

Installation Restoration Program

Public Information Materials

12/2/98

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

Materials/Handouts Include:

- RAB Meeting Agenda/Public Notice -12/2/98 RAB meeting.
- RAB Meeting Minutes - 9/30/98 RAB meeting (*Minutes approved at the 12/2/98 meeting*).
- Navy and Marine Corps - Internet Access, Environmental Web Sites.
- DoD - Environmental Base Realignment and Closure Web Site Publications List.
- MCAS El Toro Installation Restoration Program Mailing List Coupon.
- Letter dated Dec. 1, 1998 from Joseph Joyce, BEC MCAS El Toro/RAB Co-Chair to Greg Hurley, RAB Community Co-Chair, with four enclosures.
- Assembly of Central SVE Treatment System at Site 24 VOC Source Area, MCAS El Toro; includes photos, map, and diagram.
- Underground Storage Tank Program Map, MCAS El Toro; includes table with Regulatory Closures of Underground Storage Tank Sites with Calendar Year Totals for 1995, 1996, 1997, 1998, and total closures (285) as of October 1998.
- Oil Water Separator Map, MCAS El Toro, dated 12/24/97.
- *Presentation* - MCAS El Toro Records of Decision, 12/2/98 RAB Meeting; Andy Piszkin, Lead Remedial Project Manager (RPM), Southwest Division Naval Facilities Engineering Command (SWDIV).
- *Presentation* - MCAS El Toro Underground Storage Tank Program Summary, Restoration Advisory Board, 12/2/98 Meeting; Andy Piszkin, Lead RPM, SWDIV.
- *Presentation* - EPA Presentation/Discussion on Perchlorate; Kevin Mayer, U.S. EPA Region IX.

Agency Comments - U.S. Environmental Protection Agency (U.S. EPA)

- U.S. EPA Comments on MCAS El Toro Federal Facilities Agreement (FFA) Extension Request, (letter dated November 10, 1998).
- U.S. EPA Concerns and Recommendation on Proposed Remedy for Sites 3 & 5 Landfills MCAS El Toro (letter dated December 1, 1998).

Agency Comments - California Environmental Protection Agency (Cal-EPA)

- Cal-EPA Department of Toxic Substances Control (DTSC), Comments on Draft Engineering Design Report (EDR), Operating and Maintenance Manual (O&MM), Construction Quality Assurance/Quality Control (QA/QC) Plan, and Contingency Plan (CP) for Vadose Zone Remediation at Operable Unit 2A, Site 24, MCAS El Toro (letter dated October 13, 1998).
- Cal-EPA, California Integrated Waste Management Board, RE: Draft Record of Decision (ROD) for Sites 2 and 17, MCAS El Toro (letter dated November 3, 1998).

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- Cal-EPA DTSC, Request for Extensions to the Federal Facilities Agreement (FFA) Schedules, MCAS El Toro (letter dated November 6, 1998).
- Cal-EPA DTSC, Closure Report Approval: Temporary Accumulation Area (TAA) 765 Site at MCAS El Toro (letter dated November 17, 1998).
- Cal-EPA DTSC, Comments on Draft Technical Memorandum, UNSAT-H Infiltration Modeling for Landfill Covers, MCAS El Toro (letter dated November 23, 1998); Attachment: Additional Comments from California Integrated Waste Management Board (letter dated November 17, 1998 and memo dated November 4, 1998).
- Cal-EPA DTSC, Closure Report Approval: Solid Waste Management Unit 7 at MCAS El Toro (letter dated November 24, 1998).

**MCAS El Toro
Restoration Advisory Board
Meeting**

**2 December 1998 6:30-9:00 PM
Irvine City Hall
Conference and Training Center
One Civic Center Plaza
Irvine**

AGENDA

Question and Answer (Q&A) Ground Rules

- **Q&A follows individual presentations; time designated for presentations includes Q&A time.**
- **Open Q&A session (environmental topics) is at the end of the New Business segment.**
- **After meeting adjournment, Navy and Marine Corps representatives are available to answer additional questions.**

Welcome/Introductions/Agenda Review (6:30-6:35)

Joseph Joyce
Marine Corps/Navy RAB Co-chair

Old Business (6:35-6:50)

Approval of 9/30/98 Minutes (6:35-6:40)

Greg Hurley
RAB Community Co-chair

Announcements (6:40-6:45)

Joseph Joyce & Greg Hurley

Subcommittee Meeting Report (6:45-6:50)

Greg Hurley & Subcommittee Chair

New Business (6:50-8:40)

Regulatory Agency Comment Update (6:50-7:05)

Glenn Kistner U.S. EPA	Tayseer Mahmoud Cal-EPA DTSC	Patricia Hannon RWQCB
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RAB TAPP Determination (7:05-7:15)

Joseph Joyce & Greg Hurley

Record of Decision Process (7:15-7:30)

