



Cal/EPA

Department of
Toxic Substances
Control

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November 4, 1996

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BRAC Environmental Coordinator
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MCAS EL TORO
SSIC # 5090.3



**DRAFT FINAL PHASE II REMEDIAL INVESTIGATION REPORT: THE ORIGINAL
LANDFILL, SITE 3, OPERABLE UNIT 2C, MARINE CORPS AIR STATION (MCAS)
EL TORO**

Dear Mr. Joyce:

The California Environmental Protection Agency (Cal/EPA) has completed the review of the above subject document dated October 1996, prepared by Bechtel National, incorporated. The report presents the results of Remedial Investigation (RI) conducted at Site 3, the Original Landfill. Site 3 is one of two sites in Operable Unit 2C for the MCAS El Toro.

Cal/EPA will accept the final RI report if the enclosed Department of Toxic Substances Control and California Integrated Waste Management Board comments dated October 18, 1996 are addressed in the final RI report. If you have any questions, please call Mr. Tayseer Mahmoud at (310) 590-4891.

Sincerely,

FOR John E. Scandura, Chief
Southern California Operations
Office of Military Facilities

Enclosures

cc: Ms. Bonnie Arthur
U. S. Environmental Protection Agency
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Hazardous Waste Management Division, H-9-2
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Mr. Joseph Joyce
November 4, 1996
Page 2

cc: Mr. Lawrence Vitale
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DEPARTMENT OF TOXIC SUBSTANCES CONTROL
Comments on
Draft Final Phase II Remedial Investigation Report for Site 3, OU-2C
Marine Corps Air Station-El Toro
Dated October 1996

The Department of Toxic Substances Control (DTSC) has reviewed the Draft Final Phase II RI Report for Site 3 landfill. We also reviewed the response to Mr. Tayseer Mahmoud, Remedial Project Manager for DTSC and Ms. Sherrill Beard, Registered Geologist from DTSC's Geological Services Unit comments on the draft report. Based on our review, the Navy did not provide adequate responses to all the comments. In some cases, the response indicated that the document will be corrected but was not corrected. Mr. Mahmoud's and Ms. Beard's comments are listed below. Dr. John Christopher, Staff Toxicologist from DTSC's Human and Ecological Risk Division, prepared additional comments on the document. Dr. Christopher's comments are contained in a separate memorandum dated October 31, 1996 and are attached to this letter. We suggest a meeting to clarify any issues relating to the comments:

1. Executive Summary, Remedial Investigation Scope, Figure ES-1

Show former Site 3 boundaries on Figure ES-1 and provide an explanation why site boundaries were reevaluated and expanded. This information will support the reasons why the scope of the investigation was increased.

2. Executive Summary, Nature and Extent of Contamination, page ES-6

The estimation for the volume of waste should be revised to reflect recent information collected during the Phase II investigation.

Soil gas results should not be compared with California Air Resources Board (CARB) values. Values generated from the CARB study are intended for the comparison of surface air samples not subsurface soil gas samples.

3. Section 3.1, Surface Features, page 3-1

The list of DQO decisions should include the following to be added:

Identify the limits of exposed and buried landfill waste.

4. Section 3.5.2, Regional Occurrence and Movement of Groundwater, Figure 3-6, page 3-19

In the legend of this figure, the explanation for the groundwater divide depicted near Site 2 should be revised to read "Groundwater Divide Location and Trend Inferred."

5. Section 3.6.4.2, Groundwater Quality, page 3-30

Third paragraph: Most of the reasoning discussed as to why iron and manganese results are inconclusive regarding potential degradation of groundwater from leachate of the Site 3 landfill are due to sample collection (high turbidity values) and laboratory duplicate results (not within control limits). If the laboratory duplicate results were not within control limits the sample lot should have been rerun. Since, it is assumed by the reviewer, that the samples were not rerun, it is suggested to use past data, including results from the most recent groundwater sampling event that occurred in January and February of 1996 (collected by CDM Federal Programs Corporation and reported in the draft quarterly groundwater monitoring report dated April 18, 1996) to interpret the iron and manganese analytical data.

Fourth paragraph: The discussion about major cations and anions is unclear as to its purpose. The discussion leads the reviewer to assume that groundwater beneath Site 3 may be impacted by groundwater that has migrated beneath Sites 2, 5, and 17. Additionally, there is no support provided in the Report showing that Sites 2, 5, and 17 are upgradient, except perhaps Figure 3-6, which shows all relevant groundwater contours as inferred. Furthermore, if this section is going to state that Stiff and Piper diagrams generated from Site 3 data are similar to diagrams generated from data collected at other landfills located at MCAS El Toro, then the significance of the comparison should be addressed.

6. Section 4.1.6, Aerial Photograph Review, page 4-8, first paragraph

Please show the disturbed area and the several stained areas located east and southeast of the existing site boundaries, as shown on the 1958 aerial photograph. Also, provide explanation for the existence of such features.

