fluctuations.

13. Page 5-3, first sentence - The areas or wells which suggest a hydraulic connection between the A and B aquifers should be identified and documentation provided.

14. Tables presenting the results of volatile organic analyses for soil samples should be included in Section six.

15. Page 6-2, third paragraph - The third sentence states that all the volatile organic soil sample results were below 0.13 mg/kg; however, xylene was detected at 0.29 mg/kg in boring A1-4. This should be clarified.

16. Table 6-13 - Monitoring well W7- 3B is incorrectly labeled as MW-3B.

17. Figures 6-1 through 6-4 - The specific contaminant result for each monitoring well should be presented on each figure.

18. Table 6-15 - The results of analyses for cis-1,2-dichloroethene should be included under non-priority pollutants.

19. Page 6-12, second paragraph - The two AVGAS tanks identified as having leaked during the mid-1960's should be identified and located on the site nine map. In addition, the location of the other underground tanks at site nine should be provided.

20. Page A-2, first paragraph - The procedures followed to contain and dispose of contaminated soil and groundwater needs clarification, especially for any soil and groundwater disposed of in the field adjacent to the site 2 staging area. An explanation of the site 2 staging area is also needed.

21. Page A-2, second paragraph - Elaboration of the well development procedures is needed.

22. Page A-7, second paragraph - It is unclear what "classification" was conducted for the soil samples and which samples were classified.

23. Page A-8, first paragraph - It appears that the initial boring was drilled to a depth of 231 feet prior to installing the 90 feet of steel casing. Thus, possible cross-contamination of the C aquifer may have occurred. This should be clarified.

24. Page A-9, first paragraph, fourth sentence - Clarification regarding the "required" depth is needed.
25. Page A-9, first paragraph - The boring number and location for borings which were abandoned needs clarification. Figure A-2 should indicate the abandoned boring locations as well as the off-set locations.
26. Page A-9, last paragraph - The original and off-set boring locations should be shown on the figure. The figure for site 9 is incorrectly referred to as figure A-3.
27. Appendix G - Additional information regarding the five active wells listed in Table G-2 is necessary. Available information regarding screen, sand pack, and sealed intervals, usage, pumping rates, monitoring, and condition of the wells should be provided. Additional investigations, including sampling, TV inspection, and geophysical logging, should be conducted for the active wells as well as the inactive wells (14M\*, 14M1, and 14M2).
28. Tables and a summary of the first three months of water quality and water level data should be included in the final report.
29. Details regarding any private well sampling conducted during the Confirmation Study should be included in the final report.
30. Chapter seven, "Environmental Assessment" - This chapter contained a comparison of the concentration of contaminants detected at each site with various soil and groundwater criteria to determine whether further characterization was required. In particular, at sites one and two, the conclusion presented implied that in areas of poor background water quality, primarily due to high TDS, further characterization was not required. As I mentioned at the 1-31-86 meeting, it is necessary to define the extent of contamination in all areas, regardless of whether poor background water quality exists.

State and Regional Board policies require the maintenance of existing water quality in adjacent, uncontaminated groundwater unless sufficient justification can be made for less stringent requirements. The procedure for determining whether maintenance of existing water quality is reasonable must be based on technical and economic considerations and the consequences of allowing degradation relative to potential and existing beneficial uses. Thus, at this time it is inappropriate to limit the investigation to determine the full extent of any soil and groundwater to areas of background high quality soil and groundwater. Once the complete definition of the extent of contamination is known in all areas, cleanup alternatives would then be developed which would address whether maintenance of existing water quality is reasonable. I understand that the comparison of contaminants detected at each site

with various soil and groundwater criteria to determine whether further characterization is necessary will not be included in the final report.

31. Comments regarding the November 1985 draft Work Plan for Step II Confirmation Study (Characterization Step) are not addressed in this memo. I have verbally presented comments regarding the draft work plan to Moffett representatives at the January 31st and February 7th meetings. Revised drafts by Earth Science Associates were distributed at both meetings and were discussed at that time. The final work plan for the Characterization Step of the Confirmation Study was distributed at the March 5, 1986 meeting to myself and Gil Torres. Additional copies of the work plan were to be sent to the various other regulatory agencies. Formal comments regarding the adequacy of the work plan will be forthcoming in a later memo.