

Marine Corps Air Station El Toro Installation Restoration Program

Public Information Materials

9/24/97

Restoration Advisory Board Meeting held at Irvine City Hall Irvine, CA

Materials/Handouts Include:

- RAB meeting agenda/Public notice - 9/24/97 RAB meeting.
- RAB meeting minutes - 8/6/97 RAB meeting. (*Minutes were amended, then approved at the 9/24/97 RAB meeting; the Revised Meeting Minutes are included with these materials.*)
- MCAS El Toro project mailing list coupon.
- MCAS El Toro project web site information.
- Information Brochure - El Toro Pipeline, Defense Fuel Supply Center.
- Questionnaire for MCAS El Toro RAB Members.
- Presentation - BRAC Environmental Budget Process, by Brian Sanders, Program Manager, Southwest Division Naval Facilities Engineering Command.
- Presentation - MCAS El Toro Schedule Update, Federal Facility Agreement - 9/24/97, by Andy Piszkin, Remedial Project Manager, Southwest Division Naval Facilities Engineering Command.
- Flyer - RAB Installation Restoration Program Site Tour.
- Presentation - RAB Progress in the Installation Restoration Program, by Joseph Joyce, RAB Co-Chair, 9/24/97.
- MCAS El Toro RAB Schedule December 1997-December 1998.

- Agency Comments - U.S. Environmental Protection Agency
 - U.S. EPA Technical Comments, Draft Phase II Feasibility Study OU-3A Sites, MCAS El Toro, and Extension Request, September 3, 1997.

- Agency Comments - Cal-EPA, Department of Toxic Substances Control
 - Cal EPA DTSC Comments on Round 5 Groundwater Monitoring Report, MCAS El Toro, August 7, 1997.
 - Cal EPA DTSC Comments, Draft Phase II Feasibility Study OU-3A Sites, MCAS El Toro, August 26, 1997.

**MCAS El Toro
Restoration Advisory Board
Meeting**

**24 September 1997 6:30-9:00 PM
Irvine City Hall
Conference and Training Center
One Civic Center Plaza
Irvine**

AGENDA

Welcome/Introductions/Agenda Review (6:30-6:40)	Joseph Joyce Marine Corps/Naval RAB Co-chair
Old Business (6:40-6:50)	
Approval of 8/6/97 Minutes	Greg Hurley RAB Community Co-chair
New Business (6:50-8:30)	
Regulatory Agency Comment Update (6:50-7:05)	Glenn Kistner U.S. Environmental Protection Agency Tayseer Mahmoud Cal-EPA, Dept. of Toxic Substances Control
MCAS El Toro Environmental Program Budget Update (7:05-7:30)	Brian Sanders U.S. Navy/Southwest Division (SWDIV)
Update on Federal Facilities Agreement Schedule (7:30-7:45)	Andy Piszkin U.S. Navy/SWDIV
Break (7:45-7:50)	
MCAS El Toro Installation Restoration Program Site Tour (7:50-8:10)	Joseph Joyce
RAB Participation in the Installation Restoration Program at MCAS El Toro (8:10-8:30)	Joseph Joyce
Meeting Summary (8:30-8:50)	Greg Hurley
Meeting Evaluation	
Future Topics and Meetings	
Closing (8:50-9:00)	Joseph Joyce & Greg Hurley

PUBLIC NOTICE

***MARINE CORPS AIR STATION
EL TORO***

Restoration Advisory Board Meeting



***Participate in the environmental restoration and
cleanup program underway at MCAS El Toro.
Your input is welcome!***

**Wednesday, September 24, 1997
6:30 - 9:00 p.m.**

**Irvine City Hall
Conference and Training Center
One Civic Center Plaza, Irvine**

This meeting will feature the following activities and presentations:

- ***Update on Environmental Program Budget***
- ***Cleanup Program Schedule Update***
- ***Restoration Advisory Board Participation in the
Installation Restoration Program***



For more information about this meeting and the Installation Restoration Program at MCAS El Toro, please contact:

**Commanding General
AC/S, Environment (1AU)
Attn: Mr. Joseph Joyce, MCAS El Toro
P.O. Box 95001, Santa Ana, CA 92709-5001
(714) 726-3470 or 726-3386**

MARINE CORPS AIR STATION EL TORO
RESTORATION ADVISORY BOARD MEETING

August 6, 1997

REVISED MEETING MINUTES

A Restoration Advisory Board (RAB) meeting for Marine Corps Air Station (MCAS) El Toro was held Wednesday, August 6, 1997 at the Irvine City Hall. The meeting began at 6:36 p.m. These minutes summarize the discussions and presentations from the meeting.

WELCOME, INTRODUCTIONS, AGENDA REVIEW

Mr. Joseph Joyce, Marine Corps RAB Co-Chair, opened the meeting by introducing himself and welcoming everyone in attendance. He explained that the format of the last meeting was experimental in that it was held in open forum style, everyone was encouraged to ask questions at any time. This open format meeting was done on a one time basis in response to the request of a few RAB members to ask questions at any time. Mr. Joyce said that the meeting was very long and, as agreed upon by Mr. Greg Hurley, RAB Community Co-Chair, the format of tonight's meeting would allow for questions and answers, and facilitated discussions after each presentation. Following self-introductions made by everyone in the room, Mr. Joyce provided an overview of the meeting agenda.

OLD BUSINESS

Review and Approval of May 28, 1997 Meeting Minutes

The RAB minutes were approved without amendment.

NEW BUSINESS

Regulatory Agency Comment Update - Glenn Kistner, Project Manager, U.S. EPA and Tayseer Mahmoud, Project Manager, Cal-EPA DTSC

Mr. Kistner provided several informative handouts, one which pertained to Mr. Andy Piszkin's upcoming presentation called *A Guide to Developing Superfund Records of Decision*. This is the guide used by U.S. EPA and other agencies for use during the preparation of Records of Decision. Mr. Kistner also provided a U.S. EPA "comfort letter" which was sent on June 5, 1997 to Mr. Joyce. The purpose of the comfort letter is to provide assurance that the entire base is *not* on the National Priorities List (NPL), only the areas that are potentially contaminated and going through the Remedial Investigation/Feasibility Study (RI/FS) process. He said that about 85 percent of the base is environmentally clean and available for transfer. He encouraged everyone to read the letter and call him with any

questions. He said that another purpose of the letter is to serve as a blanket letter that provides general information on Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) liability for prospective purchasers or lending institutions. The comfort letter should be made available in the project files for public accessibility. Mr. Kistner said that as the RI/FS process proceeds, and it is determined that either cleanup needs to be performed or that no further action is necessary at the Installation Restoration Program (IRP) sites. As this occurs, the NPL site area decreases in size and more property areas at the Station are considered clean and environmentally ready for transfer. Mr. Joyce reiterated that presently 85 percent of the base is clean and environmentally ready for transfer and residential and industrial use.

Mr. Mahmoud said DTSC recently commented on two documents: the Draft Groundwater Remediation Pilot Test Work Plan (VOC Source Area) and the Draft Record of Decision for Site 24, Operable Unit 2A - Vadose Zone (soil cleanup). Briefly, he provided a summary of each comment, noting that the Marine Corps has already responded to a number of them. Currently, DTSC is reviewing the Draft Feasibility Study for OU-3A (Sites 8, 11, 12); comments will be completed by the end of this month. *Copies of regulatory agency handouts and comments provided to RAB members are also listed at the end of these minutes.*

Update on Shallow Soil Sites (OU-3) - Bernie Lindsey, Remedial Project Manager (RPM), Southwest Division Naval Facilities Engineering Command

Mr. Joyce said that the presentation on the OU-3 sites was a timely topic on the agenda of the last RAB meeting but it was not given due to the length of the meeting. In an effort to keep tonight's meeting on time, he reminded everyone that all questions were to be held until the end of the presentation.

At MCAS El Toro, IRP sites with similar environmental concerns were grouped into operable units, or "OUs". OU-3 consists of 17 shallow soil sites (Site 16 is the only site with a groundwater component). Mr. Lindsey explained that the concern at these sites is the possibility that chemicals, namely fuels and waste oils, and solvents, may have been directly deposited on the ground surface. He used a map of the Station to show the location of the OU-3 IRP sites. He provided an overview of the status of the OU-3 sites, what has been done, and the future plans for the sites.

Mr. Lindsey said that very extensive site investigations have been conducted at each site which resulted in the development of voluminous documents requiring considerable amount of work to develop. The first documents were the Work Plan, and the Sampling and Analysis Plan, both approved by regulatory agencies. Then the environmental field work was implemented and the results were presented in the 9-volume Draft Remedial Investigation Report for OU-3A. All members of the MCAS El Toro Base Realignment and Closure (BRAC) Cleanup Team met regularly and participated in the investigation throughout the entire process. Based on the results of the Remedial Investigation, the OU-3 sites were divided into three groups:

- **OU-3A, no further action (Sites 4, 6, 9, 10, 13, 15, 19, 20, 21, and 22).** No unacceptable risks to human health have been identified at these sites. A *Proposed Plan for No Further Action* (which also included Site 25, Major Drainages) was developed for public review and comment (public comment period June 16 to August 16, 1997). *The Plan was also provided as a RAB meeting handout.*
- **OU-3A, further action planned (Sites 8, 11, and 12).** The Draft Feasibility Study Report for these OU-3A sites is currently being reviewed by the BRAC Cleanup Team. Once comments have been incorporated, the Draft Final Feasibility Study Report will be made available for public review.
- **OU-3B, further action being considered (Sites 1, 7, 14, and 16).** Site 1, Explosive Ordnance Disposal (EOD) Range, will not be addressed until after activities at the site have ceased. Based on meetings among the BRAC Cleanup Team, Sites 7 and 14 may require additional sampling. Site 16, the Crash Crew Fire Pit, was also investigated along with the OU-3A sites and it was the only site found to have groundwater contamination. Site 16 was not evaluated under the current feasibility study, however, a pilot test will be conducted. Any decisions on further actions for these sites will be announced later.

Mr. Lindsey said that after the extensive environmental investigation of each site, a risk assessment, a key component of the RI/FS investigation process, was conducted. Human health and ecological risk assessments were performed to help determine if environmental cleanup is necessary at each of the sites. Information on the type and amounts of chemicals in the soil collected during the remedial investigation were used to estimate and assess risks to human health associated with exposure to and toxicity of chemicals. This approach is inherently conservative. For example, it assumes that kids play and eat the soil, and people live at a site (never leaving) for 30 years. In addition, if a site is covered with concrete, the risk assessment assumes that it is not. Mr. Lindsey said that the specific approach taken to conduct the risk assessment was agreed to by the regulators and that U.S. EPA's risk assessor had high regard for it. He said that the ultimate goal of the CERCLA process is to get to no further action as warranted by the risk assessment results. However, all the OU-3A sites did not make the "cut" to no further action. A feasibility study is underway for Sites 8, 11, and 12 to evaluate cleanup alternatives for these sites. Mr. Joyce clarified that remediation must be completed at sites requiring cleanup before a decision for no further action may be reached.

Mr. Lindsey reiterated that the ten OU-3A sites and Site 25 covered in the recently released *Proposed Plan for No Further Action* present no unacceptable risks to human health based on the sampling results conducted during the remedial investigation and the accompanying risk assessment analysis. An ecological risk assessment was performed at Site 25 to assess risks to the environment and it was concluded that the risk to wildlife in all four drainages is not significant, and no cleanup action is proposed.

Mr. Lindsey pointed out the two poster board stations displayed on the wall that were used at last week's public meeting for the *Proposed Plan for No Further Action*. The displays

illustrated the process leading to no further action at the eleven IRP sites. A 10-minute break was taken to allow everyone the opportunity to look at the informational displays.

Following the break, Mr. Lindsey provided a graphical presentation of the risk assessment results for the OU-3A sites recommended for no further action as well as those for further action planned. The graph illustrated U.S. EPA's different levels of acceptable and unacceptable health risks and where each site fell within the ranges. He explained that the risk assessment results were based on a comparison of the levels of various metals considered acceptable by U.S. EPA to the levels that are naturally occurring in the environment both on and off the Station, also called "background concentrations." Not everyone is aware that metals, such as cadmium and arsenic, can occur naturally at levels of concern in geologic formations. This is important information since it would be impossible to clean up a site to U.S. EPA's acceptable levels if the natural concentrations were above those levels.

Upcoming anticipated activities include: the signing of the Record of Decision for No Further Action for ten OU-3A sites and Site 25, which is anticipated to take place around October 31, 1997; release of the Draft Final Feasibility Study Report for OU-3A Sites 8, 11, and 12 in late 1997; and the initiation of the additional work at the OU-3B sites. Mr. Lindsey reminded the RAB that all dates should be considered *tentative*.

