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November 1, 1996



Cal/EPA

Department of  
Toxic Substances  
Control

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Mr. Joseph Joyce  
BRAC Environmental Coordinator  
U.S. Marine Corps Air Station - El Toro  
P. O. Box 95001  
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Environmental  
Protection

**COMMENTS ON DRAFT PHASE II FEASIBILITY STUDY REPORT FOR THE MAGAZINE  
ROAD LANDFILL, SITE 2, OPERABLE UNIT 2B, 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 September 6, 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 2, the Magazine Road Landfill. Site 2 is one of two sites in Operable Unit 2B for the MCAS El Toro.

This letter is to transmit the enclosed Department of Toxic Substances Control, California Integrated Waste Management Board, and Regional Water Quality Control Board comments dated September 30, 1996 and October 29, 1996, respectively. The draft report is well written. A few clarifications and modifications are needed as outlined in the enclosed comments. 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*  
*November 1, 1996*  
*Page 2*

cc: Ms. Bonnie Arthur  
U. S. Environmental Protection Agency  
Region IX  
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75 Hawthorne Street  
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Mr. Lawrence Vitale  
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**DEPARTMENT OF TOXIC SUBSTANCES CONTROL**  
**Comments on**  
**Draft Phase II Feasibility Study Report for Site 2, OU-2B**  
**Marine Corps Air Station-El Toro**  
**Dated September 6, 1996**

The Department of Toxic Substances Control (DTSC) has reviewed the Draft Phase II FS Report for Site 2 landfill. The Document was reviewed by Mr. Tayseer Mahmoud, Remedial Project Manager for DTSC, and Ms. Sherrill Beard, Registered Geologist from DTSC's Geological Services Unit. The comments are directed to MCAS El Toro and their consultants. The report is well written. A few clarifications and modifications are needed as outlined in the comments below. Please incorporate the comments, where appropriate, into the revised document.

**1. Executive Summary, Remedial Action Objectives, page ES-11, last sentence**

Please reference the decision document that supports the statement that BRAC Cleanup Team has agreed that treatment of the groundwater contamination is not necessary. This comment also applies to Section 3.1.4.

**2. Section 2.2.1.3, Geology and Hydrogeology, Figures 2-3 and 2-4**

Typographical error, change B' to B shown on the index legend.

Provide a symbol and explanation in the legend for the lithology symbol on the cross-section illustrated with solid black circles.

**3. Section 2.2.2.6, Groundwater, page 2-35**

As previously stated in the review of the remedial investigation at Site 2, DTSC still suggests it be necessary to generate background values for gross alpha and beta activity to determine if the values detected in groundwater samples collected from landfill monitoring wells are impacted as a result of leachate or similar values are detected throughout the Station.

Another acceptable approach to handle this issue is to conduct isotopic analysis because gross alpha does not help too much in determining whether or not there is an actual release from the landfill. The Navy's response to RI comments #11 for Sites 3 and 5, prepared by Bechtel, indicates that isotopic analysis is

planned to be incorporated into the groundwater monitoring plan for MCAS El Toro. Please ensure that isotopic analysis is performed when the next round of groundwater monitoring takes place.

**4. Section 2.2.3.1, Contaminant Persistence (Persistence of Metals), second paragraph, page 2-42**

Provide the necessary data and discussion to support statements regarding metals concentration and correlation, or lack of correlation, to turbidity (unfiltered samples?). It is confusing as to the purpose of such a limited discussion.

**5. Section 2.2.3.1, Contaminant Persistence (Persistence of Metals), third paragraph, page 2-42**

While the Eh - pH diagram shown in Figure 2-15 suggests that chromium detected in groundwater samples may only be present in the trivalent state, the assumption is that the system is in equilibrium and the Eh values are accurate. Reality is that hexavalent chromium is often detected in groundwater samples from impacted sites that exhibit a geochemical profile that would suggest hexavalent chromium should not be detected. In fact, given the higher solubility of hexavalent chromium with respect to trivalent, if dissolved chromium is present, a significant portion is probably in the hexavalent state. Furthermore, given the weight hexavalent chromium carries with respect to a risk assessment as compared with trivalent chromium, to resolve this issue, water-quality samples should be analyzed for hexavalent chromium. Please note that any such samples need to be analyzed within 24 hours of collection.

**6. Section 2.2.3.1, Contaminant Persistence (Persistence of Metals), fourth paragraph, page 2-44**

What is the significance of the discussion concerning nickel?

**7. Section 2.2.3.1, Contaminant Persistence, Figure 2-16**

The title of this figure should include a descriptor that reflects the uncertainty of the oxidation - reduction zone boundaries.

**8. Section 2.2.3.2, Contaminant Migration (infiltration), page 2-47**

This section states that leaching of VOCs from the landfill appears to be relatively insignificant, however, elevated concentrations of TCE and PCE in groundwater have been detected. Provide further explanation and data to support this section.

**9. Section 2.2.3.2, Contaminant Migration (infiltration), page 2-48**

Are there other indicators, additional field data, or further evaluation that may be used to determine if metals are leaching from the landfill? As the discussion stands, it is unclear as to the groundwater impact from metals.

**10. Section 4.3, Alternative 3, Single -Layer Cap, Figure 4-1**

Show location of cross section I-I' on figure 4-1.

**11. 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 E, Section E4.1, page E4-1 which states that the contingencies are 20-percent of direct and indirect capital cost and operation and maintenance costs.

**12. 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.

**13. Section 5.2.5, Alternative 5, Short-Term Effectiveness, page 5-34, 1st paragraph**

Delete reference to an additional 2-foot-thick vegetative soil layer because we are not comparing Alternative 5 with Alternative 4. The statement would be appropriate in Section 5, Comparative Analysis of Alternatives. This comment also applies to Alternatives 5-b and 5-c.

