

M60050.000965

**DEPARTMENT OF TOXIC SUBSTANCES CONTROL**

M60050.000965  
MCAS EL TORO  
SSIC # 5090.3



Region 4  
Vest Broadway, Suite 425  
Beach, CA 90802-4444  
(310) 590-4868

1995 AUG -4 PM 1:44

August 2, 1995

Mr. Joseph Joyce  
BRAC Environmental Coordinator  
U.S. Marine Corps Air Station - El Toro  
P. O. Box 95001  
Santa Ana, California 92709-5001

Dear Mr. Joyce:

**REVIEW COMMENTS ON THE DRAFT ENGINEERING EVALUATION/COST ANALYSIS (EE/CA) FOR SITES 4, 7, 11, 13, 14, 19 AND 20. AT MARINE CORPS AIR STATION (MCAS) EL TORO**

The Department of Toxic Substances Control (DTSC) received the subject documents in May and June 1995 and has completed its review of the following Engineering Evaluations/Cost Analysis Reports:

- ▶ Site 4, Unit 2 Ferrocene Spill Area
- ▶ Site 7, Unit 1 Former Drop Tank Storage Area No. 2
- ▶ Site 11, Units 1 and 2 Former Transformer Storage Area
- ▶ Site 13, Former Oil Change Area
- ▶ Site 14, Former Battery Acid Disposal Area
- ▶ Site 19, Aircraft Expeditionary Refueling Site
- ▶ Site 20, Units 2 and 3, Hobby Shop

As a result of the EE/CAs being very similar, the DTSC will be provided as follows: General comments which are common to all will be provided first, followed by comments which are site specific, followed by the Regional Water Quality Control Boards comments. Comments are provided by the Geologic Services Unit, Office of the Scientific Affairs, Public Participation and other Office of Military Facilities.

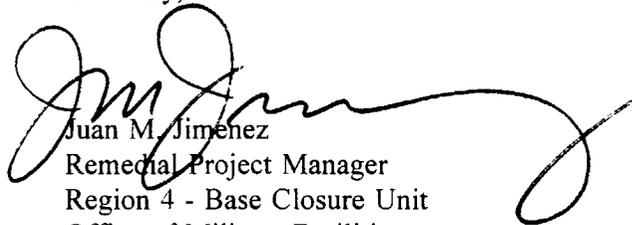
The DTSC will be available for a comment resolution meeting(s) either in person or via a telephone conference as necessary.



Mr. Joseph Joyce  
August 2, 1995  
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We look forward to working with you on these and other issues. Feel free to contact me at (310) 590-4919.

Sincerely,



Juan M. Jimenez  
Remedial Project Manager  
Region 4 - Base Closure Unit  
Office of Military Facilities

Enclosures

cc: Ms. Bonnie Arthur  
U. S. Environmental Protection Agency  
Region IX  
Hazardous Waste Management Division, H-9-2  
75 Hawthorne Street  
San Francisco, California 94105-3901

Mr. Lawrence Vitale  
Remedial Project Manager  
California Regional Water Quality Control Board  
Santa Ana Region  
2010 Iowa Avenue, Suite 100  
Riverside, California 92507-2409

Mr. Jason Ashman  
Department of the Navy  
Naval Facilities Engineering Command  
Environmental Division  
1220 Pacific Highway, Room 18  
San Diego, California 92132-5181

Mr. David Cowser  
Bechtel National, Inc.  
401 W. "A" Street, Suite 1000  
San Diego, California 92101-7905

Mr. Vish Parprianni  
Environmental and Safety  
Marine Corps Air Station-El Toro  
P. O. Box 95001  
Santa Ana, California 92709

Mr. Joseph Joyce

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bcc: Ms. Greg Holmes  
State Project Team Leader  
Base Closure Unit  
Office of Military Facilities

Ms. Sherrill Beard, R.G.  
Geologist  
Base Closure Unit  
Office of Military Facilities

Ms. Marcia Murphy  
Public Participation  
245 West Broadway, Suite 425  
Long Beach, California 90802

Mr. Ronald Okuda  
Reuse Specialist  
245 West Broadway, Suite 425  
Long Beach, California 90802

## GENERAL COMMENTS FOR MOST EE/CAS

1. Section 1, Introduction

Please note that DTSC and the RWQCB are both part of Cal/EPA.

2. It was agreed at a Base Closure Team meeting and in the body of the report that if the contamination exceeded the depth of ten feet, with the exception of site 19, then the unit would revert back to the Remedial Investigation/ Feasibility Study. The following concerns arise as a result: an opening in the ground ten feet deep poses obvious physical hazards. In addition, there is the possibility over time of a rain event. How will these be addressed? What are the contingencies?

3. Since an agreement was reached by the Base Closure Team (BCT) to use Preliminary Remediation Goals (PRGs) instead of risk-based concentrations (RBCs), please replace all references to RBCs with the most current EPA Region IX PRGs. Changes will be necessary throughout the document. The revision from the Draft EE/CA to the final EE/CA should take into account the current land use of the site, the future reuse potential and the reason which support for going forth to one of the three options: a) an Action Memorandum, b) more investigation via the RI/FS or c) no further action at this time.

