



Cal/EPA

Department of
Toxic Substances
Control

5 West Broadway,
Suite 425
Long Beach, CA
562-4444

December 6, 1996

M60050.001821
MCAS EL TORO
SSIC # 5090.3



Pete Wilson
Governor

James M. Strock
Secretary for
Environmental
Protection

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

**COMMENTS ON DRAFT PHASE II FEASIBILITY STUDY REPORT FOR THE PERIMETER
ROAD LANDFILL, SITE 5, 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, Inc. The report presents the results of a feasibility study (FS) conducted to identify and evaluate potential remedial action alternatives at Site 5, the Perimeter Road Landfill. Site 5 is one of two sites in Operable Unit 2C for the MCAS El Toro.

This letter is to transmit the enclosed Department of Toxic Substances Control, Regional Water Quality Control Board, and California Integrated Waste Management Board comments dated November 26, 1996 and December 2, 1996, respectively. Please incorporate the comments, where appropriate, and send us a response to comments along with a revised document. Thank you for your cooperation. If you have any questions, please call me at (310) 590-4891.

Sincerely,

Tayseer Mahmoud
Remedial Project Manager
Base Closure Unit
Office of Military Facilities
Southern California Operations

Enclosures

cc: See Next Page



Mr. Joseph Joyce
December 6, 1996
Page 2

cc: Mr. Glenn Kistner, SFD-8-2
Remedial Project Manager
U. S. Environmental Protection Agency
Region IX
Federal Facilities Cleanup Office
75 Hawthorne Street
San Francisco, California 94105-3901

Mr. Lawrence Vitale
Remedial Project Manager
California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
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Mr. Peter Janicki
California Integrated Waste Management Board
8800 Cal Center Drive
Sacramento, California 95826

Mr. Steven Sharp
County of Orange
Environmental Health Division
Solid Waste Local Enforcement Agency
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Mr. Tim Latas
Bechtel National, Inc.
401 West A Street, Suite 1000
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Mr. Andy Piszkin
Remedial Project Manager
Naval Facilities Engineering Command
Southwest Division, Code 1831.AP
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DEPARTMENT OF TOXIC SUBSTANCES CONTROL
Comments on
Draft Phase II Feasibility Study Report for Site 5, OU-2C
Marine Corps Air Station-EI Toro
Dated October 1996

GENERAL COMMENTS:

1. Utility Lines running along the site

The FS should discuss whether the remedial action alternatives will interfere with access to the utility lines (Appendix D of the RI showed unidentified utilities). The future reuse of the property may necessitate expansion of the utility lines. If the lines are located under or adjacent to a cap for example, institutional controls may limit or prohibit access. In addition, the utility lines may already have an easement that allows a utility company access to the lines for repair and maintenance. These potential constraints may require a redesign of the remedial alternatives or the inclusion of the cost to move the utility lines.

2. Future Land Use

The draft Community Reuse Plan, dated August 1996, prepared by the MCAS El Toro Local Redevelopment Authority has listed the primary alternative for future redevelopment of the area where Site 5 is located as "Recreation (golf)." The FS does not include a remedial action alternative for a recreation/golf course proposal.

SPECIFIC COMMENTS:

1. Section 2.2.3.2, CONTAMINANT MIGRATION, page 2-30 and 2-31

The third paragraph on page 2-30 and the first paragraph on page 2-31 mention soil analyses "in the lysimeters." For clarity, we suggest that the sentence be revised to language similar to "in a soil sample collected during installation of the lysimeter."

2. Section 2.2.4.3, RISKS TO UTILITY WORKERS, page 2-37

The second sentence in the second paragraph of this section states that "It is unlikely that repair would be needed more than once a year." Please see general comment above. The FS does not clearly state whether the utility lines would be located under or adjacent to the landfill cap alternatives.

3. Section 3.1.4, Remedial Action Objectives, page 3-14

Please reference the decision document that supports the statement that BRAC Cleanup Team has agreed that treatment of the groundwater contamination is not necessary.