Andy Piszkin
U.S. Navy/Southwest Division

Underground Storage Tank Program at MCAS El Toro
(7:30-7:45)

Andy Piszkin

5 MINUTE BREAK (7:45-7:50)

EPA Presentation/Discussion on Perchlorate (7:50-8:40)

Glenn Kistner & Kevin Mayer
U.S. EPA U.S. EPA

Open Q&A (Environmental Topics) (8:40-8:50)

Joseph Joyce & Andy Piszkin

Meeting Summary & Closing (8:50-9:00)

Greg Hurley & Joseph Joyce

Meeting Evaluation

Future Topics and Meetings

PUBLIC NOTICE

**MARINE CORPS AIR STATION
EL TORO**

Restoration Advisory Board Meeting



The Restoration Advisory Board is composed of concerned citizens and government representatives involved in the environmental cleanup program at MCAS El Toro. Your participation and input is important and appreciated.

**Wednesday, December 2, 1998
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:

- ***Record of Decision Process***
- ***Underground Storage Tank Program at MCAS El Toro***
- ***EPA Presentation/Discussion on Perchlorate***



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
(949) 726-3470 or 726-2840

MARINE CORPS AIR STATION EL TORO
RESTORATION ADVISORY BOARD MEETING

September 30, 1998

MEETING MINUTES

The 34th Restoration Advisory Board (RAB) meeting for Marine Corps Air Station (MCAS) El Toro was held Wednesday, September 30, 1998 at the Irvine City Hall. The meeting began at 6:38 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 having Marcia Rudolph, RAB member, lead the group in the Pledge of Allegiance. He welcomed everyone in attendance and reminded the group to sign in so all those present will receive a copy of the meeting minutes and the next RAB meeting agenda. Following self-introductions made by all in attendance, Mr. Joyce provided an overview of the meeting agenda. Mr. Joyce reminded the RAB of the meeting ground rules: time is allotted at the end of each presentation specifically for questions and answers, and to please hold all questions until the end of the presentation. RAB members discussed the need for a separate general question and answer session during the Meeting Summary portion of the meeting. It was agreed that this would be included on all future RAB meeting agendas. After adjournment of tonight's meeting Marine Corps and Navy representatives will be available to answer additional questions.

OLD BUSINESS

Review and Approval of July 29, 1998 Meeting Minutes

Some issues regarding perchlorate from the July 29, 1998 RAB minutes were mentioned by Mr. Greg Hurley, RAB Community Co-Chair, however, the RAB approved the minutes without amendment.

Announcements

- Mr. Hurley announced that the OU-3 subcommittee, which focuses on the sites with surface soil contamination (Sites 7, 8, 11, 12, 14 and 16), is still without a chairperson. Mr. Joyce called for a RAB member to volunteer to fulfill this responsibility to coordinate RAB member's review of the documents for these sites. Don Zweifel volunteered to serve as the OU-3 subcommittee chair.
- Mr. Joyce encouraged RAB members to pick up a copy of the handout, "Current Index – September 29, 1998, MCAS El Toro Information Repository Collection" that lists all Installation Restoration Program documents that are available to the public at the Heritage Park Regional Library in Irvine. The collection is continuously updated. He

also said that RAB members should inform members in their respective communities of the availability of the documents at the Information Repository. Also, available to the public is the Administrative Record file with all decision documents and it is located at the Environment and Safety Office at MCAS El Toro.

- Mr. Joyce said that the Orange County Grand Jury was at MCAS El Toro on September 16, 1998 for a Station briefing and tour on the Environmental Cleanup Program. He said a letter was received by the Marine Corps from the Grand Jury stating that the tour and briefing was most helpful in understanding the cleanup program. Mr. Joyce said that the Grand Jury was looking at the planning process, and that process includes the environmental cleanup program.
- Mr. Joyce introduced Dave DeMars, Remedial Project Manager, from Southwest Division Naval Facilities Engineering Command, who replaced Bernie Lindsey.
- Mr. Joyce introduced two new RAB members, Harry and Arline Chenarides of Aliso Viejo.
- Mr. Joyce also introduced Lt. Adrienne Dewey, who has replaced Capt. Matt Morgan as the BRAC Public Affairs Officer. Capt. Morgan was reassigned to serve as the Marine Corps liaison to the movie and television industry in Hollywood, California.
- Mr. Hurley emphasized the need for the RAB subcommittees to meet regarding the perchlorate issue (for more information, see Closing Announcements/Future Meeting Dates on page 14).