Several questions from the RAB were answered by the project personnel, many of which clarified items presented by Mr. Lindsey. One question was whether future land use of MCAS El Toro was considered during the OU-3 Remedial Investigation. Due to the concern raised, the wording in the report will be checked, and clarified if necessary. Another question was whether there are ammonium perchlorate concerns at MCAS El Toro. The concern over ammonium perchlorate was raised because the technology to detect this chemical at toxic levels has recently become available. Mr. Joyce said it was not a chemical of concern during the remedial investigation because there was no indication that rockets (attached to aircraft to assist in take-off) were ever tested or used at the Station. Ammonium perchlorate is a fuel component in solid fuel rockets. Based on this concern raised at the RAB meeting, potential use of ammonium perchlorate at MCAS El Toro will be reexamined and that information will be provided at the next RAB meeting.

In response to a question regarding land use for the no further action sites, Mr. Lindsey said that land use is unrestricted unless the site overlies Site 24, the Volatile Organic Compound (VOC) Source Area. If groundwater underlies such a site, the area cannot be used for groundwater extraction. He also stated that the no further action proposal for Sites 4, 6, 9, 10, 13, 15, 19, 20, 21, 22, and 25 is based strictly on the information from the Remedial Investigation Reports and the risk assessments which analyzed risk to human health and the environment and has nothing to do with reuse of the land.

Records of Decision (RODs) - MCAS El Toro - Andy Piszkin, Remedial Project Manager (RPM), Southwest Division Naval Facilities Engineering Command

Mr. Piszkin provided copies of his overheads to those in attendance. He presented an outline of the Proposed Plan, Record of Decision (ROD), and Administrative Record, three main decision documents for site cleanup and closure. The Proposed Plan presents the Marine Corps' proposed remedy for site cleanup. The RAB has already reviewed two such documents. The ROD is the formal and legal documentation of the remedy selection process which, for MCAS El Toro, is signed by the signatories of the Federal Facilities Agreement (Marine Corps, U.S. EPA Region IX, and Cal-EPA's Department of Toxic Substances Control and the Regional Water Quality Control Board). The Administrative Record is an accumulation of all the documents on which the Record of Decision is made.

Mr. Piszkin explained that the Department of the Navy, on behalf of the Marine Corps, is the lead agency for environmental cleanup at MCAS El Toro. The lead agency must interpret the federal laws for cleanups. U.S. EPA has final authority over decisions made for NPL sites, which are similar to Superfund sites. MCAS El Toro is an NPL site and, as such, U.S. EPA must approve all RODs developed for the Station. The State of California has authority over sites not on the NPL. ROD categories include **no action** for sites with no risk, sites where action has already been taken, or for items excluded under CERCLA (such as petroleum-contaminated sites in which the Regional Water Quality Control Board has the lead). **Action** RODs include *immediate* action for sites with immediate threats; *interim* action for sites with multiple issues like Site 24, which has soil and groundwater concerns; or *contingency* RODs, in which decisions are based on other results or decisions.

RODs may change due to increases and decreases in cost (per U.S. EPA cost estimating within a range of from -30 to +50 percent), performance, and/or scope based on the following three categories. A *non-significant* change does not change the overall concept of the original decision; a *significant* change alters the action slightly so as to require documentation, but does not change the concept of the decision; *fundamental* change is so different from the original concept that the ROD requires an amendment and another public review cycle.

The Administrative Record is all the documentation that went into reaching the final decision for a site. It is required to be maintained near the site. Copies of the MCAS El Toro Administrative Record file are available in the Environment and Safety Office at the Station, and at Southwest Division Naval Facilities Engineering Command in San Diego. U.S. EPA guidance is used to determine which documents are to be included in the Administrative Record file. The key value to an Administrative Record is the legal aspect. In the event that a decision is challenged, any response action selected will be upheld under judicial review unless proven in the Administrative Record that the decision made was not in accordance with the law.

Mr. Piszkin ended his discussion on RODs with a list of the documentation and other items included in a ROD. This was followed by brief Q and A that clarified the role of the lead

agency for the Installation Restoration Program at MCAS El Toro, the Department of the Navy, and the role of the lead oversight agency, U.S. EPA. The lead agency is responsible for the interpretation of the law on a federal level; it performs the investigations, produces the documentation, and funds the cleanup. U.S. EPA is the lead *regulatory* agency with almost veto authority on the CERCLA process at NPL sites. DTSC also provides input on the environmental effort at MCAS El Toro, but as long as both U.S. EPA and the Navy are in agreement, a ROD may go forward without the approval of DTSC.

Schedule Update: Federal Facilities Agreement (FFA) - Andy Piszkin

Before beginning his overview of the Federal Facilities Agreement schedule for the Installation Restoration Program at MCAS El Toro, Mr. Piszkin reminded the RAB that the dates put forth are *anticipated* dates. The program has had significant delays, which is always possible with this kind of work. Mr. Piszkin provided a handout listing each operable unit, its associated CERCLA activity (such as proposed plan, public comment period, agency review period, etc.), and anticipated date for completion of each. He went over the schedule, providing detailed information as needed. *For specific schedule information and dates of the key steps for each of operable unit, please consult the FFA Schedule handout.*

Mr. Piszkin noted that Site 1, Explosive Ordnance Disposal Range, is an active training operation. If the range is closed (when the Station is closed) it will most likely fall under the Range Rule, a cleanup program separate from CERCLA. Mr. Joyce clarified that Site 1 is not a target range where bombs were dropped, but a training facility where explosives are detonated in a strictly controlled setting. The range is also used by the Sheriff's Department and other agencies specializing in these activities. The site is within the area proposed for transfer to the Department of Interior.

Mr. Piszkin explained that there is always a minimum 30-day public review period on CERCLA documents. In response to community input, the review period was extended an additional 30 days for the *Proposed Plan for the No Further Action Sites*. Mr. Joyce added that the Proposed Plans and fact sheets developed for the environmental cleanup effort at MCAS El Toro always include a mail-in coupon for adding names to the project mailing list.

In response to a question pertaining to the status of the proposed Joint Navy/Orange County Water District (OCWD) groundwater cleanup project timeline, Mr. Piszkin said that the Navy proposed an offer and draft language to a settlement agreement with OCWD in December 1996. The Navy received a response on June 18, 1997. The Irvine Ranch Water District has assisted OCWD in review of the proposed offer. The Navy's legal council is currently reviewing the OCWD counteroffer. There is no set time frame for negotiations, although the Navy will probably have a response to OCWD in a couple months.

Update on Public Participation - Mr. Greg Hurley, RAB Community Co-Chair and Mr. Joseph Joyce, RAB Marine Corps Co-Chair

Mr. Hurley had a brief reminder for RAB members regarding their roles. He reminded the RAB that they originally volunteered to be active participants. They agreed to go back to their constituents with the information gained at these meetings, to bring back input from the community, and to encourage the public to attend the meetings. He said that each RAB member is obligated to talk to members of the community. He felt it important to be reminded of these obligations periodically.

Mr. Joyce presented an outline the July 31, 1997 public meeting for those who were unable to attend. He said that the informational displays presented tonight were a sample of two displays made available at the public meeting. The format used at the meeting was different than those utilized at the typical public meeting at which a slide presentation is given, followed by a question and answer period. The meeting was very interactive and members of the public had the opportunity to talk face-to-face with the project team, including representatives from the MCAS El Toro, SWDIV, U.S. EPA, DTSC, and the Regional Water Quality Control Board. Along with the informational displays, copies of reports and other documents were available for review. Handouts including executive summaries of reports were also provided. Members of the public were able to get the level of information they desired, whether that was very general or technically detailed. It was tailored to the individual needs of each community member.

A brief discussion on the meeting format followed Mr. Joyce's update. Various opinions were discussed. One RAB member who attended the July 31 public meeting felt that the public meeting format provided for good information sharing but it is only one mode of public participation; and that there was no public forum where opinions could be voiced. Another individual who attended the meeting agreed that it was not the place to get up on a "soapbox" to voice concerns, but felt that it was an excellent format and recommended that it be used again; the public was offered as much personal time as needed with the technical staff and could participate at their own pace.

Mr. Joyce said that the majority of the meeting evaluation comments received the night of the public meeting were positive. When asked about the appropriate time for RAB members to voice concerns, he said that there are many opportunities to express opinions. There are RAB meetings and subcommittee meetings which are open forums and the RAB is a key participant in various activities leading up to public meetings held during a specific public comment periods. The target audience of public meetings is the expanded community. By the time information on proposed cleanup options is provided to the expanded community, RAB members have had the chance to voice and discuss their opinions at many RAB meetings and RAB subcommittee meetings. It was suggested that at future public meetings, an overview be provided in a presentation-style format before the informational display stations are open. However, Captain Matt Morgan, MCAS El Toro BRAC Public Affairs Officer, felt that the public meeting met the needs of the community, especially based on the

number of individuals who attended. Mr. Hurley pointed out that Mr. Joyce was on vacation the week of the public meeting and interrupted his vacation to participate at the meeting. The RAB thanked Mr. Joyce with applause.

MEETING EVALUATION AND FUTURE TOPICS

During the meeting evaluation RAB members provided the following comments
(responses are printed in italics):

- Tonight's meeting stayed on time.
- The meetings need a time structure.
- The informational display graphics were good.
- Spontaneous Q and A was not successful.
- Allowing speakers to complete their presentations often provides answers to questions.
- When will the next site tour be held? *Information for another Friday/Saturday site tour will be sent out soon.*

Suggestions for future presentation topics include *(responses are printed in italics):*

- A subcommittee meeting should be held before the next public meeting. *Mr. Joyce reminded the RAB that subcommittees can meet anywhere, anytime. They are not limited by location or frequency.*
- Updates on the groundwater issue, specifically OU-1/OU-2A (VOC Source Area).
- Irvine Desalter Project.
- Engineering cost estimating.
- Risk assessment approach.
- DOD policy - future land use guidance, land use restrictions.
- Use of ammonium perchlorate at MCAS El Toro and other bases.
- Fuel pipeline. *This is outlined in the 28 May 1997 RAB meeting minutes and the name, address and phone number of the key contact was provided. [Joseph V. Trany, Environmental Engineer, Defense Fuel Supply Center, 3171 North Gaffey Street, San Pedro, CA 90731-1099. Phone: (562) 335-3090.] The pipeline project is not within the scope of the MCAS El Toro RAB. However, the pipeline project team will be establishing a RAB and is currently looking for interested community members.*
- Review of RAB Guidance: RAB member roles; RAB purpose.
- DOD policy - Lead-based paint/asbestos.
- Investigation costs to date.

CLOSING ANNOUNCEMENTS/FUTURE MEETING DATES

The next RAB meeting is scheduled for 6:30 to 9:00 p.m., Wednesday, September 24, 1997 at the Irvine City Hall, Conference and Training Center, One Civic Center Plaza, Irvine.

The meeting was adjourned at 8:55 p.m.

Attachments:

-Sign-in sheets.

Handouts provided at the meeting and available at the Information Repository:

- RAB meeting agenda/Public notice - 8/6/96 RAB meeting.
- RAB draft meeting minutes - 5/28/97 RAB meeting.
- Public meeting overview - Proposed Plan No Further Action Sites, 7/31/97
- Where to go to get more information - MCAS El Toro information repository/points of contact list
- MCAS El Toro project mailing list coupon.
- MCAS El Toro project web site information.
- MCAS El Toro RAB Acronyms and Glossary of Technical Terms.
- Executive Summary Draft Final Phase II Remedial Investigation/Feasibility Study Addendum, Site 25 - Major Drainages, MCAS El Toro, April 1997.
- Executive Summary Draft Final Phase II Remedial Investigation Report, OU-3A Sites, MCAS El Toro, June 1997.
- U.S. EPA, "Guide to Developing Superfund Records of Decision," May 1990.
- U.S. EPA Comfort Letter Clarifying NPL Listing, Uncontaminated Parcel Identifications, and CERCLA Liability Issues Involving Transfers of Federally Owned Property, June 5, 1997. Includes as attachment, "Revised Guidance on U.S. EPA Concurrence in the Identification of Uncontaminated Parcels Under CERCLA Section 120 (h)(4)", March 27, 1997.
- Presentation - Operable Unit 3 (OU-3), MCAS El Toro, by Bernie Lindsey, Remedial Project Manager.
- Presentation - Records of Decision, by Andy Piszkin, Remedial Project Manager.
- MCAS El Toro Schedule Update, Federal Facility Agreement - 8/6/97.

- Agency Comments - U.S. Environmental Protection Agency

- U.S. EPA Technical Comments, Draft Ground Water Remediation Pilot Test Work Plan for MCAS El Toro, June 17, 1997.
- U.S. EPA Technical Comments, Draft Ground Water Remediation Work Plan and Draft Quality Assurance Project Plan for MCAS El Toro, July 3, 1997.