4. Background Concentration Values

Some of the listed background concentrations are quite high. For example, arsenic is shown at 37,610 ug/kg, while the upper range of background for Orange County soils is typically from 10,000 to 15,000 ug/kg. To develop a more precise estimate of ambient conditions, the Geologic Services Unit (GSU) recommends that the Marines consider expanding the data set used to calculate background soils concentrations. The small sample size used to determine these background concentrations is of particular concern because these values will be used as a standard against which the confirmation samples will be compared. The confirmation samples will determine whether enough soil has been excavated. By increasing the database from which background is calculated by inclusion of data from other locations, the uncertainty of the estimates will decrease. You may include data from other investigations where it can be demonstrated that there was no apparent contamination. This concept has been used successfully by the Marines/Navy at both MCGACC Twenty Nine Palms and Naval Station Long Beach.

5. Regarding confirmation samples, a methodology should be presented for determining the number and locations of samples. Will samples be taken according to a grid-based random sampling method or will they be judgmental based on visible staining, or how will they be taken? Please provide a detailed outline describing the strategy for confirmation sampling. Such a strategy should include but not be limited to: minimum number of samples, how the samples will be taken, clearly stated criteria and the standard operating procedures which will be used.

6. In future submittals please report soil concentration values in mg/kg. In addition, please be consistent throughout the Final EE/CA regarding the units for soil. The use of both "tons" and "cubic yards" is very confusing. GSU prefers cubic yards.

7. Due to the repetitive nature of these documents some of the General Comments will be repeated in EE/CA specific comments for ease of location and response by the Navy.
8. Method 8310 should be used for Polycyclic Aromatic Hydrocarbons (PAHs) unless the calculated ambient background values indicate that Method 8270 Detection limits are appropriate.
9. Please define the term “distributables” and support its inclusion in the cost analysis.
10. ARARS Appendix

Section 300.400(g)(2) of the National Contingency Plan (NCP) states that a state requirement must be a state standard, not a state law. In addition, if several RCRA requirements are relevant and appropriate, how will this affect the handling of the excavated soil? Finally, approval of the MCAS El Toro EE/CAs by DTSC does not constitute or imply an actual agreement with the Navy’s/Marine Corps interpretation of the narrative state requirements of the Basin Plan or SWRCB Resolution 68-16, or technological and economic feasibility under 22 CCR 66264.94.

11. The DTSC does not agree that enough characterization has been performed at this time. As a result, it is not possible to determine whether or not the groundwater below the proposed EE/CA sites has been impacted. The DTSC requests that such opinions be removed from the Final EE/CAs unless they are supported by data.
12. For those proposed removal actions which have lead as a chemical of potential concern, please enhance the discussion for the use of a 130 g/kg cleanup level for the 0 to 2 foot level and 400 mg/kg for the 2 to 10 foot interval. In addition, there is an erroneous statement that the Preliminary Endangerment Assessment (PEA) Guidance Manual levels are enforced as cleanup levels by the DTSC. These PEA levels are intended for use during a site inspection to decide whether or not further action is necessary. This further action can take the form of one of three options: 1) No Further Action , 2) Expedited Removal Action or 3) Full Remedial Investigation / Feasibility Study, etc. They were not created for use as clean up criteria. Clean up numbers are a function of the risk management decision which includes risk assessment, public input, regulator input, cost, technical feasibility, etc.

Please modify this statement wherever it appears or delete it.

13. The DTSC recognizes the Navy/Marine Corps intent in maximizing the reuse potential of these sites. Please also evaluate the industrial scenario when the PRGs replace the RBCs.
14. Appendix

Section 300.400(g)(2) of the NCP says a state requirement must be a state *standard*. It is not required to be a state law.

15. Appendix

It is stated that several RCRA requirements maybe relevant and appropriate. If so, how will this affect the handling of the excavated soil?

16. Appendix

Approval of MCAS El Toro EE/CAs by DTSC will not indicate agreement with the DON's interpretation of the narrative state requirements of the Basin Plan or SWRCB Resolution 68-16, or technological and economic feasibility under 22 CCR 66264.94.

17. Paragraph beginning "No chemicals exceeded the TTLC regulatory values."

The meaning of this paragraph is unclear. It appears that DON is proposing to average the concentrations of cadmium, chromium and lead found in soil samples at these sites and, if the average concentrations are below the regulatory threshold for hazardous waste and less than ten times the STLC values, declare the soil non-hazardous. If this is the proposed method for determining whether the soil is hazardous, it is incorrect. Title 22 CCR, Chapter 11, section 66261.20 requires that sampling for waste classification be done in accord with SW-846 (see Volume II Field Manual section 9.1). While SW-846 does not provide a method for sampling soil in-situ, in the past DTSC has allowed soil to be classified in-situ for waste classification purposes, *provided* that the vertical and lateral extent of the contamination has been determined. If so, and the volume can be reasonably estimated, then the 80 percent upper confidence level (two-tailed) of the sample distribution may be compared to the regulatory threshold for hazardous waste determination. If the 80 percent upper confidence level is less than the regulatory threshold, then the soil can be declared non-hazardous. If the vertical and lateral extent of contamination cannot be delineated, the soil cannot be classified as hazardous or non-hazardous in-situ and will have to be excavated in order to be classified. Therefore, unless the soil can be properly classified in-situ as non-hazardous, the hazardous waste management requirements of 22 CCR Division 4.5 should be considered ARARs.

18. Summary,

The statement "Soil Concentrations of lead exceeded the Preliminary Endangerment Assessment Guidance Manual screening level enforced by the Department of Toxic Substances Control."

The DTSC PEA manual does not have enforceable lead levels. The levels are screening criteria which can be used during a Preliminary Endangerment Assessment to determine whether or not a particular site needs further action or no action. Please replace the term "enforced" with some other appropriate term or delete the statement all together.