4. Section 3.4.5, Institutional Controls, page 3-19

This section states that "Access controls (e.g., fencing and signs) are expected to be necessary to assure the integrity of the landfill cover subsequent to the completion of the closure." Please be advised that the draft Community Reuse Plan, dated August 1996, prepared by the MCAS El Toro Local Redevelopment Authority has listed the primary alternative for future redevelopment of the area where Site 5 is located as "Recreation (golf)." Please evaluate the appropriate institutional controls for recreation/golf reuse scenario and the impact on the landfill cover.

5. Section 3.5.2.2, DEED RESTRICTIONS, page 3-24

The comment provided above (comment number 4) also applies here.

6. Section 5, Detailed Analysis of Alternatives

See attached memorandum dated November 15, 1996 from DTSC staff Toxicologist, Dr. John Christopher.

7. Tables 5-1 through 5-10, Cost-Estimate Summary

The 20-percent contingency has not been applied to operation and maintenance costs. This is inconsistent with Appendix D, Section D4.1, page D4-1 which states that the contingencies are 20-percent of direct and indirect capital cost and operation and maintenance costs.

8. Section 5.2.1.2, Evaluation, State and Community Acceptance, page 5-5

Please change the text from California DTSC to Cal/EPA. Cal/EPA includes DTSC, RWQCB, CIWMB, etc. Please make the changes throughout the document.

9. Appendix A, Applicable or Relevant and Appropriate Requirements (ARARs)

The Tables of ARARs and the written sections are well organized making the ARARs analysis easy. We have the following general comments that could apply to all the landfill sites:

- A. The reason(s) that an ARAR was determined to be “not an ARAR” should be written in the column headed “Comments”. We note that few citations determined “not an ARAR” without a reason provided in the “Comments” column.
- B. The Navy did not address all the submitted potential ARARs that DTSC solicited from the agencies. The Navy should analyze all the submitted ARARs using the same format used for the appendices tables.
- C. In the tables, there is a superscript “b” and no explanation below the tables.
- D. Section A.4.3.1.2, Criteria for Municipal Waste Landfills, 40 CFR 258, page A4-32: The section discusses 258.60, however, section 258.60 could not be found in the analysis Table A4-1 as referenced in the paragraph.
- E. Section A4.4.2, State, page A4-34: The paragraph states that certain State regulations may be relevant for consolidation but in Table A4-2, page A4-25, the regulations are specified as not ARARs.
- F. In the section “Resource Conservation and Recovery Act Requirements,” the Navy discussed the issue whether or not California RCRA authorized program made Title 22 regulations federal regulations. DTSC sent you comments on draft FS for Sites 2 & 17 which disagrees with the assertion that DTSC’s regulations are federal ARARs.

10. Appendix B, Proposed Monitoring Plan, Section B2.3, Monitoring and Reporting Frequency, page B2-2

As a signatory to the Record of Decision for the landfill, we expect the Navy to submit the reporting requirements to DTSC. Please add DTSC as a recipient to all monitoring and reporting requirements due to all other agencies. DTSC is

the designated one voice for Cal/EPA that will coordinate comments and approval of reports. This comment also applies to Sections B2.4, B3.3, B3.4, B4.3, B4.4, B4.5, and B5.1.

11. Appendix B, Proposed Monitoring Plan, Section 4.4, Corrective Action, page B4-2

Include in this section further discussion detailing the elements that would lead toward corrective action. A clearly outlined contingency plan should be included in the FS. The Navy should provide information such as the following: Define what is meant by "significant change from conditions presented in the RI." What procedure would be followed if "significant change" does occur? How soon after a significant change will a validation groundwater sample be collected? What if the second groundwater sample does not validate the first sample collected? What if it does? Answers to these and other related questions need to be clearly outlined in the FS.

12. Appendix B, Proposed Monitoring Plan, Section B5.5, Site Security Inspection, page B5-3

Inspection and maintenance of the bench mark for the landfill should be added to the list of signs to be inspected during postclosure.