- Agency Comments - Cal-EPA. Department of Toxic Substances Control

- Cal EPA DTSC Technical Comments, Draft Groundwater Remediation Pilot Test Work Plan for MCAS El Toro, June 24, 1997.
- Cal EPA DTSC Technical Comments, Draft Record of Decision (ROD) for Site 24, Operable Unit 2A - Vadose Zone, MCAS El Toro, July 23, 1997.

A copy of these minutes and the handouts provided at the RAB meeting are available at the MCAS El Toro Information Repository, located at the Heritage Park Regional Library in Irvine. The address is 14361 Yale Avenue, Irvine; the phone number is (714) 551-7151. Library hours are Monday through Thursday, 10 am to 9 pm; Friday and Saturday, 10 am to 5 pm; Sunday 12 pm to 5 pm.

Navy and Marine Corps Internet Access - Environmental Web Sites

RAB meeting minutes are also located on the Navy's Southwest Division Environmental Web Page. There are two different internet addresses, both sites are identical and either one can be used:

<http://ivory.nosc.mil/~saundel/default.html>

<http://www.efdsouthwest.navy.mil/DEP/ENV/default.htm>

*For more information on environmental cleanup activities at MCAS El Toro you may access the Marine Corps Air Bases Western Area Web Site: **www.miramar.USMC.mil/BRAC/main.htm***

MCAS El Toro
Installation Restoration Program

MAILING LIST COUPON

If you would like to be on the mailing list to receive information about environmental restoration activities at MCAS El Toro, please complete the coupon below and mail to: Commanding General, AC/S, Environment, (1AU), Attn: Mr. Joseph Joyce, IRP Department, MCAS El Toro, P.O. Box 95001, Santa Ana, CA 92709-5001.

- Add me to the MCAS El Toro Installation Restoration Program mailing list.
- Send me information on Restoration Advisory Board membership.

Name _____

Street _____

City _____ State _____ Zip Code _____

Affiliation (optional) _____ Telephone _____

Navy and Marine Corps - Internet Access Environmental Web Sites

Southwest Division Naval Facilities Engineering Command Web Site:

www.efdswest.navfac.navy.mil/DEP/ENV/default.htm

Marine Corps Air Bases Western Area Web Site:

www.miramar.USMC.mil/BRAC/main.htm

Are there any risks to human health or the environment?

A Health Risk Assessment has been completed. The results indicate that there is no unacceptable risk to individuals or the environment in the vicinity of the release.

What will happen to the pipeline when MCAS El Toro is closed?

It is unknown at this time what will be the final disposition of the El Toro Pipeline after MCAS El Toro is closed. Presently, the Defense Fuel Supply Center is preparing to clean the pipeline, render it safe by packing it with inert nitrogen gas and return it to the U.S. Navy for disposition.

Where can additional information be obtained?

Further information regarding the assessment and monitoring of the release may be obtained from the information repository located at:

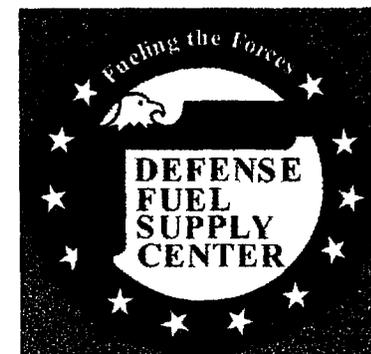
Heritage Park Regional Library
14361 Yale Avenue
Irvine, CA 92604
(714) 551-7151 ■

For More Information, Contact:

Joe Trani
Environmental Engineer
Defense Fuel Supply Center
3171 North Gaffey Street
San Pedro, CA 90731-1099
Phone: (310) 335-3090, x106
FAX: (310) 335-3099

INFORMATION BROCHURE

EL TORO PIPELINE DEFENSE FUEL SUPPLY CENTER





What is the El Toro Pipeline?

The pipeline is an 8-inch diameter 29.5-mile long U.S. Government pipeline that

extends from Defense Fuel Support Point (DFSP) Norwalk to Marine Corps Air Station (MCAS) El Toro. There is also a 6-inch diameter 2.5-mile spur leading to MCAS Tustin. The pipeline is owned by the U.S. Navy and operated by the Defense Fuel Supply Center.

How old is the pipeline?

The El Toro Pipeline was constructed by the U.S. Army Corps of Engineers in 1956.

What is the description of the pipeline?

The pipeline is eight inches in diameter (I.D.) with a wall thickness of .322 inches. It is made of A53 Type I seamless steel and is coated with an asphalt-based, fiber-impregnated coating. The pipeline is cathodically protected, an electrical means of eliminating or mitigating corrosion. Normal operating pressure for the pipeline is 300 pounds per square inch, gauge (psig); normal flowrate is 438 gallons per minute (GPM).

What is transported in the pipeline?

The pipeline delivers JP-5 jet fuel (a kerosene-based fuel). Currently, the pipeline has a throughput of approximately 16 million gallons of fuel per year.

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Have there been any releases along the pipeline?

Three pinhole leaks were discovered and repaired in 1990.

What caused the release?

Probable cause was heavy equipment damage during installation of another pipeline located above, crossing over, the El Toro Pipeline. The 8-inch jet fuel pipeline coating was "nicked" in three places, exposing bare steel to the surrounding soil.

Where is the release located?

The release occurred at the intersection of Newport Avenue and Old Irvine Boulevard in the City of Tustin.

Have there been any other releases associated with this pipeline?

There have been no other known releases on this pipeline.

Who is the regulatory agency involved?

The lead agency is the California Regional Water Quality Control Board (RWQCB), Santa Ana Region, a department of the California Environmental Protection Agency.

How deep is the fuel release?

The fuel released from the pipeline has formed an asymmetrical plume extending

②

80 to 100 feet below ground surface. The highest concentrations are located from approximately 65 to 85 feet below ground surface. Free product is floating on the groundwater at approximately 65 feet below ground surface.

What work has been accomplished?

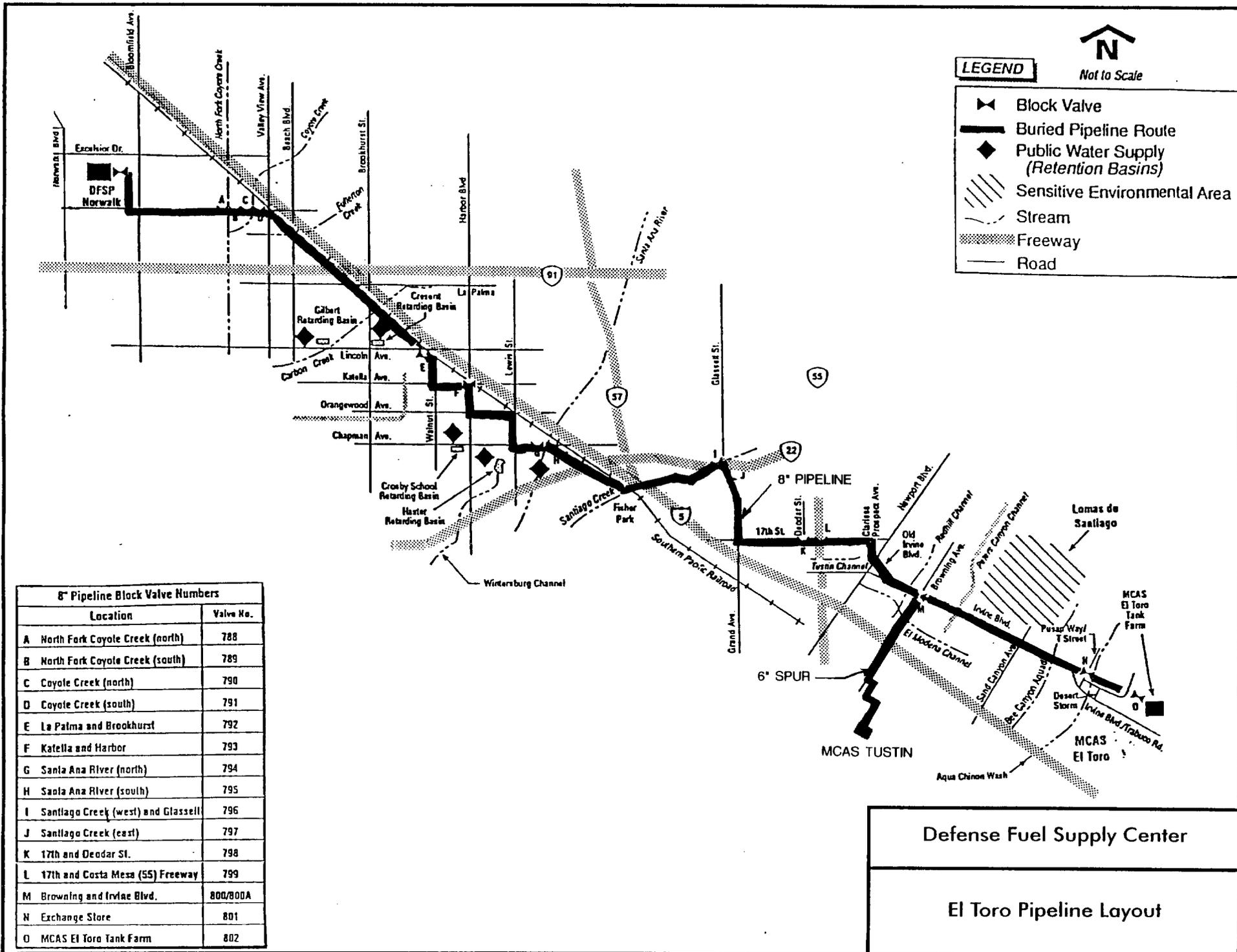
Thirty-eight borings and monitoring wells have been drilled/installed on public roadways and private commercial properties to assess and monitor the release. Quarterly groundwater monitoring reports have been submitted to the RWQCB since 1994. Free product is currently being removed from monitoring wells on a weekly basis. Field and laboratory studies have been completed to evaluate possible clean-up approaches.

Additionally, fate and transport modeling of groundwater is ongoing. Fate and transport modeling is a technique to estimate the transport rate and degradation of a chemical in the subsurface environment. This technique is generally performed by using computerized mathematical models.

Are any drinking water wells affected?

Presently, only a shallow aquifer has been affected.

③



LEGEND

↑
N
Not to Scale

- ✕ Block Valve
- Buried Pipeline Route
- ◆ Public Water Supply (Retention Basins)
- ▨ Sensitive Environmental Area
- ~ Stream
- ▨ Freeway
- Road

8" Pipeline Block Valve Numbers	
Location	Valve No.
A North Fork Coyole Creek (north)	788
B North Fork Coyole Creek (south)	789
C Coyole Creek (north)	790
D Coyole Creek (south)	791
E La Palma and Brookhurst	792
F Katella and Harbor	793
G Santa Ana River (north)	794
H Santa Ana River (south)	795
I Santiago Creek (west) and Glassell	796
J Santiago Creek (east)	797
K 17th and Deodar St.	798
L 17th and Costa Mesa (55) Freeway	799
M Browning and Irvine Blvd.	800/800A
N Exchange Store	801
O MCAS El Toro Tank Farm	802

Defense Fuel Supply Center

El Toro Pipeline Layout

Questionnaire For MCAS El Toro RAB Members

PLEASE RETURN THIS QUESTIONNAIRE TO:

**GREGORY F. HURLEY, COMMUNITY CHAIR
8001 IRVINE CENTER DRIVE
SUITE 900
IRVINE, CA 92618
FAX NO.: (714) 727-0656**

- 1. What groups, organizations or individuals do you share the information you receive from the MCAS El Toro Restoration Advisory Board with?**

- 2. How do you share the information you receive from the RAB with your community?**

- 3. What could the Restoration Advisory Board do to assist you in reaching more members of your community?**

**BRAC ENVIRONMENTAL
BUDGET PROCESS**

**Brian Sanders (Program Manager)
SOUTHWESTDIV NAVFAC**

Purpose

- **Budget Process**
 - **Highlights of MCAS El Toro's IR Budget**
-

What is [REDACTED]

- **“A document which expresses in financial terms the plan for accomplishing an organization’s objectives for a specified period of time”**

The [REDACTED]

- **Non-discretionary items = 2/3 of budget**
 - **Social Security**
 - **Medicare/Medicaid**
 - **Means tested entitlements**
 - **Other entitlements**
 - **Interest on debt**
- **Discretionary items = 1/3 of budget**
 - **Defense**
 - **Non-defense**

The DoD

- **Army**
- **Navy**
- **Marines**
- **Air Force**
- **Other Defense Agencies (e.g. Defense Logistics Agency)**

The DoD

- **Military, Civilian Personnel**
- **Ships, Airplanes, Tanks, other Transportation**
- **Weapons**
- **RDT&E**
- **Facilities**
- **Environmental**
- **BRAC**