19. The DTSC does not believe that the vertical or lateral extent of contamination is defined. This is stated again and again in the iterative nature of the proposed removals: basically the soils will be excavated, samples taken and analyzed, results compared, then if the criteria are met the excavation stops, if not it continues. This is due to the lack of vertical and horizontal extent.

20. Introduction,

See the attached public participation comments.

21. Statement which states "Due to the *timely* nature of the bioremediation process..."

Shouldn't this be *time consuming*?

**DRAFT ENGINEERING EVALUATION/COST ANALYSIS  
SITE 4  
MARINE CORPS AIR STATION EL TORO, CALIFORNIA**

1. Section 4.1, paragraph beginning "The excavated soil will be loaded onto trucks..."

Describe how plastic sheeting will be secured to avoid blowing away or tearing.

2. Section 4.1, fifth paragraph from end "The thermal desorption unit can process soil with a maximum moisture content of 15 percent by weight, which is not expected."

Please note that in section 2.1.3 it states that the soil "...tends to absorb and hold water." This may create a moisture content above 15 percent during rainy periods, limiting the operation of the thermal desorber.

3. Section 4.1.3, fourth paragraph "The extent of excavation on a field screening level will be determined by submitting one sample per 25 cubic yards..."

Please explain how these samples will be taken.

4. Section 4.1.3, sixth paragraph "One sample per 100 tons of treated soil will be collected and submitted for analysis." and "One sample for every 500 cubic yards will be submitted for low-detection PAH analysis."

Using this method, an insufficient number of samples may be taken. For example, the estimated quantity of treated soil is for Site 20 is only 60 cubic yards, and for Site 4 it is 105. Using the proposed method, no samples would be taken at Site 20. For Site 4, no samples would be submitted for low detection-limit PAH analysis. A minimum number of treated soil samples per unit should be proposed to provide an adequate confidence level.

6. Section 5.3, paragraph beginning "Alternative 1 becomes more economically attractive..."

It is stated that costs could be further reduced if treated soil is used for backfilling. Would this reduction in costs be significant? If so, the cost reduction should be included in Table 5-2. Additionally, the cost comparison (two paragraphs below) for Site 4 shows the cost per cubic yard, while the comparison for Site 20 does not. Since the overall cost is the basis for comparison, the cost per cubic yard is probably not necessary here.

Comments Specific to Site 4

1. Table 2-1

Arsenic concentrations up to 7,500 ug/kg exceed the PRG of 320 ug/kg for a residential scenario. Beryllium concentrations up to 1,000 ug/kg exceed the PRG of 140 ug/kg for a residential scenario. Chromium concentrations up to 85,000 ug/kg exceed the Cal modified PRG of 200 ug/kg for hexavalent chromium. Was chromium speciated? DTSC's PEA guidance states that in the absence of speciation, it should be considered hexavalent chromium. Will site 4 soil be removed to residential PRG levels for arsenic, beryllium and chromium?

2. Page 4-2, third paragraph, last sentence

Is lead-contaminated soil contained within the TFH-diesel concentration contours shown in figures 2-3 and 2-4? If so, please so state. If not, please show lead contamination contours or some indication of lead hot spot locations. These figures may need revision based on COPCs exceeding PRGs.

3. Page 4-17, section 4.3.3, fourth paragraph

Please list estimated treatment cost per cubic yard.

***DRAFT ENGINEERING EVALUATION/COST ANALYSIS  
SITE 7  
MARINE CORPS AIR STATION EL TORO, CALIFORNIA***

1. Summary, Paragraph 5

See General Comment on statements which imply that the extent of contamination, both laterally and vertically is well known for these sites. This contradicts the stated position of going no more than ten (10) feet and if the contamination extends beyond that limit the site will be placed back into the Remedial Investigation under CLEAN II (Bechtel).

2. Figure 2-3

Please include the range of potential chemicals of concern (PCOC) detected on the figure.

3. Site Characterization, Page 2-7, Paragraph 1

This paragraph is contradictory. It mentions that solid waste management unit 71 (SWMU 71) will NOT be evaluated in this EE/CA, however later on in the same paragraph it states that if it is determined to be appropriate, the response action for SWMU 71 will be included in the Action Memorandum for Site 7.

What agency determines if it is appropriate to take action at SWMU 71 within the Action Memorandum? When will analytical data be available to perform an EE/CA for this site? How and when will the public participation requirements be dealt with?

4. Page 2-12, Site Characterization, Paragraphs 3 and 4.

The statement “ However, most of the PAH data are inconclusive as to whether the actual concentrations exceeded the RBC’s” needs more supporting information.

Please bring up paragraph 4 from page 2-12 and attach it following this sentence to clarify the paragraph..

5. Table 2-2

The TRPH level in table 2-2 is not an RBC as the footnote states. Please delete it from the table since it is not applicable and could be misinterpreted.

6. Page 3-2, Identification of Removal Action Objectives, Paragraph 1

What are the criteria for determining whether the treated soils will be disposed of or reused?

7. Page 3-3, Determination of Removal Schedule, Paragraph 4.

Please provide a detailed schedule as soon as it is available.

***DRAFT ENGINEERING EVALUATION/COST ANALYSIS  
SITE 11  
MARINE CORPS AIR STATION EL TORO, CALIFORNIA***

1. Page I, Summary, Paragraph 4

“This EE/CA uses a cleanup concentration of 0.040 ug/kg in soil for PCB-1260.”