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: 15 November 1996

SUBJECT: MCAS El Toro: Feasibility Study for Site 5
PCA: 14740 Site: 400055-47

A handwritten signature in cursive script, reading "John P. Christopher".

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).

Site 5 is a landfill located in the southeastern portion of the base. In a memorandum dated 31 October 1996, we presented our comments on the Draft Remedial Investigation (RI) Report for Site 3; this report contained the baseline risk assessment. The current memorandum relates to the feasibility study for Site 5.

Document Reviewed

We reviewed "Draft Phase II Feasibility Study Report - Site 5, Marine Corps Air Station El Toro, California, CTO-0076/0250". This report, dated October 1996, was prepared by Bechtel National, Inc., contractors to SWDIV. HERD received a request to review this document on

Scope of Review

The document was reviewed for scientific content. Minor grammatical or typographical errors that do not affect interpretation have not been noted; however, these should be corrected in future versions 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 these regards were encountered in this review, they are noted below. Future changes or additions to the document should be clearly identified.

Conclusions and Recommendations

The document is thorough and well written. We agree with the Navy's conclusions. However, we recommend minor revisions to make the report acceptable with respect to risk assessment.

The Navy should include quantitative expressions of risk reduction in the detailed analysis of alternatives in Chapter 5. If the alternative renders exposure pathways incomplete, then the Navy should state that site-related risks would be removed if this alternative were implemented.

Risks from residential exposure groundwater may be as great as $1E-03$, assuming that all chromium present is hexavalent. The Navy should state when chromium in groundwater will be speciated and whether any contamination in groundwater will be mitigated. Also, the Navy states that anaerobic conditions beneath the landfill which mobilized metals will be different downgradient. Any remedial alternative should contain provisions to verify this assumption.

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



cc: Ms. S. Beard, Geological Support Unit, DTSC Region 4
Mr. J. Paull, USEPA Region IX

Memorandum

To: Mr. Tayseer Mahmoud
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach CA 90802-4444

Date: November 26, 1996

From: CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD- SANTA ANA REGION
3737 MAIN STREET, SUITE 500, RIVERSIDE, CALIFORNIA 92501- 3339
Telephone: CALNET 632-4130 Public (909) 782-4130

Subject: DRAFT PHASE II FEASIBILITY STUDY, OPERABLE UNIT 2C - SITE 3 AND SITE 5, MARINE CORPS AIR STATION EL TORO, CTO - 0076/O250,0244

We have reviewed the subject reports dated September 23, 1996 and received by us on October 4, 1996. We have the following comments:

1. Beside providing a cap for the landfill, no other corrective action measures to remediate metal and VOCs contaminated groundwater are identified in the draft feasibility study. Will there be other corrective action measures such as the installation of passive gas venting systems or an active gas collection system, pump and treat system, etc. for groundwater remediation?

Note: Groundwater beneath Site 3 and Site 5 landfills contains some metals and VOCs contamination. Since the beneficial uses of the groundwater basin (Irvine Forebay I) beneath the sites include municipal and domestic supply, groundwater contaminated by VOCs and metals above MCLs should be remediated. Capping the landfills will minimize further groundwater degradation but may not remediate the groundwater. However, if metals/VOCs in groundwater are contained and monitored, groundwater remediation may not be necessary. Installing a passive gas venting system and capping the landfill may be sufficient.

2. Cover design alternatives such as Alternatives 4a, 4b, 4c, and 4d are acceptable to us. Criteria used for acceptance: The selected cover design must offer equivalent waste containment capability to the Title 23 prescriptive cover. Alternatives 4a, 4b, 4c, and 4d meet this performance criteria. For landfill 3 the modified cover designs described in alternatives 6a and 6b would be protective of ground water and are acceptable to us.