NEW BUSINESS

◆ Regulatory Agency Comment Update – Patricia Hannon, Project Manager, Regional Water Quality Control Board (RWQCB); Tayseer Mahmoud, Project Manager, Cal-EPA Dept. of Toxic Substances Control (DTSC); Glenn Kistner, Project Manager, U.S. EPA

Patricia Hannon, Project Manager, RWQCB

Ms. Hannon said that she has recently reviewed the following documents: Draft Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP) for Groundwater Monitoring of Perchlorate at MCAS El Toro; and the Draft CERCLA (Groundwater) Monitoring Plan, MCAS El Toro. She said that both documents looked fine. She is currently reviewing the Draft Engineering Design Report for Vadose Zone Remediation at Site 24, MCAS El Toro.

Tayseer Mahmoud, Project Manager, Cal-EPA DTSC

Mr. Mahmoud reported that DTSC reviewed seven documents and copies of Agency comments have been provided on the sign-in table. Documents reviewed include: (1) Closure Report for Temporary Accumulation Area (TAA) 765; (2) On-Scene Coordinator Report for Time-Critical Removal Actions at Landfill Sites 2 and 17; (3) Draft Proposed Plan for Operable Unit 3, Sites 8, 11, and 12; (4) Field Sampling Plan and Quality Assurance Project Plan (QAPP) for Groundwater Monitoring of Perchlorate; (5) Draft CERCLA Groundwater Monitoring Plan; (6) and (7) both are Federal Facilities Agreement (FFA) schedule extensions. At the end of these

minutes a listing of DTSC comments is included. A brief summary of Mr. Mahmoud's comments follows.

Regarding Item 1, Mr. Mahmoud said that if TAA 765, which is located within Installation Restoration Program Site 13, cannot be cleaned up to residential land use, the Navy needs to submit Record of Decision (ROD) modifications to the regulatory agencies. The cleanup goal proposed for TAA 765 is industrial land use. The ROD for Site 13, signed in September 1997, was for "No Action" at the site that resulted in a residential land use scenario with no institutional controls. He added that the Navy should evaluate TAA 765 against residential risk standards.

For Item 2, DTSC agrees with the scope of work conducted for the sites that involved mitigating the erosion of landfill debris along surface drainage channels at the landfill sites. However, the report was unclear as to whether there has been consolidation. DTSC requested the submittal of records of waste relocation, including volumetric measurements, sampling of the waste before disposal, confirmation sampling to show the areas have been cleared.

For Item 3, DTSC requested more information on the proposed preferred remedy, Alternative 3, Excavation with Recycling of Excavated Soil as Foundation Material for on-Station landfills. Specifically, that amount of soil expected to be excavated from each site, the number of confirmation samples of excavated soil and from the bottom of the excavated areas at the sites. DTSC also asked for additional information regarding the ecological risks from placing excavated materials on landfills at Sites 2 and 17. He also commented that the Proposed Plan for Closure of Station Landfills did not discuss placement of this soil at Sites 2 and 17 and that the public should be informed of this.

For Item 4, DTSC commented that it may be useful for field quality control samples to include split samples, recommending a frequency of 5 to 10 percent with a minimum of one per sampling event. He also requested a sampling schedule since DTSC will also be taking split samples. Mr. Mahmoud said the QAPP complied with pertinent elements of U.S. EPA requirements for such plans.

For Item 5, DTSC agrees with the Marine Corps' proposal to abandon or reduce monitoring of numerous wells that are not considered necessary for evaluating groundwater parameters or contamination, but this decision should be delayed until the perchlorate investigation has been completed. As for the landfill monitoring, DTSC disagrees with the Marine Corps' proposal to reduce the suite of chemicals and the frequency of sampling at the landfill sites. In regard to radionuclides, DTSC requested more information on the emitters used for EPA Method 901.1.

For Items 6 and 7, DTSC approved FFA extensions for the Draft ROD for Closure of Station Landfills and the Draft Proposed Plan and Draft ROD for Groundwater at OU-1 and Site 24.

Mr. Joyce clarified that due to significant comments on OU-2C for Sites 3 and 5, two RODs will now be prepared for the Station landfills. The Marine Corps is moving forward with the ROD for OU-2B for Sites 2 and 17, and the draft is due to the regulatory agencies for review

on November 4, 1998. The Marine Corps is working with the U.S. Fish and Wildlife Service, the federal agency proposed for taking over management of the Station that includes Sites 2 and 17. The Marines are providing additional information about these habitat areas and the wildlife present. The Draft ROD due date for OU-2C has not been revised at this time.