This level is very low - below the instrument detection limit (IDL). This level should be reconsidered in light of the use of PRGs and the sites proximity to the air-field. The use of a cleanup criteria to both residential and industrial scenarios should be evaluated and presented to all parties for consideration.

2. Page 1-1, Introduction, Paragraph 5

“Following BCT and public reviews of the EE/CA document, the DON *will* prepare an Action Memorandum, based on the approved EE/CA, providing a written record of decision for selecting an appropriate removal action.”

This statement presumes that a Removal Action will take place. The removal must first be justified and the parties should concur prior to the preparation of any Action Memorandums.

3. Page 3-2, Identification of Removal Action Objectives, Paragraph 1

Please describe the criteria which will be used to determine whether the soil will be treated or disposed.

4. Page 3-2, Identification of Removal Action Objectives, Paragraph 4

“The results of confirmation sampling for analytes other than the identified COPCs are for documentation purposes only.”

This statement is rather odd. Ultimately the final remedy has to be protective of human and ecological health. In the event that other COPCs are “found or discovered” does the Navy/Marine Corps propose that it be ignored? The DTSC is certain that this is an oversight. The Navy/Marine Corps will address any new COPCs which may pose an unacceptable risk to human and ecological receptors. (This contradicts paragraph 5.)

5. Some comments only apply to some sites and not others. The Navy/Marine Corps should address comments which are not expressly written down in the DTSC comments but which it makes sense to correct in other EE/CAs.

7. Page 3-2, Identification of Removal Action Objectives, Paragraph 6

“This soil will be disposed or reused on the Station”

Statements which have options, such as this one, should be clarified in the following manner: provide criteria so that any reviewer or field person can follow the logical decision process on their own. For example, in the sentence above put in the criteria which will be used to determine whether it will a) be disposed of or b) reused on the Station. This should be done for all unsupported statements which imply more than one option is available for all EE/CAs.

8. Page 3-3, Identification of Removal Action Objectives, Paragraph 2

DTSC looks forward to receiving the anticipated Action Memoranda. Where appropriate, please put in enough details for meaningful regulator and public participation in this cleanup process.

9. Page 4-7, Identification and Analysis of Removal Action Alternatives, Paragraph 2

“The level of accuracy for the cost estimates is plus 50 or minus 30 percent for each removal action alternative.”

This seems an excessive amount of inaccuracy for such a common activity. Please include the reasons for such a large spread in the cost estimates.

***DRAFT ENGINEERING EVALUATION/COST ANALYSIS  
SITE 13  
MARINE CORPS AIR STATION EL TORO, CALIFORNIA***

1. Section 2.3, Table 2-1

In future submittals please report concentration values for soils in mg/kg.

2. Section 3.2

Regarding confirmation samples, a methodology should be presented for determining number and locations of samples. Will samples be taken according to a grid-based random sampling method or will they be judgmental? If judgmental what criteria will be used? Provide a detailed outline describing the strategy for confirmation sampling.

3. Section 4.1, "The excavated soil will be loaded onto trucks..."

Describe how plastic sheeting will be secured to avoid blowing away or tearing.

4. Section 4.1, "The thermal desorption unit can process soil with a maximum moisture content of 15 percent by weight, which is not expected."

Please note that in section 2.1.3 it states that the soil "...tends to absorb and hold water." This may create a moisture content above 15 percent during rainy periods, limiting the operation of the thermal desorber. Provide a contingency plan.

5. Section 4.1

Please state in this section that Site 3, the Original Landfill, will be used to stage the excavated soil for the treatment unit.

6. Section 4.1

Provide the definition of "periodically" in reference to sampling treated soil. Specify a frequency and tentative total number of samples that will be collected and analyzed from the treated soil.

7. Section 4.1.3 "The extent of excavation on a field screening level will be determined by submitting one sample per 25 cubic yards..."

Please explain how these samples will be taken. Provide a sampling strategy.

8. Section 4.1.3

What is the maximum time an excavation will remain open and is there a contingency plan if it rains?

9. Section 4.1.3 "One sample per 100 tons of treated soil will be collected and submitted for analysis." and "One sample for every 500 cubic yards will be submitted for low-detection PAH analysis."

Using this method, an insufficient number of samples will be taken. For example, the estimated quantity of treated soil is for Site 20 is only 60 cubic yards, and for Site 4 it is 105. Using the proposed method, no samples would be taken at Site 20. For Site 4, no samples would be submitted for low detection-limit PAH analysis. A minimum number of treated soil samples per unit should be proposed.

10. Section 5.3 "Alternative 1 becomes more economically attractive..."

It is stated that costs could be further reduced if treated soil is used for backfilling. Would this reduction in costs be significant? If so, the cost reduction should be included in Table 5-2.

### **SPECIFIC COMMENTS**

11. Section 2.1.3, paragraph 4

Please provide the approximate groundwater flow direction.

12. Section 2.3, Table 2-1

Chromium concentrations exceed the PRG of 200 ug/kg for hexavalent chromium ("CAL-Modified PRG" PEA, 1994). It has become common practice to assume all chromium is hexavalent chromium when conducting a health risk assessment if speciated data is not available. Therefore, it is beneficial and eventually cost-effective to have all future soil samples speciated for chromium at areas where chromium may be of concern.

13. Section 4.3.3, page 4-17, fourth paragraph

Please list estimated treatment cost per cubic yard.

### **COMMENTS SPECIFIC TO SITE 13**

14. Section 2.3, Table 2-1

The background concentration for selenium is missing, please provide this value.