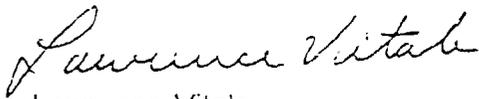
Where appropriate we recommend a monolithic cover (4-6' of silty sand material with 10^{-5} cm/s permeability, depending on the depth of the root systems of the vegetation selected) in semi-arid/arid region. If El Toro MCAS is designated as semi-arid climate, then a monolithic cover (Alternative 3) is a good idea. Even though the HELP model run result shows that Alternative 3 does not offer equivalent water quality protection when compared to the prescriptive cover, we believe that the equivalency can be demonstrated by selecting the appropriate vegetation type and thickness for the cover, and selecting the appropriate unsaturated flow model to predict the amount of flow through the cover.

Because of many variables that will affect the moisture content of the cover, moisture monitoring of the monolithic cover may be necessary to effectively minimize water flow through the unsaturated zone .

3. The draft FS mentioned that GCL barrier is more likely than clay to be penetrated by burrowing animals or by root systems of grasses or shrubs, and that GCL when dry is not impermeable to gas. The type of GCL that may be used is not identified in the draft FS. Is the GCL going to be a layer of clay bound by upper and lower geotextiles (e.g. Claymax, Bentomat, Bentofix) or a layer of clay bound to a geomembrane (e.g. Gundseal)? Will the use of Gundseal minimize penetration by burrowing animals or by root systems of grass, and create an impermeable surface to gas flow?
4. We did not review the risk assessment section of the report, therefore we have no comment regarding human and environmental health risk.

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

Sincerely,



Lawrence Vitale
DoD Section



Cal/EPA

California
Environmental
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Integrated
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Board

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Sacramento CA 95826
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Pete Wilson
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DEC 2 1996

Mr. Tayseer Mahmoud
California Environmental Protection Agency
Department of Toxic Substances Control
Office of Military Facilities
Southern California Operations
245 W. Broadway, Suite 350
Long Beach, California 90802-4444

Subject: Review of Draft Phase II Feasibility Study Report for Operable
Unit 2C - Site 5, Marine Corps Air Station, El Toro, California

Dear Mr. Mahmoud:

We have reviewed the subject document dated October 1996, prepared by Bechtel National, Inc., on behalf of the Department of the Navy. The California Integrated Waste Management Board (Board) staff have reviewed this submittal for conformance with Title 14, California Code of Regulations, Division 7 (14 CCR), Chapter 3, Article 7.8. These regulations consist of potential applicable or relevant and appropriate requirements for the Site 5 Landfill.

Based on our review, we submit the following comments:

General Comments

1. In the event a landfill clean closure or consolidation are to be chosen (this applies to all four landfill sites: 3, 5, 2, and 17) as a part of final landfill closure and if these activities result in either vertical and/or lateral expansion of the remaining landfill units, such expansion must comply with the applicable U.S. E.P.A. Subtitle D regulations regarding bottom liner installation. However, a regional water quality control board (Santa Ana Regional Water Quality Control Board) has the authority to exempt the proposed landfill expansion from bottom landfill liner installation requirement, if the project proponent (U.S. Department of Navy) can demonstrate that the absence of liner poses no increased environmental threat to the ground water quality in the landfill area. The Santa Ana Regional Water Quality Control Board staff should be contacted directly in this matter.
2. If available, information regarding both short term and long term postclosure land use should be taken into consideration when selecting the remediation alternatives applicable to each site. Consistently, the submitted remedial investigation and feasibility study documents have stated that the presumptive remedy approach was chosen for closure of landfill units at El Toro MCAS.



Recycled Paper

Because of this approach, only a limited site investigation (this applies to all four landfill units) regarding waste characterization, landfill vertical and lateral extent, and landfill gas generation potential has been conducted. Although the gathered information is sufficient to close the landfill units in accordance with the minimum closure standards, it also limits future postclosure land uses for these sites. For example, if an irrigated park or golf course is to be developed on some landfill units, closure requirements may be far more stringent than if the site is to be left as a non-irrigated open space (under presumptive remedy approach).

