



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

April 22, 1996

Joseph Joyce
BRAC Environmental Coordinator
Environment and Safety (Code 1AU)
MCAS El Toro
P.O. Box 95001
Santa Ana, CA 92709-5001

Dear Mr. Joyce:

EPA has reviewed the "Draft Phase II Remedial Investigation Report, Operable Unit 2A-Site 24" for MCAS El Toro, received on January 20, 1996. Overall, the report is well written and the investigations are complete for Site 24. We appreciate the high level of teamwork from the Navy/Marine Corps and contractors. Please address the enclosed comments (Enclosures A and B) in the revised report. If you have any questions, I can be reached at 415/744-2368.

Sincerely,

A handwritten signature in black ink, appearing to read "Bonnie Arthur", written in a cursive style.

Bonnie Arthur
Remedial Project Manager
Federal Facilities Cleanup Office

Enclosures

cc: Mr. Tayseer Mahmoud, DTSC
Mr. Larry Vitale, RWQCB
Mr. Dante Tedaldi, Bechtel
Mr. Andy Pizskin, Southwest Div.

ENCLOSURE A

EPA COMMENTS ON THE DRAFT PHASE II
REMEDIAL INVESTIGATION (RI) REPORT
OPERABLE UNIT (OU) 2A - SITE 24

MAJOR

1) Pages ES-1; 4-10, Section 4.2.1; 6-5, Section 6.2.1; 6-26; The draft final OU 2A RI report must clarify the following issues: A) Any potential non-volatile organic compound (VOC) soil source areas are considered part of the remedial investigation/feasibility study (RI/FS) for OU 3. OU 2A was established to further investigate the VOC source area which had been initially investigated in the CLEAN 1 Phase 1 investigations.

B) During the preparation of any FS for groundwater at MCAS El Toro, including OU 2A, inorganics must be evaluated and obviously included in the consideration of cleanup alternatives. Inorganic compounds in the groundwater have been assessed as part of the OU 1 risk assessment. As agreed by the BCT, the groundwater samples collected as part of the Phase II investigation for OU 2A included metals analyses as well as VOCs. Many of these metals are believed to result from naturally occurring metals in the soil. An ongoing effort for OU 1 includes evaluation of background inorganics levels in groundwater. As new basewide groundwater samples were collected in February/March, this issue should be resolved soon. The OU 2A RI must include an overview of the OU 1 groundwater RI/FS and coordination efforts between OUs 1 and 2A.

C) The OU 2A risk assessment does not present a complete assessment of risk for the groundwater within this area. Total risk for groundwater has been calculated as part of the OU 1 risk assessment and this should be discussed in the RI as the OU 2A risk assessment only addresses risk contributed by VOCs.

2) Pages 3-30; 4-78, Section 4.2.4.2; Figure 4-15; The following three areas require further delineation in the remedial design phase. Sufficient data has been collected to complete the feasibility study/record of decision: A) Additional borings which assess the groundwater approximately 180 feet bgs, under Building 297, sampled at the bottom of Boring 24CPT81, B) Horizontal delineation upgradient of the main VOC source area near Buildings 296 and 297, and C) Figure 4-15; additional monitoring wells upgradient of 18_PS3.

3) Pages 4-40, 4-61; The text discusses a TCE detection in the soil gas (Figure 4-4) near a hazardous waste storage area on the

east end (south end of cross-section D-D') of Building 360. TCE concentration levels in the vadose zone and shallow aquifer may be attributed to this storage area (this storage area does not appear to be included in list of surface sources in Table 4-3), however, the soil gas levels may also be attributed to the storm drain conveyance system to Agua Chion Wash (the conveyance system is incorrectly referred to on page 4-61 as Bee Canyon). Please describe how the hypothesis of the conveyance system as the probable source will be validated?

4) As the draft final report will include validated data which was unvalidated in the draft RI, please revise the text accordingly.

5) Page 4-65, Figure 4-14; The BCT has had ongoing discussion with the Navy and CLEAN I contractors regarding using tighter concentrations ranges (ranges of 5-10 ppb or 5-20 ppb maximum) to depict the extent of TCE concentrations on groundwater isoconcentration plume maps. Please consult with the BCT or OU I Navy RPM regarding this issue.

6) Page 4-65, Figure 4-14; Please change the title of this figure to "On and Off-site Extent of TCE Concentrations in Principal Aquifer" as onsite plumes are shown on this map. Additionally, as the onsite VOC-contaminated principal aquifer is excluded from Site 24, refer to the Interim Action OU 1 Feasibility Study for detail regarding proposed action for this area, as well as the coordination efforts between both Operable Units.

7) Page 7-6, Sections 7.2.2.1 and 7.2.2.2; Please further refine the Remedial Action Objectives (RAOs) with the BCT prior to submittal of Feasibility Study.

MINOR

1) Page 1-12; The original date for the draft Phase II was fall 1994.

2) Page 2-4, Section 2.2.4; Change "Base Closure Plan" to "Base Realignment and Closure Plan."

3) Page 2-7, Figure 2-3; The outline is not clear around Building 296.