BRAC

- **Structured process**
- **A lot of sweat, tears, and hard work**

FY 2000

- **Nov97: Submit FY00 - 05 requirements**
- **Jan98: Sponsor assessment**
- **May98: POM 00 decisions**
- **Jun98: FY00 budget controls issued**
- **Jul98: FY00 budget to FMB**
- **Sep98: FY00 budget to OSD**
- **Nov98: FY00 budget to OMB**
- **Jan99: FY00 budget to Congress**
- **Sep99: Congress approves budget**

Where

- **Completing obligation of FY97 budget**
- **Awaiting final Congressional approval of FY98 budget**
- **OSD reviewing FY99 budget**
- **Preparing FY00 - 05 requirements**

MCAS

- **Obligated \$70.1M of IR funds to date (FY85 - 97)**
- **IR cost to complete model = \$86.5M**
- **FY98 IR budget request = \$24M**

FY98

- **Initiate landfill designs**
- **Start cleanup of Site 24**
- **Continue groundwater monitoring**
- **Anticipated final groundwater remedy**

Conc

- **MCAS El Toro competes for \$**
- **Requirements developed based on input:**
 - **DON policy**
 - **BCTs**
 - **RABs**
 - **Other influences**
- **POC: Joseph Joyce, BEC MCAS El Toro**

MCAS EL TORO

Schedule Update

Federal Facility Agreement

9/24/97 RAB Meeting

Andy Piszkin
c:\briefs\rab\ffa979

1

Eleven Proposed No Further Action Sites

- **Public Comment Period**
 - » June 16 - August 16, 1997
 - » Public Meeting: July 31, 1997
- **Record of Decision - Agency Review**
 - » August 18 - September 9, 1997
- **Record of Decision - Anticipated Signing**
 - » September 30, 1997

2

VOC Source Area Vadose Zone Soils

- **Record of Decision - Agency Review**
 - » July 2 - August 13, 1997
- **Record of Decision - Anticipated Signing**
 - » September 30, 1997
- **Remedial Design/Remedial Action**
 - » Document submittal schedule
 - » 21 days after issuance of the ROD

3

VOC Source Area Vadose Zone Soils (continued)

- **Document Submittal Requirements**
 - » RD/RA Work Plans
 - » Preliminary Remedial Design
 - » Final Remedial Design
 - » Construction Quality Assurance Plan
 - » Construction Quality Control Plan
 - » Contingency Plan
 - » Project Closeout Report

4

Landfill Sites (2 & 17 and 3 & 5)

- **Proposed Plan - Agency Review***
 - » September 18 - November 7, 1997
- **Public Comment Period**
 - » January 6 - February 6, 1998
- **Record of Decision - Agency Review**
 - » March 18 - May 18, 1998
- **Record of Decision - Anticipated Signing**
 - » August 19, 1998

5

VOC Groundwater Source & Regional (To Be Negotiated)

- **Proposed Plan - Agency Review**
 - » October 16 - December 4, 1997
- **Public Comment Period**
 - » February 6 - March 6, 1998
- **Record of Decision - Agency Review**
 - » April 28 - June 23, 1998
- **Record of Decision - Anticipated Signing**
 - » September 23, 1998

6

Further Action OU-3A Sites (8, 11, & 12)

- **Feasibility Study - Agency Review***
 - » Comments due September 11, 1997
- **Proposed Plan - Agency Review**
 - » February 19 - April 21, 1998
- **Public Comment Period**
 - » June 30 - July 30, 1998
- **Record of Decision - Agency Review**
 - » September 15 - November 16, 1998

7

OU-3B Sites (1, 7, 14, & 16)

- **Feasibility Study - Agency Review**
 - » September - November, 1998
- **Proposed Plan - Agency Review**
 - » April - June, 1999
- **Public Comment Period**
 - » September - October, 1999
- **Record of Decision - Agency Review**
 - » November 1999 - January 2000

8

Marine Corps Air Station El Toro
Restoration Advisory Board
Installation Restoration Program
Site Tour



Restoration Advisory Board (RAB) members are invited to participate in a tour of the Installation Restoration Program Sites at MCAS El Toro. This tour will provide RAB members with a firsthand opportunity to see the sites and to ask questions of Marine Corps and regulatory project staff.

Date: Saturday, October 25, 1997 at 9 a.m.

Sign-up: Please sign-up by filling out the attached form and mailing or faxing it to Mr. Joseph Joyce by October 10, 1997.

Mailing address: Mr. Joseph Joyce
BRAC Environmental Coordinator
AC/S Environment (1AU)
MCAS El Toro, P.O. Box 95001
Santa Ana, CA 92709-5001

Overnight mail: Mr. Joseph Joyce
BRAC Environmental Coordinator
AC/S Environment (1AU)
MCAS El Toro, Building T-2010
Santa Ana, CA 92709-5001

FAX number: (714) 726-6586

Time: The tour will begin promptly at 9.m. and last approximately 2 hours. Please arrive 15 minutes early.

Location: Meet at MCAS El Toro, Officers' Club. For directions to the Officers' Club see the backside of this flyer.

Please wear comfortable walking shoes

Marine Corps Air Station El Toro
Restoration Advisory Board
Installation Restoration Program Site Tour

Directions to Officers' Club (tour starting point):

- From either I-5 or I-405 exit at Sand Canyon Avenue.
- Take Sand Canyon north to Trabuco Road, make a right turn. You will head straight to the Main Gate. At the Main Gate, inform the guard you are attending the Restoration Advisory Board (RAB) tour.
- From the Main Gate proceed straight to Perimeter Road, make a right turn (stop sign).
- Follow Perimeter Road for 1/2 to 3/4 of a mile, look for "Officers' Club signs.
- The Officers' Club is a large, tan colored building that stands alone on the right side of the road.
- Pull into the parking lot on the right side of the building. The parking lot at the Officers' Club is the starting point for the tour.

**MCAS El Toro
Restoration Advisory Board**

**Installation Restoration Program Site Tour
Sign-up Form**

Date: Saturday, October 25, 1997 at 9 a.m.

Sign-up: Please sign-up by filling out this form and mailing
or faxing it to Mr. Joseph Joyce by October 10, 1997.

Name: _____

Affiliation: _____

Phone Number: _____

FAX Number: _____

Address: _____

If there is more than one person in your party please include their names and relevant information

Mailing address: Mr. Joseph Joyce
BRAC Environmental Coordinator
AC/S Environment (1AU)
MCAS El Toro, P.O. Box 95001
Santa Ana, CA 92709-5001

Overnight mail: Mr. Joseph Joyce
BRAC Environmental Coordinator
AC/S Environment (1AU)
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Santa Ana, CA 92709-5001

FAX number: (714) 726-6586

Time: The tour will begin promptly at 9.m. and last approximately 2 hours. Please arrive 15 minutes early.

Location: Meet at MCAS El Toro, Officers' Club. (See attached flyer for directions).

MCAS EL TORO

RAB

PROGRESS IN THE INSTALLATION RESTORATION PROGRAM

Sept 24, 1997
By Joseph Joyce



RAB

Formed January 94

Co-Chairs

DoD - Joseph Joyce

Community - Greg Hurley

50 members



MISSION STATEMENT

The mission of the RAB is to promote community awareness and obtain timely constructive community review and comment on proposed environmental restoration actions to accelerate the cleanup and property transfer of MCAS El Toro. The RAB serves as a forum for the presentation of comments and recommendations to the United States Marine Corps, Remedial Project Managers of the U.S. Environmental Protection Agency and the California Environmental Protection Agency.



MEETINGS

26 RAB Meetings

Open to the Public

ANNOUNCED:

Los Angeles Times

Irvine World News

Orange County Register



SUBCOMMITTEES

OU1

OU2

OU3

General Environmental

BCP



RAB INPUT

Defense Environmental Task Force

Environmental Base Line Survey

Interviews with Local Press

Community Relations Plan

Landfill Consolidation



RAB INPUT

(con't)

Funding Requirements

Public Meeting Format

1,2, DCA

Site Tours

Develop Meeting Agenda's



DOCUMENTS REVIEWED

**Draft Phase II Remedial Investigation
Report, Operable Unit 2A, Site 24 (1996)
(OU2)**

**Draft Phase II Feasibility Study, Operable
Unit 3A Sites (Sites 8, 11, and 12) (1997)
(OU3)**



Documents Reviewed

(con't)

**Base Realignment and Closure Cleanup
Plan (BCP)**

**Draft Report Tank 398 Free Product
Removal (1995) (General Environmental)**



Documents Reviewed

(con't)

**Quarterly Groundwater Monitoring Reports
(beginning in June 1996) (General
Environmental)**

**Draft Community Environmental Response
Facilitation Act/Environmental Baseline
Survey(CERFA/EBS) (1995) (CERFA/EBS)**



Documents Reviewed

(con't)

**Draft Resource Conservation and Recovery
Act-Facility Assessment (RFA)
Addendum (1996) (Compliance/RFA)**

**Draft Operable Unit 1 Interim Remedial
Investigation/Feasibility Study Report
(1994) (OU1)**



Documents Reviewed

(con't)

**Draft Revised Operable Unit 1 Interim
Remedial Investigation/Feasibility Study
Report (1995) (OU1)**

**Draft Final Operable Unit 1 Interim
Remedial Investigation/Feasibility Study
Report and Addendum (1996) (OU1)**



Documents Reviewed

(con't)

Draft Final Phase II Remedial Investigation Report, Operable Unit 2A, Site 24 (1997) (OU2)

Draft Feasibility Study Report, Operable Unit 2A, Site 24 (1996) (OU2)



Documents Reviewed

(con't)

Draft Final Feasibility Study Report, Operable Unit 2A, Site 24, Vadose Zone (Soil) (1997) (OU2)

Draft and Draft Final Phase II Remedial Investigation/Feasibility Study Addendum, Operable Unit 2A, Site 25 - Major Drainages (1997) (OU2)



Documents Reviewed

(con't)

**Draft Phase II Remedial Investigation
Report, Operable Unit 2B, Site 2 (1996)
(OU2)**

**Draft Phase II Feasibility Study Report,
Operable Unit 2B, Site 2 (1996) (OU2)**



Documents Reviewed

(con't)

**Draft Phase II Remedial Investigation
Report, Operable Unit 2B, Site 17 (1996)
(OU2)**

**Draft Feasibility Study Report, Operable
Unit 2B, Site 17 (1996) (OU2)**



Documents Reviewed

(con't)

**Draft Phase II Remedial Investigation
Report, Operable Unit 2C, Site 3 (1996)
(OU2)**

**Draft Phase II Feasibility Study Report,
Operable Unit 2C, Site 3 (1996) (OU2)**



Documents Reviewed

(con't)

**Draft Phase II Remedial Investigation
Report, Operable Unit 2C, Site 5 (1996)
(OU2)**

**Draft Phase II Feasibility Study Report,
Operable Unit 2C, Site 5 (1996) (OU2)**



Documents Reviewed

(con't)

Draft Phase II Remedial Investigation Report, Operable Unit 3A Sites (Sites 4, 6, 8, 9, 10, 11, 12, 13, 14, 16, 19, 20, 21, and 22) (1996) (OU3)

Draft Revised MCAS El Toro Community Relations Plan (1996) (Community Relations)



RESULTS

**DoD / Regulatory POC's
Community Actively Involved
Community Informed
Investigations/Cleanup Decisions
Positive Relationship**



MCAS El Toro
RAB Meeting Schedule
December 1997 - December 1998

The Conference and Training Center (CTC) at Irvine City Hall has been reserved for RAB meetings on the following dates printed in **bold** (the last Wednesday of the month), unless noted otherwise. Generally, the format for the RAB meeting schedule now calls for having RAB meetings every other month. Other dates listed in *italic* indicate when a meeting room has been reserved for a RAB subcommittee meeting.

1997

- **December 3, 1997*** (CTC Meeting Room)

1998

- **January 28, 1998**
- **March 25, 1998**
- **May 27, 1998**
- **July 29, 1998**
- **+September 30, 1998**
- **+December 2, 1998 ***

Subcommittee Meetings

- *February 25, 1998*
- *April 29, 1998*
- *June 24, 1998*
- *+August 26, 1998*
- *+October 28, 1998*

* Scheduled for first Wednesday of December instead of last Wednesday in November, the day before Thanksgiving).

+ Awaiting confirmation from City of Irvine



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

September 3, 1997

Mr. Joseph Joyce
BRAC Environmental Coordinator
AC/S Environment (1AU)
MCAS El Toro
P. O. Box 95001
Santa Ana, CA 92709-5001

Re: EPA Technical Comments on Draft Phase II Feasibility Study OU3-A Sites, Marine Corps
Air Station El Toro, CA, and Extension Request

Dear Mr. Joyce:

The United States Environmental Protection Agency (EPA) has reviewed the above referenced document. Please find EPA's technical comments attached to this cover letter.

In addition, EPA is hereby requesting an extension under Section 9.2 (g) of the Federal Facilities Agreement to submit its remaining comments by September 24, 1997. EPA anticipates these comments to relate mainly to ARARs.