Thus, if a defined postclosure land use exists for any of the landfill units, this end land use should be factored into remediation alternatives. For example, it would be futile to review final closure design involving use of a concrete or asphalt cap when it is already known that a site will be developed into a landscaped and irrigated recreational area (a park or golf course).

Also, certain postclosure land uses may have negative impacts on both short-term and long-term longevity of materials chosen for landfill final cover.

Please note that since it was indicated that the postclosure land use for Site 5 is to be an irrigated golf course, both concrete and asphalt caps appear to not be applicable (unless this site is to be utilized not for the actual green areas but for facilities related to the golf course such as maintenance shop, club house or parking lot). Please refer to the CIWMB letter of October 25, 1996, for detailed information on potential issues related to the construction of a golf course on Site 5.

3. A more accurate estimate of waste quantities contained in the landfill should be provided in order to validate the proposed grading plan.

Also, if applicable, the text must discuss an action plan for waste removal, underlying soil verification testing, and regrading activities.

4. Since the previously reviewed Remedial Investigation Report did not include an adequate lateral/vertical waste extent investigation, it is unclear how the depths of the landfill gas monitoring probes have been chosen.

5. For the analyses of costs associated with each of the final cover alternatives, it should be clarified that the postclosure maintenance costs are provided on a per year basis.
6. The analyses of the proposed final cover alternatives do not account for soil loss resulting from surface erosion. Specifically, soil loss analyses should be conducted for the proposed final site configuration for alternatives using a soil cover. A commonly used method to evaluate soil losses is the Universal Soil Loss Equation with acceptable soil loss not exceeding two tons per acre per year.
7. Similarly, the drainage system design considered for this project must be supported by appropriate drainage calculations yielding channel sizing and validating energy dissipating features (if present). In addition, the issue of flow capacity of the downstream facilities should be included. Sediment load must be included in channel sizing calculations.
8. When analyzing final cover costs, the costs related to construction of a final cover test pad should be included when applicable.
9. For the alternatives proposing the use of synthetic or geocomposite low permeability materials, the need for a drainage layer should be discussed.
10. It should be noted that if a chosen final cover consists of a monolithic soil cap (Alternatives 3 and 4), in accordance with regulations included in 14 CCR, section 17773 (c), such design shall be submitted and reviewed as an engineered alternative to the prescriptive cover. Please refer to the aforementioned regulation for the specific submittal requirements.

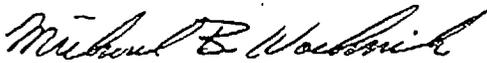
Specific Comments

11. Figure 4-3, Typical Drainage Cross Sections, should include final cover materials on the drainage system cross-sections. Specifically, anchoring points for the synthetic and geocomposite materials and keying locations for earth materials should be shown
12. Section A.4.1.2 cites Article 7.8 of Title 23 CCR, which should be changed to Article 7.8 of Title 14 CCR.

13. Section B.2.3, Landfill Gas Monitoring and Reporting Frequency, states that perimeter landfill gas monitoring will be conducted semiannually for the first five years following landfill closure. In accordance with 14 CCR, section 17783.11, these inspections should be conducted quarterly, at least until the landfill gas situation stabilizes and monitoring results become consistent.
14. Section B.5.1, Landfill Cap Inspection, states that the final cover will be inspected monthly for the first six months after site capping and then semiannually for the next four and one-half years, and annually for the remaining 25 years. Cap inspections should be conducted on a quarterly basis and following major storm events until full site revegetation occurs. Upon site condition stabilization, a lesser frequency may be proposed.
15. Section B.5.2, Drainage System Inspection, should state that the drainage system will be monitored quarterly and after major storm events, until site conditions stabilize; upon approval, a lesser frequency may then be allowed. Also, it should be stated that repairs and maintenance of the drainage system will be conducted prior to the next storm event.

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

Sincerely,



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