**14. 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 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. Please see the attached in-house memorandum dated August 25, 1995, from DTSC’s Staff Counsel which disagrees with the assertion that DTSC’s regulations are federal ARARs.

**15. 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.

**16. Appendix B, Proposed Monitoring Plan, Section B4.3, Groundwater Monitoring and Reporting Frequency, page B4-1**

For the purposed of the Site 2 FS, the groundwater monitoring plan and reporting frequency are acceptable. However, the operation and maintenance plan and/or remedial phase should include reporting procedures and a fully developed groundwater monitoring plan.

**17. 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.

**18. 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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## M E M O R A N D U M

TO: Isaac Hirbawi  
Remedial Program Manager  
Office of Military Facilities  
Southern California Operations  
Department of Toxic Substances Control  
Region 4  
245 West Broadway Suite 245  
Long Beach, California 90802

FROM: Ramon B. Perez *Ramon B. Perez*  
Senior Staff Counsel  
Office of Legal Counsel

DATE: August 25, 1995

SUBJECT: ARARS REVIEW -- CAMP PENDLETON

Pursuant to your request, I reviewed the ARARs for Site 9, Camp Pendleton. The document contains a serious misstatement of the law, relating to the reference to state regulations as federal ARARs.

The last paragraph of page B-3 states that 22 California Code of Regulations (Calif. Code of Reg.) 66264.94 is a federal ARAR "because it was approved by the United States Environmental Protection Agency (U.S. EPA) in its July 23, 1992 authorization of the State of California's RCRA program and is federally enforceable." As was stated in Volume 57, federal register 32726, July 23, 1992, California applied for, and was granted final authorization, under the provisions of RCRA, to operate its state hazardous waste control program in lieu of the federal hazardous waste program. When this takes place, the federal requirements no longer apply in the authorized state. California was granted final authorization limited only by the provisions of the Hazardous and Solid Waste Amendments of 1984 (HSWA). New requirements and prohibitions imposed by HSWA are enforceable by U.S. EPA. Subject to this limitation, the provisions of the state hazardous waste control program are provisions of state law, and are not "federally enforceable."

Issac Hirbawi  
August 25, 1995  
Page 2

This issue was made clear in United States v. State of Colorado, 990F.2d 1565 (1993). The court considered the issue of "whether a state which has been authorized by the Environmental Protection Agency to 'carry out' the state's hazardous waste program 'in lieu of' RCRA... is precluded from doing so at a ... facility owned and operated by the federal government." The Court stated:

"As a federal facility, the arsenal is subject to regulation under RCRA... More importantly, because the EPA has delegated RCRA authority to Colorado, the Arsenal is subject to regulation under CHWMA (Colorado state law)"

Lastly, U.S. EPA published a list of examples of potential state ARARs at 55 fed reg 8765 (March 8, 1990). Among the examples listed are the requirements of authorized state hazardous waste control programs.

In conclusion, we disagree with the assertion that the DTSC's regulations are federal ARARs. For the above stated reasons, we conclude that these regulations are state ARARs.

I hope that these comments will be of help to you. Please call me if you have any questions.

# Memorandum

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

Date: October 29, 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 2B - SITE 17 AND SITE 2, MARINE CORPS AIR STATION EL TORO, CTO - 0076/O240,0246

We have reviewed the subject reports dated September 6, 1996 and received by us on the same date. 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 17 landfill contains metals such as manganese, selenium, and thallium above USEPA MCLs; VOCs are detected but are below MCLs. For Site 2 Landfill, PCE and TCE in the groundwater are detected above MCLs. Since the beneficial uses of the groundwater basin (Irvine Forebay I) beneath the site 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, 4d, 5c, and 5d 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, 4d, 5c, and 5d meet this performance criteria.

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. Eventhough 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, maintaining a certain moisture level within the cover (if necessary, an irrigation system may be installed), 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?

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

Sincerely,



Lawrence Vitale  
DoD Section



Cal/EPA

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SEP 30 1996



Pete Wilson  
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Secretary for  
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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 2B - Site 2, Marine Corps Air Station, El Toro, California

Dear Mr. Mahmoud:

We have reviewed the subject document dated September 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 2 Landfill.

Based on our review, we submit the following comments:

General Comments

1. For ease of review, we request that the landfill gas monitoring results retain consistent units throughout the text.
2. Since the previously reviewed Remedial Investigation Report did not include an adequate lateral/vertical waste extent investigation, it is unclear if the past gas surveys are fully representative of landfill gas concentrations at the site or how the depths of the proposed landfill gas monitoring probes have been chosen.
3. 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.
4. 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. 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.



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5. 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.
6. When analyzing final cover costs, the costs related to construction of a final cover test pad should be included when applicable.
7. The Feasibility Study Report does not include a description of the long-term plan for postclosure land use for both the landfill and the surrounding areas. Certain postclosure land uses may potentially affect the performance of some low permeability materials.
8. For the alternatives proposing the use of synthetic or geocomposite low permeability materials, the need for a drainage layer should be discussed.
9. If waste consolidation is to be considered as a part of the landfill closure, more specific information about the volume and type of waste to be relocated must be provided. Also, the proposed grading plan must account for the additional waste when developing the landfill configuration.

#### Specific Comments

10. 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
11. Section B.2.3, Landfill Gas Monitoring and Reporting Frequency, states that the perimeter landfill gas monitoring will be conducted semiannually for the first five years following landfill closure. In accordance with 14 CCR, 17783.11, these inspections should be conducted quarterly, at least until the landfill gas situation stabilizes and monitoring results become consistent.

12. 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 frequency and following major storm events until full site revegetation occurs. Upon site condition stabilization, a lesser frequency may be proposed.
13. 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 be then 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,



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