7. Section 4.4.2.1, Shallow Soil, page 4-69 of the draft report, sixth paragraph

The following statement was deleted from the draft report to the draft final report: "...the laboratory noted that the chromatograph patterns for these analyses were not typical for these fuels." Please provide further discussion about the statement.

8. Section 5.3.3.1, Volatile Organic Compounds in Groundwater, page 5-32

Reference to benzene concentration in groundwater being 5 µg/L is a typographical error. The correct reference is 21 µg/L.

9. Section 7, Conclusions and Recommendations, Table 7-1, page 7-3

The "Nature and Extent" entry for DQO Decision 5 should be reevaluated. Low levels of SVOCs were detected in 21 of 21 groundwater samples collected and analyzed from Sites 3 and 4, yet it is stated that water quality parameters indicate that the landfill contents have not leached to groundwater. Please provide rationale for this interpretation.

The "Fate and Transport" entry for DQO Decision 6 should be revised to read "Landfill constituents are not predicted to leach to groundwater." In future documents, it is recommended to avoid using relative descriptors such as "significantly" without providing supporting data. It is difficult for the reviewer to interpret the impact a landfill may have to groundwater based on the statement "Landfill constituents have not significantly leached to groundwater."

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

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**MEMORANDUM**

TO: Tayseer Mahmoud
Office of Military Facilities (OMF)
Region 4, Long Beach

FROM: John P. Christopher, Ph.D., D.A.B.T.
Staff Toxicologist
Human and Ecological Risk Division (HERD)

DATE: 31 October 1996

SUBJECT: MCAS El Toro: Technical Memorandum on Background Levels of Inorganics; Responses to Comments and Draft Final RI Reports for Sites 3 and 5
PCA: 14740 Site: 400055-47

**Background**

Region 4 OMF has asked HERD for continuing support on issues regarding risk assessment at Marine Corps Air Station (MCAS) El Toro, a closing base in Orange County which is also designated a Federal Superfund site. Remedial activities at this base are being directed by Naval Facilities Engineering Command, Southwest Division (SWDIV).

We had presented our comments on an earlier draft in a memorandum dated 22 July 1996. Sites 3 and 5 are landfills located near the southeast border of the base. We presented our comments in memoranda dated 7 and 10 June 1996 on the baseline risk assessments for these sites which were part of the Phase I Remedial Investigations (RI). Four of the five documents reviewed here are the Navy's responses to those comments and the Draft Final RI Reports (RIR). The fifth document is a technical memorandum on ambient levels of metals in soil.

Documents Reviewed

We reviewed the following five documents, all prepared by Bechtel National, Inc., contractors to SWDIV:

1. Final Technical Memorandum, Background and Reference Levels, Remedial Investigations, Marine Corps Air Station El Toro, California, CTO-0076/0272". October 1996.
2. "Response to Comments, Draft Phase II Remedial Investigation Report for Site 3, OU-2C, MCAS El Toro", dated 23 September 1996.
3. "Draft Final Phase II Remedial Investigation Report, Operable Unit 2C - Site 3, Marine Corps Air Station El Toro, California, CTO 0076/0243", dated October 1996.
4. "Response to Comments, Draft Phase II Remedial Investigation Report for Site 5, OU-2C, MCAS El Toro", dated 23 September 1996.
5. "Draft Final Phase II Remedial Investigation Report, Operable Unit 2C - Site 5, Marine Corps Air Station El Toro, California, CTO 0076/0244", dated October 1996.

We received requests to review these documents on 7 October (#2-5) and 17 October 1996 for (#1).

Scope of Review

The documents were reviewed for scientific content. Minor grammatical or typographical errors that do not affect interpretation were not noted; however, these should be corrected in future versions of the documents. We assume that sampling of environmental media, analytical chemistry data, and quality assurance procedures have been examined by regional personnel. If inadequacies in these areas with respect to risk assessment were encountered, they are noted below. Future changes or additions to the document should be clearly identified.

General Comments

The Navy's analysis of background metals in soil is acceptable. Responses to our comments and changes in text for the Draft Final RIRs for Sites 3 and 5 are acceptable with two exceptions. First, the Navy must re-examine its conclusions regarding the importance of groundwater as a transport medium, because risks to future off-site residents are driven by chromium which might be hexavalent. Second, the ecological risk assessment for Site 5 omitted three metals as constituents of potential concern (COPC).