Please change the column heading "Detected Concentration Range" to "Detected Concentration Range at Site 13".

15. Page 2-5, Figure 2-3

There are two buildings on this figure marked 242. The building to the southwest of Site 13 is correctly identified. The building to the northwest is labeled incorrectly. It is unclear from the figure, but it appears the mis-identified building is probably Building 26.

16. Section 3.4.2, page 3-5

It is stated in this section that Units 1 and 2 of Site 13 are not sources of groundwater contamination. However, the vertical extent of contamination has not been characterized. Any statement of this nature within the *Draft EE/CA* should reflect this uncertainty.

17. Section 3.5, page 3-6, bullet item two

The objective should be to *prevent* human and ecological exposure to soils that present a risk, not just control it.

18. Section 3.5, third paragraph after bullet list

Refer to comment number 17.

19. Page 3-6, last paragraph

Comment number 18 also applies to this paragraph.

20. Section 4.1, page 4-3, first complete paragraph

Please provide more details with regard to "field analytical data". Does "field analytical data" refer to on-site field analytical screening kits? Please clarify the methodologies used to collect field analytical data.

**DRAFT ENGINEERING EVALUATION/COST ANALYSIS  
SITE 14  
MARINE CORPS AIR STATION EL TORO, CALIFORNIA**

1. Summary

It was agreed that if cleanup goals could not be achieved after reaching a depth of ten feet then the unit would revert back to the RI/FS program. In the event that this does occur, how will the excavation be addressed? Will it be backfilled with clean soil or untreated soil?

Additionally, please define the maximum lateral extent on an excavation before the site reverts to the RI/FS program.

2. Section 4.1

Please be consistent throughout the *Draft EE/CA* regarding the units for soil. Some areas of the document discuss soil using "tons" and other areas use "cubic yards". GSU prefers cubic yards.

3. Section 4.1, "The excavated soil will be loaded onto trucks..."

Describe how plastic sheeting will be secured to avoid blowing away or tearing.

4. Section 4.1, "The thermal desorption unit can process soil with a maximum moisture content of 15 percent by weight, which is not expected."

Please note that in section 2.1.3 it states that the soil "...tends to absorb and hold water." This may create a moisture content above 15 percent during rainy periods, limiting the operation of the thermal desorber. Provide a contingency plan.

5. Section 4.1

Please state in this section that Site 3, the Original Landfill, will be used to stage the excavated soil for the treatment unit.

6. Section 4.1

Provide the definition of "periodically" in reference to sampling treated soil. Specify a frequency and tentative total number of samples that will be collected and analyzed from the treated soil.

7. Section 4.1.3 "The extent of excavation on a field screening level will be determined by submitting one sample per 25 cubic yards..."

Please explain how these samples will be taken. Provide a sampling strategy.

Section 4.1.3 "One sample per 100 tons of treated soil will be collected and submitted for analysis." and "One sample for every 500 cubic yards will be submitted for low-detection PAH analysis."

Using this method, an insufficient number of samples will be taken. For example, the estimated quantity of treated soil is for Site 20 is only 60 cubic yards, and for Site 4 it is 105. Using the proposed method, no samples would be taken at Site 20. For Site 4, no samples would be submitted for low detection-limit PAH analysis. A minimum number of treated soil samples per unit should be proposed.

8. Section 5.3 "Alternative 1 becomes more economically attractive..."

It is stated that costs could be further reduced if treated soil is used for backfilling. Would this reduction in costs be significant? If so, the cost reduction should be included in Table 5-2.

#### **SPECIFIC COMMENTS**

9. Section 2.1.3, paragraph 4

Please provide the approximate groundwater flow direction.

10. Section 2.3, third paragraph

Include an explanation within the text as to why "...most of the PAHs data are inconclusive as to whether or not the actual concentrations in the samples exceeded the RBCs". It should be stated in the text that the reason conclusions cannot be made is because the analytical method used for PAHs such as benzo(a)pyrene did not have detection limits low enough to compare to the RBCs or the PRGs.

11. Section 2.3, Table 2-1

Chromium concentrations exceed the PRG of 200 ug/kg for hexavalent chromium ("CAL-Modified PRG" PEA, 1994). It has become common practice to assume all chromium is hexavalent chromium when conducting a health risk assessment if speciated data is not available. Therefore, it is beneficial and eventually cost-effective to have all future soil samples speciated for chromium at areas where chromium may be of concern.

12. Section 4.3.3, page 4-17, fourth paragraph

Please list estimated treatment cost per cubic yard.

**COMMENTS SPECIFIC TO SITE 14**

13. Section 2.3 and Figure 2-3

Please show the direction of groundwater flow discussed in Section 2.3 on Figure 2-3.

14. Figure 2-4

Show the results of constituents listed in Table 2-1 with concentration greater than PRGs.

15. Section 4.1.3, **Site 13 and Site 14**

Please reconcile the discrepancy of the two statements below. The first statement (a) is from the Site 13 Draft EE/CA and the second statement (b) is from the Site 14 Draft EE/CA.

- a. "The confidence level of total costs is plus or minus 25 percent."

In Table 4-1 the contingency for the "Cost of Alternative 1" is 20 percent, yet in the statement above, "The confidence level of..., the contingency is plus or minus 25 percent." Please reconcile this discrepancy.

- b. "The level of accuracy for the cost estimates is plus 50 or minus 30 percent for each removal action alternative."

In Table 4-1 the contingency for the "Cost of Alternative 1" is 20 percent yet in the statement above, "The level of...", the contingency is plus 50 or minus 30 percent. Please reconcile this discrepancy.