If you have any questions, please feel free to call me at (415) 744-2210.

Sincerely,

A handwritten signature in cursive script that reads "Glenn R. Kistner".

Glenn R. Kistner
Remedial Project Manager
Federal Facilities Cleanup Branch

cc: Tayseer Mahmoud, DTSC
Larry Vitale, RWQCB
Andy Piszkin, SWDIV
John Scholfield, Bechtel

**COMMENTS ON THE DRAFT PHASE II
FEASIBILITY STUDY
OU-3A SITES
MARINE CORPS AIR STATION
EL TORO, CALIFORNIA**

GENERAL COMMENT

1. This document was difficult for even an experienced technical reviewer to follow; a reader from the general public will likely have an even more difficult time. There are many points of confusion:
 - The presence of both Attachments A, B, and C and Appendices A, B, and C is confusing.
 - The logic behind the text is nonlinear. For example, the text in Section 2 of the main text refers to the attachments, but the attachments refer back to Section 2 of the main text. This is circular logic.
 - Some tables reference themselves. Another table references a non-existent table.
 - New material is presented in the Executive Summary.
 - It is unclear how the document should be read because the main text and attachments are not complete in and of themselves. Please explain whether the attachments should be read before the main text, or whether it was intended that the main text and all three attachments be read in parallel.

Please either revise the text so that it flows linearly without circular references or provide the reader with a "road map" that explains how the document should be read.

Executive Summary

1. The summary is too extensive and should not include new information; the new information includes the comparative analysis of alternatives which should be presented in Section 5 and referenced or summarized in the Executive Summary.
2. **Figure ES-2.** The identifier at each location (i.e., 08B201) should be included and defined in the legend. Currently, only the symbol is shown.
3. **Table ES-2, p. ES-13, Footnote "d".** Please verify that the cancer risk for an adult is really "higher" than the cancer risk for a child.
4. **Tables ES-3, ES-4, and ES-5 starting on p. ES-23.** The relative terms of "high, moderate and low" need to be defined.

5. **Table ES-5, p. ES-28.** Please explain why the ratings for the long-term effectiveness are the reverse of those for that of short term-effectiveness (i.e., does the no action alternative really have a high short-term effectiveness?).

Section 1

Specific Comments

1. **Section 1.2.3.1, p. 1-20, paragraph 1, third sentence.** Please include a reference citation for the "moderate permeability" of the soil.
2. **Section 1.2.3.1, p. 1-20, paragraph 3, second sentence.** The infiltration rate is given as 5 inches per year. Please clarify whether this is a yearly average. Please discuss whether the instantaneous infiltration rate and its implications need to be determined. Also, please include the depth to groundwater in this paragraph.
3. **Section 1.2.3.1, p. 1-23, paragraph 4, first sentence.** Please specify the "other information" used to evaluate the need for further action.
4. **Section 1.3, p. 1-24, bullet 3.** Section 5 does not currently consist of "the condensed results of the comparative analysis of all of the alternatives..." as described in this bullet; this information was placed in the Executive Summary and referenced in Section 5. Section 5 should be revised to contain the information described in this bullet. (Also see Executive Summary Comment 1.)

Section 2

General Comments

1. A reader from the general public will have a great deal of trouble following the logic and flow of this document. The references to attachments and then from the attachments back to Section 2 is confusing.
2. The list of treatment technologies can be extended beyond what is described in this FS. This should be done to show that a greater range of options were considered at the beginning of the selection process even if they were eventually screened out.
3. Please clarify whether innovative technologies were considered, and whether the criterion of "commercial availability" excluded these innovative technologies.
4. Please discuss whether the risk for wind blown dust from the soil to be used as cover at the onsite landfill has been evaluated. (Receptor: onsite worker at landfill. Pathway: Inhalation, skin adsorption.)

Specific Comments

1. **Section 2.4.1, p. 2-17 Institutional controls.** Please clarify why the location and current use of the sites precludes the use of signs.
2. **Section 2.4.1, p. 2-17 Containment.** The cap descriptions should address surface controls such as grading and drainage to promote runoff and prevent run-on.

The nomenclature “vegetative cap” should reflect the fact that a soil layer will be included (i.e., Vegetative/soil Cap).

It should be mentioned that the materials for the “multilayered cap” can include soils or geosynthetics. The cost of this cap is highly dependent upon the materials used.

3. **Section 2.4.1, p. 2-18 Treatment.** Please discuss whether the following options were considered.

In-situ:

- Electrical separation.
- Pneumatic fracturing with SVE
- Hydrolysis

Ex-situ:

- UV photolysis

4. **Table 2-2, p. 2-19.** In general, define the terms of “expensive, inexpensive and very expensive”. Please clarify whether the terms are applicable relative to all the options when compared with one another across GRAs or within the categories defined by the technologies.

Please discuss why the Screening Result of “potentially applicable” is necessary, since “not applicable” is the result that precludes a technology from further consideration.

Containment: Capping. Please discuss whether vegetation can be sustained on the cap without irrigation. If not, this technology should be screened out because irrigation would contribute to infiltration into the subsurface.

5. **Table 2-2, continued p. 2-21.** Collection/Treatment, In-situ Treatment, Effectiveness. Describe the ineffective options and the goals that cannot be met.

Collection/Treatment, Ex-situ Treatment, Effectiveness. Describe the ineffective options and the goals that cannot be met.

Collection/Treatment, Ex-situ Treatment, Implementability. Describe the options that are impacted by site conditions. Describe the physical conditions that impact implementability.

6. **Table 2-2, continued p. 2-23.** Collection/Recycling, Cost. Please discuss whether cost is also dependent upon the amount of treatment required.
7. **Section 2.4.1, p. 2-27, paragraph 1.** SVE was already described as an in-situ technology and is not normally considered an ex-situ technology.
8. **Table 2-3, p. 2-31.** This table appears to be unfinished because it was not filled out. This is an important table, but it was not adequately discussed in the text.

The Preliminary Screening Codes should be fully explained so the decision to screen a process is clearly given and documented.

These options need to be screened according to Effectiveness, Implementability and Cost, but much of the screening listed is appropriate for screening of alternatives rather than the screening of technologies.

Section 5

1. The information found in the Executive Summary should be included in this section. It is inappropriate to include new information in the Executive Summary and reference it in Section 5.

Attachment A

General Comments

1. The text and the corresponding tables need to be correlated. The text should explain and help the reader through the tables, but the text necessary lacks detail to support the tables. For example, the screening of technologies shown in the Table 2-4 needs to be strengthened and supported by the text.

Specific Comments

1. **Section 1.3.2, p. A1-20, bullet 5.** Please replace the word "evapotranspiration," which includes both evaporation and transpiration from plants, with "evaporation" because there is no significant plant cover at Site 8.
2. **Table 2-3, p. A2-17.** This table references itself, which is confusing. Please replace the phrase "See Table 2-3 in this section" with a more appropriate reference or the full information.
3. **Table 2-4, p. A2-21.** It should be made clear that these options were screened according to Effectiveness, Implementability and Cost. Alternatively, revise the title to "Comparison of Treatment Technology Process Options at Site 8" or something similar.

Under the heading "Site Contaminant Treatable" it should be shown that the bioventing, soil washing and low temperature thermal desorption are effective for the treatment for PAHs. Indicate that soil washing, dehalogenation, high temperature thermal desorption and incineration are effective for PCBs.

4. **Section 2.4.2.3, p. A2-23.** Please discuss whether there are known or unknown underground utilities. The removal process should include the clearance of utilities at depth before excavation.
5. **Section 2.4.2.4, p. A2-24, paragraph 1, 3rd sentence.** Explain what the potential reuse limitations of the treated soil are, or refer to a section that discusses these limitations. Explain the factors controlling the cost range of \$300 to \$600, and clarify which cost will be assumed for the cost analysis.
6. **Section 2.4.2.5, p. A2-24, paragraph 2, 2nd sentence.** Explain the factors controlling the cost range of \$50 to \$200, and clarify which cost will be assumed for the cost analysis.
7. **Section 3.2.1.1, p. A3-3, last sentence.** Please discuss the extent to which natural biodegradation is occurring at this site, including the half-life of the risk drivers under conditions comparable to site conditions. Generally, natural degradation of PCBs is extremely slow, particularly under the aerobic conditions found in shallow soil. High molecular weight PAHs like benzo(a)pyrene do not degrade.
8. **Section 3.2.1.2, p. A3-3, paragraph 2, 2nd sentence.** Please explain why soil conditions were described using the terms "stability" and "compacted nature." Clarify whether this is based on visual observation or whether geotechnical laboratory data are available to reference and describe soil stability at this site.
9. **Section 3.2.1.2, p. A3-3, paragraph 2, 3rd sentence.** Since provisions for infiltration control in the cap design are not necessary (paragraph 2, 1st sentence), it is unclear why a gravel layer was included for drainage. Also, drainage will not occur unless grading is provided before the gravel is installed (refer to Figure 3-2, p. A3-4). It might be better to state that the gravel is a bedding layer rather than a drainage layer.
10. **Section 3.2.1.2, p. A3-3, paragraph 2, 4th sentence.** Please specify the soil type described as "bare soil" (e.g., sand, silt, or clay).
11. **Section 3.2.1.3, p. A3-5, paragraph 1, 2nd sentence.** Please clarify how the 1:1 (45° angle) slope was determined. If a 2(H):1(V) slope is assumed, the soil volume will increase.
12. **Section 3.2.1.4, p. A3-6, paragraph 3, 2nd sentence.** Please specify the metals that are anticipated to be concentrated in the ash.

13. **Section 3.2.2.1, p. A3-11, paragraph 1, last sentence.** Please discuss the extent to which natural biodegradation is occurring at this site including the half-lives of the risk drivers under conditions comparable to site conditions. Natural degradation of PCBs is extremely slow, particularly under the aerobic conditions found in shallow soil. High molecular weight PAHs like benzo(b)fluoranthene and ideno(1,2,3-c,d)pyrene also do not degrade under site conditions.
14. **Section 3.2.2.2, p. A3-11, paragraph 2, 2nd sentence.** Please explain why soil conditions were described using the phrases “stability” and “compacted nature.” Clarify whether this is based on a visual observation or whether there is geotechnical laboratory data to reference to support soil stability at this site.
15. **Section 3.2.2.2, p. A3-11, paragraph 2, 3rd sentence.** Since provisions for infiltration control in the cap design are not necessary (paragraph 2, 1st sentence), it is unclear why a gravel layer was included for drainage. Also, drainage will not occur unless grading is provided before the gravel is installed (refer to Figure 3-2, p. A3-4). It might be more appropriate to describe the gravel layer as a bedding layer rather than a drainage layer.
16. **Section 3.2.2.3, p. A3-11, paragraph 1, 3rd sentence.** Please explain how the 1:1 (45° angle) slope was determined. If a 2(H):1(V) slope is assumed, the soil volume will increase.
17. **Section 4, Short-term Effectiveness, All Alternatives.** The evaluation of the alternatives for the criterion of “Short-term Effectiveness” lacks descriptive text for: Effectiveness and reliability of protective measures; effectiveness and reliability of mitigative measures during implementation; and time until the cleanup objectives are achieved (Section 4.1.5, p. 4-4, of the main body of the report). The summary tables (e.g., Table ES-3, p. ES-23 should then show the ranking of the alternatives, according to short-term effectiveness, in the reverse order relative to each other, (i.e., Alternative 1 will be “Low” [or not applicable] and alternative 5 will be “High”).
18. **Section 4, Short-term Effectiveness, All Alternatives Except “No Action.”** Please specify the source of the investigation-derived material wastes that are mentioned in the text. Please discuss whether monitoring of airborne particulate matter will be implemented during handling of contaminated soil.
19. **Section 4, Short-term Effectiveness, All Alternatives Except “No Action.”** Please clarify whether construction barriers will be used to control the site.
20. **Section 4.2.2.7, p. A4-5, paragraph 2, 3rd sentence.** This alternative should include the operation and maintenance cost for necessary inspections. Minor repair costs should be included to ensure the 30-year service life is achieved.
21. **Section 4.2.3.5, p. A4-9, paragraph 2 and Section 4.3.3.5, p. A4-29, paragraph 2.** Because contaminated soil that is to be recycled as cover material at the landfill is

contaminated, it appears that the risk for exposure should be determined and discussed for stock-piling of the soil until it is used in the cover; exposure due to moving, placing and grading the soil during construction; and soil vulnerable to movement by wind action until the soil placed in the landfill is capped by the final cover.