4) Pages 2-18, 2-20; It would be helpful to cross-reference to some of the figures which appear later in the report, which depict the TCE groundwater hot spot discussed in the text.

5) Page 2-26; The TOC analyses are not mentioned here although plans for analyses are mentioned on pages 2-9 and 2-19.

- 6) Page 2-29, Section 2.9.3.1; Where in the text are the results of the soil field duplicates discussed?
- 7) Page 3-4, Section 3.1.2.2; Show former location of Building 1589 on a map, possibly with dotted lines.
- 8) Page 3-5; Misnumbering starting with this page (missing pages 3-6, 3-8, 3-10).
- 9) Page 3-15, Figure 3-5; One building has different numbers (#655 and #855) on Figures 2-7 and 3-5.
- 10) Page 4-13; Misnumbering starting with page 4-13 (missing pages 4-14, 4-16, 4-18, 4-20, etc.).
- 11) Page 4-59; Are the locations for sample points 24SS5, 24CPT1 and 24CPT81 depicted on Figure 4-12?
- 12) Page 4-75; Add key for data qualifiers.
- 13) Page 7-6, Section 7.2.2; Delete "Interim" from last sentence.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 9

75 Hawthorne Street
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MEMORANDUM

SUBJECT: Review Comments of El Toro OU2a Phase II RI

FROM: Herbert Levine, Hydrogeologist
FFCO, Technical Support Section

A handwritten signature in black ink, appearing to read "Herbert Levine".

TO: Bonnie Arthur, RPM
FFCO, Navy Section

General Comments

1. This report is very well written and appears to address the objectives stated. The data gaps identified in Phase I have been adequately addressed to support the FS.
2. Of the seven decisions identified through the DQO process the fifth, does groundwater under site 24 pose an unacceptable risk, is addressed through a baseline assessment only. The risk assessment assumes a residential drinking water well at the plume hot spot. Since this evaluation indicated unacceptable risk, the next step is to evaluate the more realistic scenario, are receptors off-site exposed at an unacceptable risk? What are the implications of not remediating the site 24 VOCs and letting this contamination migrate off-site? If we can assume that the groundwater contamination has reached steady-state, then the off-site data indicates risk in the 10^{-5} range. So, the data presented in this report should be evaluated in a risk management context.

Specific Comments

1. What is the purpose of Figure 2-2? The information presented in the text does not benefit from this Figure.
2. Figures 2-4, and 2-6 do not present soil investigation locations.
3. The title of Figure 2-8 is incomplete. The information presented in the text does not benefit from this Figure.
4. Section 3.6.1 Regional Aquifer Systems, page 3-37. The third paragraph discusses the lithologic separation of the shallower and deeper aquifers and cites multi-port and cluster wells as evidence. The CPT and hydropunch data indicates lithologic separation within the shallow aquifer as well.

5. Section 4.2.3 Regional Groundwater Conditions, page 4-61. Figures 4-13 and are not acceptable. Concentrations should be presented as isocontours as in Figure 4-15. Since data are not presented in these Figures, it is not possible to evaluate the hypothesis discussed with regards to possible impact of the Bee Canyon Wash.

6. Figure 4-15 shows that the Navy has adequately defined the VOC hot spot upgradient of 09_DGMW45. Why was the 5 ppb contour line not drawn between wells 12_DBMW48 and 12_UGM31? What is the significance of a 0.5 ppb contour line? I suspect that there is none and suggest using 5 ppb as the lowest contour interval.

7. Section 4.2.4.2 Vertical Characterization, page 4-78, fourth para, please add that the CPT data indicates silt and clay layers within the upper 40 feet of the shallow aquifer. It is also interesting to note that the hydropunch and CPT data shows higher concentrations in sands and silty sands with lower concentrations in silts and clays.

8. It would be useful to combine cross-sections from Sections 3 and 4 (e.g., Fig. 3-10 and 4-10, etc.) This would be very helpful for the project team to visualize the dimensional aspect to the contaminated areas. This would also be useful for the design optimization of the locations and lengths of extraction and injection wells.

9. Section 5.1.2 Chemical Persistence, page 5-2 and Figure 5-1. Figure 5-1 describes potential transformation pathways for PCE/TCE which is difficult to interpret. Is this showing transformation reversals or equilibrium potentials? (i.e., trans-1,2-DCE to 1,2-DCA, cis-1,2-DCE to 1,2-DCA, and 1,1-DCE to 1,1-DCA). For example see, Vogel et.al., 1987, Transformation of halogenated aliphatic compounds. *Environ. Sci. Technol.* 21(8):722-736. Please add as a citation the origin of Figure 5-1.

10. Agree with modelling presented in Section 5.

11. Agree with most of Section 7. Section 7.2.1, last bullet is vague, please expand. Also, based on the data presented here and telephone discussions, it would be appropriate for the Navy to evaluate dual phase extraction wells. If the pump test do show that it is possible to achieve 75-80 ft. of drawdown (Pat Brooks, pers. com.) then the zone of interest (top 40 - 50 ft.) would be dewatered. The vapors remaining as soil gas should be collected.