16. Figure 2-3 and 2-4

Are the boundary lines shown on these figures, which are described as extent of a constituent also the tentative boundaries of the excavation? If so, please state the tentative boundaries of the excavation clearly on the figures.

17. The following comment is from DTSC's comments for the CLEAN I Phase II workplan:

"This section states (A14.1.1 Setting and History) that "In a 1970 aerial photograph, and unidentified liquid appears to have ponded around Building 243, located north of the site, and flowed past the western portion of the site." Could this have been a likely disposal area? The current Site 14 is located behind the former heavy equipment maintenance shop. The shop doors are located on the Building 243 side of Building 245. Is it likely that outside the shop doors, perhaps in an unpaved area towards Building 243? Or is it possible that surface runoff from Building 245 drained towards Building 243? Please note that the SAIC Report identified a possible stain on the northwesterly side of Building 243 (see site 481 in the SAIC Report)."

The response in the Navy Response Summary was as follows: "A removal action is proposed for this site. However, the Revised Draft Work Plan does include sampling of both units if the removal action is considered not an appropriate response action."

Since the BCT has agreed that Site 14 is now classified as a removal action, the *Draft EE/CA* should address this comment.

18. Please refer to and address Comment number 2, A14.4.2 SAIC Survey of DTSC's comments on the CLEAN I Phase II workplan in the *Draft EE/CA*.

***DRAFT ENGINEERING EVALUATION/COST ANALYSIS  
SITE 19  
MARINE CORPS AIR STATION EL TORO, CALIFORNIA***

1. See the comments from site 11 which also apply here. (PCBs)

2. Page ii, Summary, Paragraph 1

The proposed cleanup level of 0.040 mg/kg should be reevaluated for the reasons stated in the comments for EE/CA 11.

3. Page 1-2, Introduction, Paragraph 1

"Following BCT and public reviews, the DON *will* prepare an Action Memorandum, based on the approved EE/CA, providing a written record of decision for selecting an appropriate removal action."

This statement presumes that a Removal Action will take place. The removal must first be justified and the parties should concur prior to the preparation of any Action Memorandums.

4. Page 2-15, Site Characterization, Paragraph 1.

“The estimated volume of soil to be removed is 420 cubic yards.”

What is the basis for the estimated volume to be 420 cubic yards? The text states that 229 cubic yards of PCB contaminated soils of levels up to 20,000 ug/kg was stored in this opening. Please clarify the discrepancy. In addition, how will potential TPH problems be dealt with if they are found by the confirmation samples?

***DRAFT ENGINEERING EVALUATION/COST ANALYSIS  
SITE 20  
MARINE CORPS AIR STATION EL TORO, CALIFORNIA***

1. Page iii is missing
2. Page 2-1, section 2.1.2, first paragraph, last sentence

What types of solvents were used here in the past and what types are used now?

3. Page 2-8, section 2.3, first paragraph

Not much information is provided on the UST described here. Was it ever integrity tested? Has it leaked? Unless the UST is scheduled to be removed (which is not indicated in this EE/CA), soil beneath the UST should be tested.

4. Page 3-6, section 3.5, bullet item two

The objective should be to *prevent* human exposure to soils that present a risk, not just control it.

5. Page 3-7, top paragraph

The above comment also applies to this paragraph.

6. Page 4-7, second paragraph, second sentence

It is unclear what “controlling surface waters from infiltration” means. Please clarify.

7. Page 4-13, second paragraph, first sentence

Should read 2,000 square feet, not 200.

8. Page 4-13, second paragraph, last sentence

The estimated total on-site treatment area of 25,000 square feet for soil from all the removal sites is inconsistent with the 40,000 square feet estimated in the same section of the draft EE/CA for Site 4.

**DEPARTMENT OF TOXIC SUBSTANCES CONTROL**

301 Capitol Mall, 2nd Floor  
Sacramento, CA 95814  
P. O. Box 806  
Sacramento, CA 95812-0806  
Voice: (916) 327-2491  
Fax: (916) 327-2509

**MEMORANDUM**

**TO:** Juan Jimenez  
Office of Military Facilities (OMF)  
Region 4, Long Beach

**FROM:** John P. Christopher, Ph.D., D.A.B.T.  
Staff Toxicologist  
Office of Scientific Affairs (OSA)  
Human and Ecological Risk Section (HERS)

**DATE:** 30 June 1995

**SUBJECT:** MCAS El Toro: Engineering Evaluation and Cost Analyses for Sites 4, 7, 11,  
13, 14, 19, and 20  
Outcome: 02      PCA: 14740      Site: 400055-45

A handwritten signature in black ink, appearing to read "John P. Christopher".

**Background**

Marine Corps Air Station (MCAS) El Toro is an active military facility in Orange County which is scheduled for closure. Remedial activities at this base are being directed by Naval Facilities Engineering Command, Southwest Division (SWDIV). The Navy has chosen to undertake several removal actions at the base, each of which is described in an Engineering Evaluation and Cost Analysis (EECA). Seven such EECAs were examined, all written in similar format. The comments below apply to all seven documents equally.