22. **Section 4.2.3.7, p. A4-26, paragraph 1, 4th sentence.** This alternative should include the annual operation and maintenance cost for necessary inspections. Minor repair costs should be included to ensure the 30-year service life is achieved.
23. **Section 5.** The section makes better use of tables because the text is more relevant to the tables than in previous sections.
24. **Section 5. Short-term Effectiveness, All Alternatives.** The evaluation of the alternatives for the criterion of "Short-term Effectiveness" lacks descriptive text for effectiveness and reliability of protective measures; effectiveness and reliability of mitigative measures during implementation; and time until the cleanup objectives are achieved (Section 4.1.5, p. 4-4 of the main body of the report). The summary tables (e.g., Table 5-1, p. A5-2 should then show the ranking of the alternatives, according to short-term effectiveness, in the reverse order relative to each other, (i.e., Alternative 1 will be "Low" [or not applicable] and alternative 5 will be "High").
25. **Tables 5-1 and 5-3.** A rating method with more options than high, moderate, low should be used. This would allow differentiation between alternatives. For example, an alternative that resulted in a reduction of volume and toxicity could then be rated higher than an alternative that only reduced contaminant volume; currently both alternatives would be rated "high."
26. **Section 5.2, p. A5-5, Table 5-2 and Section 5.3, p. A5-14, Table 5-4.** This alternative should include the annual operation and maintenance cost for annual inspections. Minor repair costs should be included to ensure the 30-year service life is achieved.
27. **Sections 5.2.3 and 5.2.4, p. A5-6 and Sections 5.3.3 and 5.3.4, pp. A5-14 and A5-15.** It is unlikely that much if any natural biodegradation is occurring (see Comment 7). Please revise or delete the statements about natural biodegradation.
28. **Section 5.2.5, p. A5-7, paragraph 2.** Please discuss the source of the investigation-derived wastes. Also discuss whether monitoring of airborne particulate matter would be implemented during handling of contaminated soil.
30. **Section 5.2.5, p. A5-7, paragraph 2.** Because the soil that is to be recycled as cover material at the landfill is contaminated, it appears that the risk of exposure should be determined and discussed for stock-piling of the soil until it is used in the cover; exposure due to moving, placing and grading the soil during construction; and soil vulnerable to movement by wind action until the soil placed in the landfill is capped by the final cover.

Attachment B

General Comment

1. The text and the corresponding tables need to be correlated. The text should explain and help the reader through the tables, but lacks the necessary detail to support the tables.

Specific Comments

1. **Section 1.3.2, p. B1-8, bullet 3.** Please replace the word "evapotranspiration," which includes both evaporation and transpiration from plants, with "evaporation" because there is no significant plant cover at Site 8.
2. **Table 2-3, p. B2-15.** This table refers to Table 2-4 which was not included in Section 2 of this attachment. To parallel other attachments, Table 2-4 should be used to justify screening processes to select the representative option for treatment. Other comments about similar tables in other attachments would also apply to this table.
3. **Section 2.4.2.3, p. B2-12.** Please discuss whether there are known or unknown underground utilities. The removal process should include the clearance of utilities at depth before excavation.
4. **Section 2.4.2.4, p. B2-17, paragraph 1, 6th sentence.** Explain what the potential reuse limitations of the treated soil are, or refer to a section that discusses these limitations. Explain the factors controlling the cost range of \$200 to \$600, and clarify which cost will be assumed for the cost analysis.
5. **Section 3.1, p. B3-1, last sentence.** Please discuss the extent to which natural biodegradation is occurring. Generally, natural degradation of PCBs is extremely slow particularly under the aerobic conditions found in shallow soil.
6. **Section 3.2, p. B3-1, paragraph 2, 2nd sentence.** Please explain why soil conditions were described using the phrases "stability" and "compacted nature." Clarify whether this is based on a visual observation or whether geotechnical laboratory data are available to reference to describe soil stability at this site.
7. **Section 3.2, p. B3-1, paragraph 2, 3rd sentence.** Since provisions for infiltration control in the cap design are not necessary (paragraph 2, 1st sentence), it is unclear why a gravel layer was included for drainage. Also, drainage will not occur unless grading is provided before the gravel is installed (refer to Figure 3-2, p. B3-3). It might be more appropriate to describe the gravel layer as a bedding layer rather than a drainage layer.
8. **Section 3.2, p. B3-1, paragraph 2, 4th sentence.** Please include the specific soil type that was described as "bare soil" (e.g., sand, silt, or clay).

9. **Section 3.3, p. B3-4, paragraph 2.** A discussion of embankment slopes for an excavation depth of 6 ft should be included.
10. **Section 3.4, p. B3-5, paragraph 3, 2nd sentence.** Please specify the metals that are anticipated to be concentrated in the ash.
11. **Section 4, Short-term Effectiveness, All Alternatives.** The evaluation of the alternatives according to the criterion of "Short-term Effectiveness" lacks descriptive text for: Effectiveness and reliability of protective measures; effectiveness and reliability of mitigative measures during implementation; and time until the cleanup objectives are achieved (Section 4.1.5, p. 4-4, of the main body of the report). The summary tables (e.g., Table ES-3, p. ES-23 should then show the ranking of the alternatives, according to short-term effectiveness, in the reverse order relative to each other, (i.e., Alternative 1 will be "Low" [or not applicable] and alternative 5 will be "High").
12. **Section 4, Short-term Effectiveness, All Alternatives Except "No Action."** Please specify the source of the investigation-derived material wastes that are mentioned in the text. Please discuss whether monitoring of airborne particulate matter will be implemented during handling of contaminated soil.
13. **Section 4, Short-term Effectiveness, All Alternatives Except "No Action."** Please clarify whether construction barriers will be used to control the site.
14. **Section 4.3.7, p. B4-5, paragraph 2, 3rd sentence.** This alternative should include the annual operation and maintenance cost for necessary inspections. Minor repair costs should be included to ensure the 30-year service life is achieved.
15. **Section 4.4.5, p. A4-8, paragraph 2.** Because the soil that is to be recycled as cover material at the landfill is contaminated, it appears that the risk for exposure should be determined and discussed for stock-piling of the soil until it is used in the cover; exposure due to moving, placing and grading the soil during construction; and soil vulnerable to movement by wind action until the soil placed in the landfill is capped by the final cover.
16. **Section 5.** The section makes better use of the tables because the text is more relevant to the tables than in previous sections.
17. **Section 5, Short-term Effectiveness, All Alternatives.** The evaluation of the alternatives for the criterion of "Short-term Effectiveness" lacks descriptive text for effectiveness and reliability of protective measures; effectiveness and reliability of mitigative measures during implementation; and time until the cleanup objectives are achieved (Section 4.1.5, p. 4-4 of the main body of the report). The summary tables (e.g., Table 5-1, p. B5-2) should then show the ranking of the alternatives, according to short-term effectiveness, in the reverse order relative to each other, (i.e., Alternative 1 will be "Low" [or not applicable] and alternative 5 will be "High").

18. **Table 5-1.** A rating method with more options than high, moderate, low should be used. This would allow differentiation between alternatives. For example, an alternative that resulted in a reduction of volume and toxicity could then be rated higher than an alternative that only reduced contaminant volume; currently both alternatives would be rated "high."
19. **Sections 5.4 and 5.5.** It is unlikely that much, if any, natural biodegradation is occurring in soil at Site 11 (see Comment 5). Please revise or delete the statements about natural biodegradation.
20. **Section 5, Table 5-2, p. B5-5.** This alternative should include an annual operation and maintenance cost for annual inspections. Minor repair costs should be included to ensure the 30-year service life is achieved.
21. **Section 5.6, p. B5-7, paragraph 2.** Please discuss the source of the investigation-derived wastes. Also discuss whether monitoring of airborne particulate matter would be implemented during handling of contaminated soil.
22. **Section 5.6, p. B5-7, paragraph 2.** Because the soil that is to be recycled as cover material at the landfill is contaminated, it appears that the risk of exposure should be determined and discussed for stock-piling of the soil until it is used in the cover; exposure due to moving, placing and grading the soil during construction; and soil vulnerable to movement by wind action until the soil placed in the landfill is capped by the final cover.

Attachment C

General Comments

1. The text and the corresponding tables need to be correlated. The text should explain and help the reader through the tables, but the text lacks the necessary detail to support the tables. For example, the screening of technologies shown in Table 2-4 needs to be strengthened and supported by the text.

Specific Comments

1. **Section 1.3.2, p. C1-27, bullet 4.** Please verify that this information is correct for Unit 3 at Site 12. It is likely that evaporation and infiltration along the drainage ditch are higher than at most of the other sites at El Toro.
2. **Table 2-3, p. C2-19.** This table is confusing because some entries say "see Table 2-3," but this is Table 2-3. Please replace this statement with a more appropriate reference or include the full information.

4. **Table 2-4, p. C2-21.** It should be made clear that these options were screened according to Effectiveness, Implementability and Cost. Alternatively, revise the title to "Comparison of Treatment Technology Process Options at Site 8 or something similar.

Under the heading "Site Contaminant Treatable" include footnotes to the effect that bioventing, soil washing and low temperature thermal desorption are effective for the treatment for PAHs. Indicate soil washing, dehalogenation, high temperature thermal desorption and incineration are effective for PCBs.

4. **Section 2.4.2.3, p. C2-16.** Please discuss whether there are known or unknown underground utilities. The removal process should include the clearance of utilities at depth before excavation.
5. **Section 2.4.2.4, p. C2-22, paragraph 1, 7th sentence.** Explain what the potential reuse limitations of the treated soil are, or refer to a section that discusses these limitations. Explain the factors controlling the cost range of \$300 to \$600, and clarify which cost will be assumed for the cost analysis.
6. **Section 2.4.2.5, p. C2-23, paragraph 2, 2nd sentence.** Explain the factors controlling the cost range of \$50 to \$200, and clarify which cost will be assumed for the cost analysis.
7. **Section 3.1, p. C3-1, last sentence.** Please discuss the extent to which natural biodegradation is occurring, including the half-life for degradation under conditions comparable to those found at the site for each of the contaminant groups or for the individual contaminants found at this site. Generally, natural degradation of PCBs is extremely slow particularly under the aerobic conditions found in shallow soil. High molecular weight PAHs like benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and fluoranthene also do not degrade. 4,4-DDT and Dieldrin degrade only with direct exposure to sunlight (photolysis) which effects only the top fraction of a millimeter.
8. **Section 3.2, p. C3-1, paragraph 1, 1st sentence.** Please clarify whether irrigation is required to support the vegetation. If irrigation is necessary, infiltration may become more significant.
9. **Section 3.3, p. C3-5, paragraph 1, 1st sentence.** Please explain how the 1:1 (45° angle) slope was determined. If a 2(H):1(V) slope is assumed, the soil volume will increase.
10. **Section 3.4, p. C3-6, paragraph 2, and Section 3.5, p. C3-8, paragraph 2, 1st sentence.** A discussion of embankment slopes for the excavation should be included.
11. **Section 3.4, p. C3-8, paragraph 2, 2nd sentence.** Please specify the metals that are anticipated to be concentrated in the ash.

12. **Section 4, Short-term Effectiveness, All Alternatives.** The evaluation of the alternatives for the criterion of "Short-term Effectiveness" lacks descriptive text for: Effectiveness and reliability of protective measures; effectiveness and reliability of mitigative measures during implementation; and time until the cleanup objectives are achieved (Section 4.1.5, p. 4-4, of the main body of the report). The summary tables (e.g., Table ES-3, p. ES-23 should then show the ranking of the alternatives, according to short-term effectiveness, in the reverse order relative to each other, (i.e., Alternative 1 will be "Low" [or not applicable] and alternative 5 will be "High").
13. **Section 4, Short-term Effectiveness, All Alternatives Except "No Action."** Please specify the source of the investigation-derived material wastes that are mentioned in the text. Please discuss whether monitoring of airborne particulate matter will be implemented during handling of contaminated soil.
14. **Section 4, Short-term Effectiveness, All Alternatives Except "No Action."** Please clarify whether construction barriers will be used to control the site.
16. **Section 4.4.5, p. C4-9, paragraph 2.** Because the soil that is to be recycled as cover material at the landfill is contaminated, it appears that the risk for exposure should be determined and discussed for stock-piling of the soil until it is used in the cover; exposure due to moving, placing and grading the soil during construction; and soil vulnerable to movement by wind action until the soil placed in the landfill is capped by the final cover.
17. **Section 5.** The section makes better use of the tables because the text is more relevant to the tables than in previous sections.
18. **Section 5, Short-term Effectiveness, All Alternatives.** The evaluation of the alternatives for the criterion of "Short-term Effectiveness" lacks descriptive text for effectiveness and reliability of protective measures; effectiveness and reliability of mitigative measures during implementation; and time until the cleanup objectives are achieved (Section 4.1.5, p. 4-4 of the main body of the report). The summary tables (e.g., Table 5-1, p. C5-2) should then show the ranking of the alternatives, according to short-term effectiveness, in the reverse order relative to each other, (i.e., Alternative 1 will be "Low" [or not applicable] and alternative 5 will be "High").
19. **Table 5-1.** A rating method with more options than high, moderate, low should be used. This would allow differentiation between alternatives. For example, an alternative that resulted in a reduction of volume and toxicity could then be rated higher than an alternative that only reduced contaminant volume; currently both alternatives would be rated "high."
20. **Sections 5.4 and 5.5, p. C5-6.** It is unlikely that much, if any, natural biodegradation is occurring in Unit 3 soil (see Comment 7). Please revise or delete the statements about natural biodegradation.