Specific Comments

1. **Technical Memorandum on Background:** The technical memorandum is acceptable. The Navy was correct to remove a few high values for cadmium and nickel from the ambient sets. The approach shown in Figure 2 accurately represents the compromise worked out in San Francisco in May 1996 among the Department, USEPA Region IX, and the Navy.
2. **Exposure Point Concentrations:** Uncertainties associated with using C_{MAX} as exposure point concentrations are adequately addressed in the sections on uncertainties in the Draft Final RIRs for Sites 3 and 5.
3. **Hexavalent Chromium in Groundwater:** This following refers to the Navy's responses to our comment #14 for Site 3, "Fate and Transport in Groundwater" and our comment #4 for Site 5, "Hexavalent Chromium". Nearly all the estimated risk for a potential future residents at both Sites 3 and 5 comes from groundwater, but the Navy states in conclusions for both sites that fate and transport in this medium is not significant. The Navy did not speciate valence states of chromium, so total chromium was taken to be all hexavalent. Chromium drives the risk estimate, which is $>1E-04$, a level customarily thought to be highly significant. Thus, transport of chromium in groundwater is very highly significant. The Navy states that conditions in groundwater at both sites are such that nearly all chromium will be in the less toxic trivalent state, but this remains to be established in a monitoring program. Thus, fate of chromium in groundwater is also crucial. The Navy must change the text of the conclusions in Section 7 of both Draft Final RIRs to reflect the importance of the fate and transport of chromium in groundwater.
4. **Ecological Assessment for Site 5, Sec. 7, App. S:** We agree with the Navy's conclusion, expressed in Section 7.5.3, that Site 5 does not pose a significant risk to wildlife. However, this chapter requires minor revision. Copper, lead and zinc were identified as COPC in Table N-2; however, they do not appear in Table 7-2 and were apparently not evaluated as COPCs. Please include assessment of these metals in the final report. Maximum concentrations detected were within a factor of 2 of the 95th quantile of background (Table N-2); so we do not expect the corrected estimates of hazard to change dramatically for any of the species assessed.
5. **Other Changes to Text:** Except as noted in Comment 3 above, the changes in text from the earlier drafts make the Draft Final RIRs for Sites 3 and 5 acceptable

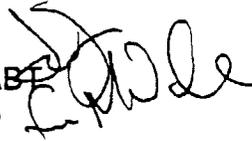
Tayseer Mahmoud
31 October 1996
Page 4

with respect to risk assessment. In particular, we note and accept the changes regarding selection of inorganic COPC (Site 3, App. L; Site 5, App. N).

Conclusions and Recommendations

Document 1 is acceptable. Documents 2 through 5 require minor revisions to address hexavalent chromium in groundwater at both sites and inorganic COPCs at Site 5.

Reviewer: Michael J. Wade, PhD, DABT
Senior Toxicologist, HERD



cc: Mr. J. Paull, USEPA Region IX
Dr. C. Callahan, USEPA Region IX



Cal/EPA

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Mr. Tayseer Mahmoud
California Environmental Protection Agency
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Office of Military Facilities
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245 W. Broadway, Suite 350
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Subject: Responses to Comments on Draft Phase II Remedial Investigation
Report for Operable Unit 2C - Site 3, Marine Corps Air Station, El
Toro, California

Dear Mr. Mahmoud:

California Integrated Waste Management Board (Board) Closure and Remediation staff have reviewed the responses to Board staff comments transmitted in the letter of June 3, 1996, which were submitted with two volumes of Draft Final Phase II Remedial Investigation Report. The submittal, dated October 3, 1996, was received on October 7, 1996. The aforementioned documents were prepared by Bechtel National, Inc., on behalf of the Department of the Navy, for conformance with Title 14, California Code of Regulations (14 CCR), Division 7, Chapter 3, Article 7.8. These regulations consist of potential applicable or relevant and appropriate requirements for the Site 3 Landfill.

Based on our review we are providing the following comments:

General Comments

1. Generally, the responses do not address fully Board staff comments which were included in the letter of June 3, 1996. Adequate responses should answer all issues stated in the review letter including all necessary justification, and inform, where applicable, that appropriate changes have been made in the body of the document. The latest responses appear to address certain parts of the comments and only in a surficial manner.

If necessary, Board staff are available to provide assistance in clarifying any issues related to their comments.

2. The response document lacks a table of contents and continuous page numeration, both of which make review of this document difficult and cumbersome. It is recommended that the format of the response document be revised to expedite its review.

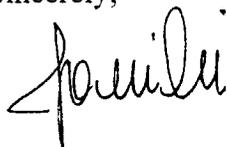
3. Comments included in the letter of June 3, 1996, are identified as "Specific Comments." No such terminology was used in the original letter.

Specific Comments

4. Although the text has been revised to reflect the correct date (1944) of the blueprint, the response does not indicate that this change was made.
5. The response to comment 4 states that the flood-retarding basin will be constructed under Orange County authority. Although the basin's construction and operation fall out of Department of Navy control, its existence and performance will directly affect the situation at Site 3. Also, after the completion of the MCAS ownership reassignment program, Site 3 likely will be operated and/or controlled by Orange County. Thus, it is requested that the basin be considered as a part of the runoff/runon control system and as such taken into consideration for the purpose of this and any future documents relevant to Site 3 closure and postclosure maintenance. As a result of this conclusion, the basin should be depicted on all relevant drawings.

Should you have any questions regarding this matter, please call me at (916) 255-1195.

Sincerely,



Peter M. Janicki
Closure and Remediation South
Permitting and Enforcement Division