**Documents Reviewed**

We received a request from Region 4 OMF to review the following seven documents, all prepared by Bechtel National Inc., contractors to SWDIV:

1. "Draft Engineering and Cost Analysis, Site 4, MCAS El Toro, California", dated 25 April 1995;
2. "Draft Engineering and Cost Analysis, Unit 1 of Site 7, MCAS El Toro, California", dated 23 May 1995;

3. "Draft Engineering and Cost Analysis, Site 11, MCAS El Toro, California", dated 24 May 1995;
4. "Draft Engineering and Cost Analysis, Site 13, MCAS El Toro, California", dated 20 April 1995;
5. "Draft Engineering and Cost Analysis, Unit 1 of Site 14, MCAS El Toro, California", dated 23 May 1995;
6. "Draft Engineering and Cost Analysis, Unit 2 of Site 19, MCAS El Toro, California", dated 31 May 1995; and
7. "Draft Engineering and Cost Analysis, Units 2 and 3 of Site 20, MCAS El Toro, California", dated 23 May 1995;

### **Scope of Review**

The document was reviewed for scientific content. Minor grammatical or typographical errors that do not affect the interpretation have not been noted. However, these should be corrected in the final version of the document. We assume that sampling of environmental media, analytical chemistry data, and quality assurance procedures have been examined by regional personnel. If inadequacies in this regard for the purposes of risk assessment were encountered, they are noted. Any future changes or additions to the document should be clearly identified.

### **General Comment**

We have just one set of comments which applies to all seven EECAs. Estimates of the 99th quantile of ambient concentrations of metals in shallow soils are based on too small a sample size. We recommend that the database for these estimates be expanded to decrease the uncertainty of the estimates. We believe this can be done by applying familiar statistical methods to data the Navy has already collected.

### **Specific Comments**

1. **Origin and Intended Use of the "Background" Data for MCAS El Toro:** As data quality objectives (DQOs) were identified for MCAS El Toro during 1992 and 1993, concentrations of metals at sites on the base were compared to parametric estimates of the 99th quantile of the distribution of the concentrations of metals in eleven samples of surface soil. The list of these 99th quantiles, shown in Table 2-1 of all seven EECAs, originally appeared in: "Marine Corps Air Station El Toro, El Toro, California, Installation Restoration Program, Phase II Remedial Investigation/

Feasibility Study, Draft Work Plan, 9 November 1993". Appendix A to this work plan contains an "Introduction to Data Quality Objectives". In Section A.6.3.1 of this appendix (pp. 18 ff.), a description is given of how twenty-one background samples were collected of which eleven were selected to represent ambient conditions for the base and how 99th quantiles of lognormal distributions of these metals were estimated. The estimates are summarized in Table A2a of this draft Work Plan. The DQO process was integral to the development of the Phase II Work Plan for the RI/FS; however, the list of 99th quantiles of background distributions was never used, because it was decided to analyze for metals at all sites during Phase II.

These eleven sets of values do not constitute an adequate basis for defining the upper tail of the distributions of ambient concentrations of metals, because the sample size is too small. The 99th quantile was calculated as the mean plus the  $t$ -statistic times the standard deviation. Because both the  $t$ -statistic and the standard deviation become larger as the sample population gets smaller, the use of small sample sizes inflates estimates of the 99th quantile.

- 2. Techniques Used at Other Navy Bases:** Better estimation of the upper quantiles is possible without collecting and analyzing new samples from the field, as SWDIV has demonstrated at Marine Corps Air Ground Combat Center (MCGACC) Twentynine Palms and at Naval Station Long Beach. In both these cases, the Navy used data from soil samples already analyzed to expand the sample population for estimating ambient conditions. Plots of log concentrations vs. cumulative probability were then used for estimation of upper quantiles of ambient distributions.

At MCGACC Twentynine Palms many borings were advanced in areas which were thought possibly contaminated with petroleum products but for which analyses for total petroleum hydrocarbons proved negative. These same samples were also analyzed for metals. Thus, many data were available from areas which were apparently uncontaminated. Analysis of plots of the common logarithm of concentration vs. cumulative probability supported the presumption of lack of contamination. These data were then used to expand the sample population contributing to estimates of the 99th quantile of ambient concentrations from the original six designated background samples to over 200.

At Naval Station Long Beach the problem was somewhat different but the solution was similar. This base is located on Terminal Island in an industrial area where nearly all surface soil is hydraulic fill, thus making estimation of background conditions problematic. The Navy assembled all the data on analysis for metals in surface soils from the Site Inspection Report. The log-probability plots were then re-run, and the lowest mode of multimodal populations was identified graphically. This lowest mode was then defined as the background condition for the base and its

upper quantiles were estimated. "Background" could be identified with this technique, even in the presence of contamination. At Naval Station Long Beach, the population of background samples was increased from zero to over 180.

3. **Intended Use of Background Data in These EECAs:** Lastly, we wish to emphasize that the estimates of 99th quantiles in Table 2-1 of the report currently under review will serve as cleanup criteria for several metals. It is incumbent upon the Navy to define such criteria in the most reliable way, i.e. using all available data. Defining the extreme tail of a distribution is a highly uncertain undertaking with just eleven values. We have outlined above methods the Navy has used on other bases to decrease the uncertainty of such measurements. We believe the Navy should make a similar effort at MCAS El Toro.

### Conclusions and Recommendations

The estimates of the 99th quantile of distributions of concentrations of metals are unacceptably crude and uncertain, owing to the small sample size employed. We recommend that the Navy expand the data set for calculating such quantiles by using analyses from on-base locations which are apparently uncontaminated. Statistical procedures are readily available and have been used by the Navy elsewhere to help verify that such an expanded data set does indeed represent uncontaminated soils.