21. **Section 5.6, p. C5-7, paragraph 2.** Please discuss the source of the investigation-derived wastes. Also discuss whether monitoring of airborne particulate matter would be implemented during handling of contaminated soil.
22. **Section 5.6, p. C5-7, paragraph 2.** Because the soil that is to be recycled as cover material at the landfill is contaminated, the risk of exposure should be determined and discussed for stock-piling of the soil until it is used in the cover; exposure due to moving, placing and grading the soil during construction; and soil vulnerable to movement by wind action until the soil placed in the landfill is capped by the final cover.

Appendix C - Cost Estimates

General Comments

1. A cost for maintenance of the asphalt cap needs to be estimated and included even if RACER will not provide it (Section C4, p. C4-1, Assumptions).
2. Unit costs should be shown in all tables.
3. The basis for the contractor's rates for the categories of "indirect, overhead and profit" should be given.
4. Please clarify whether the cost of professional labor was based on hours or a percentage of other costs.
5. Please specify the quantities for sampling and analysis.
6. Please clarify whether cost estimates are precise to the nearest \$100 or whether they should be rounded to the nearest \$1,000.



August 7, 1997



24
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Pete Wilson
Governor

James M. Strock
Secretary for
Environmental
Protection

**COMMENTS ON ROUND 5 GROUNDWATER MONITORING REPORT,
MARINE CORPS AIR STATION (MCAS) EL TORO**

Dear Mr. Joyce:

The Department of Toxic Substances Control (DTSC) has completed the review of the above subject report dated June 30, 1997 and received by us on July 9, 1997. The reports, prepared by CDM Federal Programs Corporation, present the results of the March 1997 groundwater sampling round from a network of 181 monitoring wells/monitoring ports conducted at MCAS El Toro.

This letter is to transmit DTSC's comments on the document. If you have any questions, please call me at (562) 590-4891.

Sincerely,

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

Enclosure

cc: Mr. Glenn Kistner, SFD-8-2
Remedial Project Manager
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Mr. Joseph Joyce
August 7, 1997
Page 2

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EPA

Department of
Toxic Substances
Control

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Long Beach, CA
562-4444

MEMORANDUM



Pete Wilson
~~Governor~~

James M. Strock
Secretary for
Environmental
Protection

TO: Mr. Tayseer Mahmoud
Office of Military Facilities
Region 4

FROM: Sherrill Beard, CHG *Sherrill Beard*
Geologic Services Unit
Region 4

DATE: July 31, 1997

SUBJECT: Comments on "Groundwater Monitoring Report March 1997
Sampling Round, Volumes I and II, Marine Corps Air Station El
Toro, California"

Introduction

As requested by the Office of Military Facilities, the Geologic Services Unit (GSU) of the Department of Toxic Substances Control (DTSC) has reviewed the document entitled "Groundwater Monitoring Report March 1997 Sampling Round, Volumes I and II, Marine Corps Air Station (MCAS) El Toro, California" (the Report), dated February 1997. The document was prepared by CDM Federal Programs Corporation (CDM) for Southwest Division Naval Facilities Engineering Command (SWDIV).

The Report presents the results from the March 1997 groundwater sampling event, fulfilling the stated objectives. However, response from the SWDIV concerning issues outlined in the DTSC letter dated April 9, 1997 containing comments on the November-December 1996 quarterly groundwater monitoring report have not been addressed. GSU recommends the letter be forwarded to Bechtel National, Inc. (Bechtel) with the understanding the issues will be resolved during the development of the long-term groundwater monitoring program.

Besides the issues raised in DTSC's April 9, 1997 letter, the primary concern is the questionable quality in which the groundwater samples were collected, subsequently, the quality of the resultant analytical data may be questionable. The first concern is the subject of low-flow purging, the second is



Mr. Tayseer Mahmoud

July 31, 1997

Page 2

availability of trained field personnel that are able to evaluate the validity of field data as it is being collected, and third, the assumption that all prior groundwater data are acceptable. Also, GSU strongly recommends the development of a reporting format to easily evaluate contaminant plumes and within well trends.

Low-flow Sampling

The low-flow method is a valid and recommended technique for collecting groundwater samples. However, the field procedures conducted during the sampling event are not acceptable. All wells were purged and sampled at 0.5 gallon per minute (gpm or 1892 ml/min) discharge rate. Additionally, documentation does not exist to support that water levels were monitored except for the initial and final measurements. Recommended rates used for purging and sampling are typically 100-500 ml/min, depending on site-specific hydrogeology (each well is unique with regard to an optimal purging rate). In addition, close monitoring of the water level in the well should be performed during purging to ensure that little or no drawdown or mixing of stagnant and formation waters occur. Also, six of the 32 wells sampled using the low-flow technique had turbidity values of 50 NTUs or higher. One of the primary benefits from using the low-flow method is to decrease turbidity in groundwater samples. The elevated turbidity units most likely are a result of high flow pump rates.

There is a concern the pump rate is too high and the samples collected are a mixture of water drawn down from the well column into the sampling zone and the formation water. Based on the field parameters and the medium to high range of hydraulic conductivities (e.g., silty sand and sand) of some of the intervals adjacent to the screened interval, the likelihood of collecting a "pure" formation groundwater sample is low. The information provided on the well purging and sampling logs indicate the water levels could be lowering in the wells during the purging process but are not being detected due to infrequent monitoring. Because of medium to high hydraulic conductivities, the water levels may recover before the final measurements are collected, giving the appearance that the aquifer was not stressed.

Personnel Training

It was recommended in the DTSC's April 9, 1997 letter that field teams should receive training with regard to the evaluation of field parameters during sample collection. The field team must be able to make sense of the field data they are collecting and be able to troubleshoot simple field problems. This type of training would provide insurance that good, usable field data is collected, and

therefore providing the most representative aquifer samples to the laboratory.

Quality Control While Collecting Groundwater Samples

This section addresses specific wells to highlight the quality control problems occurring during sample events. It is the hope of GSU that this will show both SWDIV and Bechtel the need to allot time for assessment of field data quality prior to interpretation of the analytical data (e.g., trend analysis). Since this process was not performed thoroughly during the collection of groundwater samples, it should now be completed. This process must be done prior to data interpretation so that invalid data is not used in the trend analysis and then later rejected. GSU has only evaluated a portion of the well purging and sampling logs. Attached are some examples.

Example 1 - Monitoring Well 01MW101

I) The average purge rate is recorded at 9.5 gpm, yet the time pumped and the volume purged averages to about 1.7 gpm.

II) It is inferred from the sampling log that the well was being pumped dry and the pump rate was decreased from 9.5 gpm to .05 gpm, however during the November-December 1996 sampling event the well was able to maintain a purge rate of 8.25 gpm. This type of information should be evaluated and action should be taken, such as redevelopment of the monitoring well.

III) The total volume for one casing volume was calculated to be 58.15 gallons, yet the total volume purged was 52 gallons. Less than one casing volume was purged from this well prior to sampling. The probability that a representative sample was collected from this monitoring well is low. Most likely the sample was stagnated well water or a mixture of well water and aquifer water. Additionally, the TCE concentration decreased from 18.0 ug/l to 0.9J ug/l from the November-December 1996 to the March 1997 sampling event. Given the manner in which the groundwater was collected it is not possible to interpret this data as a decrease in the TCE concentration.

Example 2 - Monitoring Well 01MW102

I) Dissolved oxygen values are never negative. This type of reporting leads the reviewer to question the other dissolved oxygen values.

Mr. Tayseer Mahmoud
July 31, 1997
Page 4

II) A turbidity value of 239 NTUs is normally unacceptable. This well may need to be redeveloped. Additionally, metals data for this well is erratic when compared quarterly, especially with regard to aluminum, chromium, iron, manganese, and nickel.

Example 3 - Monitoring Well 02DGMW59

I) It is unclear from this sampling log if the stagnate well water is being sampled or if the formation water is being sampled. Without close monitoring of the water level during purging and sampling it is difficult to determine where the groundwater sample is originating.

GSU only evaluated a few of the sampling logs, however, the other logs were briefly surveyed and numerous other discrepancies were noted. It is the hope of GSU that Bechtel can evaluate the March 1997 well purging and sampling logs and compare them with logs in prior quarterly reports, then compare those data with the analytical data.

If you have any questions or need clarification please call me at CALNET 8-635-5528 or (562) 590-5528.

Attachments

Reviewed by: Frank Gonzales, RG
Geologic Services Unit

cc: Karen Thomas Baker, CEG, CHG
Geologic Services Unit
Unit Chief

File

Example 1

1997

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206-009 TEAM: Non-dedicated Pump (X) Dedicated Pump ()

PURGING LOG

NO.: 01mw101 SAMPLE NO.: 01mw101-003
 START DATE: 3/13/97 (Time: 1030) END DATE: 3/13/97 (Time: 1105)
 CASING DIAMETER: 2" () 4" (X) 5" () WEATHER: Clear TEMP: 73°F
 PERSONNEL'S NAME(S): Robert Paul Smith Philip McHany
 REFERENCE POINT OF DEPTH MEASUREMENT: TTX

READING: -0 ORIG. DTW: 64.9 FINAL DTW: 140
 PURGE METHOD: Packers () Multiple Port () Teflon Bailer () Submersible Grundfos Pump (X)

MEASURED ORIGINAL CASING 4" - 0.56
 VOLUME 5" - 0.93
 6" - 1.50

3 * 64.9 = 88.1 * 58.15 Gal./Csg. Vol. * 3 Csg. Vol. = 174.4 Gal.

IS GROUNDWATER CONTAINERIZED? YES AVERAGE PURGE RATE: 9.5 gpm begin

TOTAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (°C)	pH (s.p.)	COND. (umhos/ml)	TURB. (NTU)	DISSOLVED OXYGEN (mg/L) (94)	REDOX (mV)	COMMENT
30	0								7/11/97 Pump set at 150 feet 150
1:35	3	30	22.13	8.18	898.0	13.0	-0.5	144.8	
1:39	9	45	22.15	8.12	968	22.5	-0.6	140	
1:45	15	50	22.20	8.08	1035	9.2	0.86	136.4	Rate changed to 0.8 GPM
1:50	20	51	22.06	8.04	1070	10.1	1.75	128.2	Rate changed to 0.2 GPM
2:00	30	52	22.07	8.02	1076	8.9	1.95	124.3	Rate changed to 0.1 GPM
									Rate has changed to 0.05 GPM
									Since parameters were stable, and well is about to go dry will go ahead and sample
	1105	Collect							01mw101-003

Contamination Survey () Field Blanks ()

SAMPLING LOG

PURGING METHOD: Packer () Bailer () Portable Pump (X)
 ANALYSES: VOA (X) SVOA () Filtered Metals (X) Chr VI (X)
 TPH-Gasoline () TPH-Diesel () Pesticides () Herbicides () Explosives (X)
 Gross Alpha/Beta () General Chemistry (X) Treatability Parameters ()
 COMMENT: Initial Meter Reading: 8946 Purge Rate: 0.05 gpm min. Interval
 Final Meter Reading: 8951
 Number of Containers: 4

Example 1

1996

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG									
PROJECT NO.: 6206 - 009					TEAM: Non-dedicated Pump <input checked="" type="checkbox"/> Dedicated Pump ()				
PURGING LOG									
WELL NO.: 01MW101					SAMPLE NO.: 01MW101-002				
START (Date): 11/18/96 (Time): ^{ET 11:17} 10:17					END (Date): 11/18/96 (Time):				
WELL CASING DIAMETER: 2" () 4" <input checked="" type="checkbox"/> 5" ()					WEATHER: Sunny 75°F				
FIELD PERSONNEL'S NAME(S): Brian Trinh (CDM), Philip McKay (Water Development)									
REFERENCE POINT OF DEPTH MEASUREMENT: TOC Black mark									
OVM READING: 0			ORIG. DTW: 64.71			FINAL DTW: 129.82			
PURGE METHOD: Packers () Multiple Port () Teflon Bailer () Submersible Grundfos Pump <input checked="" type="checkbox"/>									
MEASURED ORIGINAL CASING <u>4" - 0.66</u>									
WELL TD DTW VOLUME 5" - 0.93									
6" - 1.50									
153 · <u>64.71</u> = <u>88.29</u> x <u>58.3</u> Gal./Csg Vol. x 3 Csg. Vol. = <u>175</u> Gal.									
PURGE WATER CONTAINERIZED? YES					AVERAGE PURGE RATE: gpm				
ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (°F) (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN (%)(mg/l)	REDOX (mV)	COMMENT
1019	2	16.5	22.89	8.52	0.746	235.6	44.2	25.3	
1021	4	33.0	23.02	8.52	0.746	<u>7.9</u>	39.1	24.2	
1023	6	49.5	23.29	8.47	0.752	9.1	32.8	23.7	Purge rate dropped to 0.06 gpm
1025	8	66.0	23.44	8.37	0.760	25.5	29.3	24.9	
1028	11	90.75	23.70	8.32	0.763	74.8	24.3	23.1	
1030	13	107.25	23.83	8.33	0.764	111.3	23.5	22.9	
1032	15	123.75	24.05	8.31	0.766	129.5	22.3	23.3	
1034	17	140.25	24.24	8.27	0.769	149.4	25.4	24.7	
1036	19	156.75	24.37	8.23	0.769	129.1	27.2	26.3	
1039	22	183.0							
Air Entrainment Survey ()					Field Blanks ()				
SAMPLING LOG									
SAMPLING METHOD: Packer () Bailer () Portable Pump <input checked="" type="checkbox"/>									
LAB ANALYSES: VOA <input checked="" type="checkbox"/> SVOA <input checked="" type="checkbox"/> Filtered Metals <input checked="" type="checkbox"/>									
TPH-Gasoline () TPH-Diesel () Pesticides () Herbicides ()									
Gross Alpha/Beta <input checked="" type="checkbox"/> General Chemistry <input checked="" type="checkbox"/> Treatability Parameters ()									
COMMENT: Initial meter reading: 32.044 Purge rate: 0.25 gpm 2.1 min interval									
Final meter reading: 32.093									
Number of containers: 8 bottles collected									
Lock is cut.									