Reviewer: Michael J. Wade, Ph.D., D.A.B.T.  
Senior Toxicologist, HERS

*Brian K. Davis*  
*for MJW*

cc: Jeff Paull, USEPA Region IX

## DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Region 4

West Broadway, Suite 425  
Beach, CA 90802-4444

## MEMORANDUM

**To:** Juan Jimenez  
Remedial Project Manager  
Region 4, Base Closure Unit  
Office of Military Facilities

**From:** Marsha Mingay  
Public Participation Specialist 

**Date:** 28 June 95

**SUBJECT:** Draft Engineering Evaluation/Cost Analysis for Unit 2 and 3 of Site 20; Site 11; Unit 2 of Site 19; Site 4; Unit 1 of Site 14; and Site 13 at MCAS El Toro, California

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I have completed my review of the Draft Engineering Evaluation/Cost Analysis (EE/CA) for stated subject sites located at MCAS El Toro, California.

Although the EE/CAs mention some of EPA's requirements for public participation, we are concerned that:

1. it is not a complete listing of all public participation requirements, and
2. the mandated public participation activities are not treated as an integral part of the EE/CA document.

To address the above concerns, we suggest that a Public Participation Section be included in the document. This section would then list the required activities and provide a brief statement of how they will be satisfied. To help clarify our position, Attachment A is given to you as a guide for you to review.



## ATTACHMENT A

### Section (#) PUBLIC PARTICIPATION REQUIREMENT

This EE/CA is being issued in accordance with the Community Relations Plan prepared by MCAS El Toro pursuant to applicable federal laws (National Contingency Plan (NCP) and Superfund Amendment Reauthorization Act (SARA)) requiring specific public participation activities to be carried out in concert with technical activities.

Pursuant to the above, the required public participation activities are outlined in the following matrix along with the specific site activities that MCAS El Toro will conduct to satisfy them.

| SITE REQUIREMENT  | SITE ACTIVITY  | REQUIREMENT SOURCE         |
|---|--|----------------------------|
| Spokesperson must be identified and announced   | MCAS El Toro has identified (name of person) as the spokesperson. If you have questions, or comments, please contact (him/her) at (telephone number and address) | NCP 300.415(m)1            |
| Administrative Record must be established at:<br>- a central location, and<br>- at or near the site   | The EE/CA will be added to the existing Administrative Record located at (list addresses)  | NCP 300.820<br>SARA 113(k) |
| Community Relation Plan must be finalized and on hand prior to completion of the EE/CA  | A revised and finalized Community Relations Plan is on file at (list location).  | NCP 300.415(m)(4)(i)       |
| Information Repository must be established once the EE/CA approval memo is signed   | The EE/CA will be added to the existing information repository located at (list address).  | NCP 300.415(m)(4)(i)       |
| Notice of Availability and a brief description of the EE/CA is placed in a major local newspaper of general circulation                             | A display ad in the local reading section of (list newspapers) will be used to provide the interested public Notice of Availability.                             | NCP 300.415(m)(4)(ii)      |
| 30 day public comment period is initiated upon completion of the EE/CA. The comment period can be extended by at least 15 days upon timely request. | A display ad in the local reading section of (list newspapers) will be used to provide notification of the 30 day public comment period.                         | NCP 300.415(m)(4)(iii)     |
| Written response to significant comments must be prepared and made available to the public via the information repository.                          | MCAS El Toro will provide written responses to all written comments received. These responses will be added to the Information Repository at (library name).     | NCP 300.415(m)(4)(iv)      |

# Memorandum

**To:** Mr. Juan M. Jimenez **Date:** June 27, 1995  
Department of Toxic Substances Control  
245 West Broadway, Suite 350  
Long Beach, CA 90802-4444

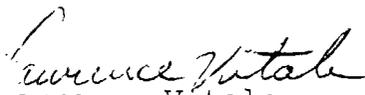
**From:** CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD - SANTA ANA REGION  
2010 IOWA AVENUE, SUITE 100, RIVERSIDE, CALIFORNIA 92507-2409  
Telephone: CALNET 632-4130 Public (909) 782-4130

**Subject:** Draft Engineering/Cost Analysis (EE/CA) For Sites, 4, 7, 11,  
13, 14, Unit 2 of 19, and Site 20 For Marine Corps Air Station  
El Toro

We have reviewed the subject documents dated April and May 1995 and received by us on June 1, and June 7, 1995 respectively. The EE/CA deal with soil contamination sites and proposed removal actions for remediation of those sites. The remedial actions include thermal desorption for the petroleum contaminated soils and excavation and offsite landfill disposal for the lead and PCB contaminated soils. We have the following comments on the EE/CA proposals:

1. The EE/CA states that if all contamination above Risk Based Concentrations has not been removed at the specified depth, then a liner may be installed to separate contaminated soil from clean backfill material and the contaminated soil would be addressed at a later date. We recommend that it would better to address all the contaminants before backfilling. Any backfilling should be done with regulator oversight.
2. At all lead contaminated sites, soil will be excavated and disposed of at a Class I landfill. Title 23, Section 2581, allows the use of contaminated soil as a foundation layer (depending on STLIC values) for a landfill final cover. Since MCAS El Toro has landfills proposed for capping and closure, we suggest that this option be considered as an alternative to Class I landfill disposal.
3. If the cleanup objective is based on a residential scenario, then will the higher lead cleanup levels proposed at depths greater than 2ft. be protective enough, or is this proposal based on another less restrictive cleanup scenario?

If you have any questions, please call me at (909) 782-4998.

  
Lawrence Vitale  
DoD Section