Example 2

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206-009 TEAM: Non-dedicated Pump () Dedicated Pump ()

PURGING LOG

WELL NO.: 01 MW 102 SAMPLE NO.: 01 MW 102-003
 START Date: 3/13/97 (Time): END Date: 3/13/97 (Time): 1308
 WELL CASING DIAMETER: 2" () 4" (X) 5" () WEATHER: Clear TEMP.: 73°F
 FIELD PERSONNEL'S NAME(S): Robert Paul Smit Philip Melan
 REFERENCE POINT OF DEPTH MEASUREMENT: TOC

METER READING: ORIG. DTW: 107.50 FINAL DTW: 125

PURGE METHOD: Packers () Multiple Port () Teflon Bailer () Submersible Grundfos Pump ()

MEASURED	ORIGINAL	CASING	4" - 0.66
WELL TD	DTW	VOLUME	5" - 0.93
			6" - 1.50

40 · 107.50 = 32.5 x 21.45 Gal./Csg Vol. x 3 Csg. Vol. = 64.35 Gal.

PURGE WATER CONTAINERIZED? YES AVERAGE PURGE RATE: gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN (mg/L) (%)	REDOX (mV)	COMMENT
1210	0								
1211	1	7	22.11	7.17	1430	443	-2.06	113.3	
1212	2	14	21.97	7.16	1452	288	-1.34	94.3	rate down to 2 1/2 GPM
1216	6	34	22.55	7.06	1412	203	0.00	9.0	3/4
1220	10	42	23.51	7.13	1370	140	3.70	57.2	rate down to 1 GPM
1223	13	45	24.10	7.13	1337	49.4	2.42	73.8	
226	16	48	24.53	7.13	1331	69.6	4.38	82.9	
229	19	51	24.89	7.13	1341	240	4.33	89.5	rate changed to 0.3 GPM
239	29	54	25.68	7.16	1372	247	5.62	98.1	
249	39	57	26.25	7.15	1401	273	5.17	103.1	
300	50	60	26.65	7.14	1451	239	5.16	102.2	
all parameters are stable									
1308 Collect 01 MW 102-003									

Entrainment Survey () Field Blanks ()

SAMPLING LOG

SAMPLING METHOD: Packer () Baller () Portable Pump ()
 ANALYSES: VOA (X) SVOA () Filtered Metals (X) Chr VI (X)
 TPH-Gasoline () TPH-Diesel () Pesticides () Herbicides () Explosives (X)
 Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters ()

COMMENT: Initial Meter Reading: 89525 Purge Rate: 0.3 gpm min. interval
 Final Meter Reading: 89585
 Number of Containers: 7

Example 3

MARINE CORPS EL TORO GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

PROJECT NO.: 6206-009 TEAM: Non-dedicated Pump () Dedicated Pump (X)

PURGING LOG

WELL NO.: 02DGMWS9 SAMPLE NO.: 02DGMWS9-003
 START (Date): 3/26/97 (Time): 1016 END (Date): 3/26/97 (Time): 1035
 WELL CASING DIAMETER: 2" () 4" (X) 5" () WEATHER: Clear, calm TEMP.: 75°F
 FIELD PERSONNEL'S NAME(S): S. Mathis

REFERENCE POINT OF DEPTH MEASUREMENT: TOC
 METER READING: ———— ORIG. DTW: 46.20 FINAL DTW: 46.84

PURGE METHOD: Packers () Multiple Port () Teflon Heiler () Submersible Grundfos Pump (X)
 MEASURED ORIGINAL CASING 4" - 0.66
 WELL TD DTW VOLUME 5" - 0.93 6" - 1.50
See below for low-flow purge volume calculation.

94 × ———— Gal./Csg. Vol. × 3 Csg. Vol. = 6.03 Gal.

PURGE WATER CONTAINERIZED? YES AVERAGE PURGE RATE: 0.5 gpm

ACTUAL TIME	ELAPSED TIME	VOLUME PURGED (gal.)	TEMP. (°C)	pH (s.a.)	COND. (umhos/m)	TURB. (NTU)	DISSOLVED OXYGEN (mg/L)	REDOX (mV)	COMMENT
1019	3	1.5	17.05	6.88	1170	29.5	2.73	-8.5	Pump set at 85 feet
1022	6	3	17.34	7.02	1169	29.5	2.68	-9.1	
1024	8	4	17.66	7.10	1167	29.8	2.67	-9.0	
1026	10	5	17.90	7.12	1175	30.3	2.64	-7.6	
1028	12	6	17.64	7.11	1174	32.1	2.72	-8.5	

Initial Entrainment Survey () Field Blanks ()

SAMPLING LOG

SAMPLING METHOD: Packer () Baller () Portable Pump ()
 LAB ANALYSES: VOA (X) SVOA (X) Filtered Metals (X) Chr VI (X)
 TPH-Gasoline () TPH-Diesel () Pesticides (X) Herbicides (X)
 Gross Alpha/Beta (X) General Chemistry (X) Treatability Parameters (X)

COMMENT: Initial Meter Reading: Purge Rate: gpm min. interval
 Final Meter Reading:
 Number of Containers:

Purge vol = ((0.03125² × 3.14 × 7.48 × 85) ÷ 0.06) × 3 = 6.03 gal - TOTAL VOLUME PURGED = 9.5 gal



August 26, 1997



al/EPA

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Toxic Substances
Control

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U.S. Marine Corps Air Station - El Toro
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Pete Wilson
Governor

James M. Strock
Secretary for
Environmental
Protection

**COMMENTS ON DRAFT PHASE II FEASIBILITY STUDY REPORT FOR
OPERABLE UNIT (OU)-3A, MARINE CORPS AIR STATION (MCAS) EI TORO**

Dear Mr. Joyce:

The Department of Toxic Substances Control (DTSC) has completed the review of the above subject document dated July 1997, prepared by Bechtel National, Inc. The report presents the results of a feasibility study (FS) conducted to identify and evaluate potential remedial action alternatives for Units, 1, 2, 3, 4, and 5 of Site 8 (Defense Reutilization and Marketing Office Storage Yard), Units 1 and 2 of Site 11 (Transformer Storage Yard), and Unit 3 of Site 12 (Sludge Drying Beds) at MCAS El Toro.

This letter is to transmit the enclosed DTSC comments on the report. 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 (562) 590-4891.

Sincerely,

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

Enclosure

cc: Mr. Glenn Kistner, SFD-8-2
Remedial Project Manager
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Federal Facilities Cleanup Office
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Mr. Joseph Joyce

August 26, 1997

Page 2

cc: Mr. Lawrence Vitale
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DEPARTMENT OF TOXIC SUBSTANCES CONTROL
Comments on
Draft Phase II Feasibility Study Report for OU-3A
Marine Corps Air Station-El Toro
Dated July 1997

GENERAL COMMENTS

1. Quantification of Reduction of Risk

The Department of the Navy (DON) used the correct methods for calculating Preliminary Remediation Goals, as shown in Appendix B. Please express risk reduction quantitatively for each alternative. If an alternative renders the pathway(s) of exposure incomplete, DON may state that risk would be eliminated by this alternative. This information would be incorporated into the text of Attachments A, B, and C and into the summary tables at the end of each attachment.

2. Risk Management Range

DON correctly quoted the National Oil and Hazardous Waste Contingency Plan in stating that the acceptable range for cancer risk is 1×10^{-6} to 1×10^{-4} . DTSC takes 1×10^{-6} to be the point of departure for acceptable cancer risk and refers to 1×10^{-6} to 1×10^{-4} the "risk management range". If a preferred alternative would leave a residual risk in this range, then DON should present some justification as to why such a residual risk can be managed acceptably under this alternative.

SPECIFIC COMMENTS

1. Executive Summary, Background, Figure ES-1

Show the names of OU-3A sites covered in this Feasibility Study (FS) on Figure ES-1.

2. Executive Summary, Site 11 Units 1 and 2, page ES-27

Reference to Units 1 through 4 in the text is a typographical error. The correct reference is Units 1 and 2.

3. Attachment A, Site 8, Table 2-3, page A2-17

Provide the correct reference where information can be found to evaluate the effectiveness, implementability and cost of in situ treatment.

4. Attachment A, Site 8, Table 2-4, page A2-21

Revise the table to list the site specific chemicals under Site Contaminant Treatable that can be treated using each treatment technology.

The above comment also applies to Attachments B, Site 11 and Attachment C, Site 12.

5. Attachment A, Site 8, Sections 3.2.1.2 and 3.2.2.2, Alternative 2, Capping Plus Restrictive Covenants, pages A3-3 and A3-11

This section should be more specific regarding the land use restrictions proposed for the site. Will Alternative 2 allow the future land owner to use the area for parking or for other similar uses? Please specify the anticipated types of compatible uses that will be allowed, or state whether access will be prohibited to “control potential damage or destruction of the cap.”

I recommend that last sentence in this section be revised to:

“The restrictive covenant(s) would ~~govern~~ specify the conditions under which the property could ~~continued to not~~ be used in the future, ~~particularly~~. For example, land use restrictions would prohibit activities that involved removal of the asphalt pavement and trenching or excavation of the contaminated soil beneath the cap.”

The above comments also apply to Attachments B, Site 11, Alternative 2, Section 3.2.

6. Attachment A, Site 8, Section 3.2.1.3 and 3.2.2.3, Alternative 3, page A3-5 and page A3-12

The text states that confirmation sampling analyte concentrations of the stockpiled soil should not exceed toxicity characteristic leaching procedure (TCLP), solubility threshold limit concentration (STLC), or total threshold limit concentration (TTLC). Please revise the text to state that concentrations should not exceed all three criteria TCLP, STLC, and TTLC.

The FS should include revisions handling and disposing portions of the stockpiled soil if it exceeds the threshold concentrations. The cost estimates for transportation and off-

Station disposal should be added in Section 4, Detailed Analysis of Alternatives.

The above comments also apply to Attachments B, Site 11 and Attachment C, Site 12, Section 3.3.

7. Attachment A, Site 8, Alternatives 3, 4, and 5

These alternatives involve the excavation of contaminated soils to a planned depth and sampling the excavated area to confirm that all the contaminated soil exceeding risk-based concentrations (RBC's) has been removed. Table 2-1, page A2-8 presents the calculated contaminant-specific RBC's for both residential and industrial land use. The FS should state which cleanup level you plan to achieve. Also, please provide details of the restrictive covenants if you are proposing to clean the site using industrial RBCs.

The above comments also apply to Attachments B, Site 11 and Attachment C, Site 12.

8. Attachment C, Site 12, Figure 2-1, page C2-11

Show the cross section locations A-A', B-B', C-C', etc., on this figure.

9. Attachment C, Site 12, Sections 3.2, Alternative 2, Capping Plus Restrictive Covenants, page C3-1

I recommend that last sentence in this section be revised to:

"The restrictive covenant(s) would govern specify the conditions under which the property could ~~continued to not~~ be used in the future, particularly. For example, land use restrictions would prohibit activities that involved trenching or excavation of the cap or the contaminated soil beneath the cap."

10. Appendix A, Section A4, Action-Specific Applicable or Relevant and Appropriate Requirements

Please add guidance to be considered (TBC), the California Base Closure Environmental Committee document titled Treatment Technologies Application Matrix for Base Closure Activities, November 1994.