Glenn Kistner, Project Manager, U.S. EPA

Mr. Kistner said the only written comments he brought tonight as a handout pertain to the CERCLA Groundwater Monitoring Plan (long-term monitoring). He said that overall the draft plan represents a good attempt to optimize the groundwater monitoring network at MCAS El Toro. The goal to maximize efficiency while minimizing costs is consistent with U.S. EPA policy. Also, the key comment states that, within the document, the specific downgradient wells sufficient for defining the leading edge of the off-Station groundwater plume need to be identified. This is necessary to determine if the plume of solvent-contaminated groundwater is migrating further. He added that this might also involve more frequency for sampling. He said that that U.S. EPA has been working with the Navy on the perchlorate sampling providing review of the Field Sampling Plan and the Quality Assurance Project Plan. He added that U.S. EPA's labs, along with labs from DTSC and the Navy would all be participating in the quality assurance effort for the perchlorate sampling and analysis. Mr. Kistner also said that results from the perchlorate sampling would need to be reviewed to determine if monitoring wells can be eliminated from the long-term monitoring network.

Mr. Kistner also said that U.S. EPA has not yet provided written comments on the OU-3 Proposed Plan for Sites 8, 11, and 12. Comments provided in review meetings of the document with BCT members mostly pertain to clarification on explaining risks to human health and in making the document easier for the public to understand.

◆ Technical Assistance for Public Participation (TAPP) Grants - Lee Saunders, Public Affairs Officer, Southwest Division Naval Facilities Engineering Command

Mr. Saunders' presentation focused on the Technical Assistance for Public Participation (TAPP) program. He also covered two other programs: Technical Outreach Services for Communities (TOSC) and the Technical Assistant Grant (TAG) program. Both TOSC and TAG programs are sponsored by the U.S. EPA whereas the TAPP program is sponsored by the Department of Defense (DoD) and has been specifically developed for RAB groups. All three programs are similar – the main purpose is to provide funds to enable the community to become more involved in the environmental cleanup process. Handouts provided by Mr. Saunders included: brochures for both TAPP and TOSC, copies of the presentation overheads, and the DoD ruling on TAPP.

Mr. Saunders reminded the RAB that they are not limited to using only these assistance programs. There are various sources of technical support including local, state and federal agency staff, university professors and staff, and volunteers are all available to provide the RAB with technical support.

TAG

The TAG program was authorized in 1986 under the federal Superfund Amendments and Reauthorization Act. It is specifically for Superfund sites on the National Priorities List (NPL). MCAS El Toro was placed on the NPL in 1990. The TAG program provides up to \$50,000 or more in funding for eligible groups. Groups must form a non-profit corporation and come up with 20% matching funds (in the form of funds or services in kind) and they must administer the funds. To be considered for a TAG, groups must submit a detailed application to the U.S. EPA.

Mr. Saunders told the RAB that there are eligible projects and ineligible projects for TAG funds. He reminded the group that the main purpose is to educate citizens about the environmental cleanup program specific to a particular site. Funds can be used to hire technical experts to help the group review and better understand the technical documents. Funds may also be used to hire an administrator to aid the group in managing the grant.

Mr. Saunders said that TAG funds may not be used for: paying for tuition; covering travel expenses; performing new studies, taking legal action; lobbying against the U.S. Government or its agencies including the U.S. EPA; or for reopening final agency decisions.

TOSC

TOSC is another U.S. EPA-sponsored program and is operated through two West Coast universities – Stanford University and Oregon State University. Both universities provide support to specific communities through their experts that interpret documents and conduct training on the environmental aspects of site cleanup. TOSC is primarily geared toward low-income communities with hazardous waste problems, however TOSC is used in a variety of communities. Currently, there are two RABs which use TOSC: the MCAF Tustin RAB and the Naval Air Station (NAS) North Island RAB in San Diego.

The advantages of TOSC are that it uses existing structures and a group does not have to form a non-profit corporation, contribute 20% matching funds, nor administer funds. TOSC is funded by the U.S. EPA that pays the universities to provide technical experts to educate the community about environmental cleanup. He iterated that the TOSC program is geared toward non-NPL facilities and bases. MCAS El Toro is not eligible to apply for the TOSC program because it is a Superfund site.

TAPP

Mr. Saunders said that DoD believes that any community, which is educated and informed about the environmental cleanup process, can better support that process. Unlike the TAG and TOSC programs, TAPP is specifically for RABs and no outside group can apply. To receive an application for TAPP, the RAB must provide documentation, in the form of a letter or meeting minutes that shows a simple majority vote was cast in favor of applying for a TAPP.

Mr. Saunders stated that DoD initiated development of the TAPP program in 1994 when RABs were starting up. The TAPP funds were authorized in 1996 in the National Defense Authorization Act (NDAA). After this long proposed ruling period, the final ruling for the TAPP program occurred on February 2, 1998. Since February, the DoD has been in the process of educating all of the RABs about the TAPP program.

Under the TAPP program, the RAB does not have to form a non-profit corporation, contribute 20% matching funds, nor administer funds. The in-house TAPP process is administered through the DoD. However, Mr. Saunders explained that the TAPP funds come solely from the existing Installation Restoration Program (IRP) budget of each base or installation. Therefore, current IRP-budgeted funds are used to support the RAB and no additional funds are available to support TAPPs. There is a maximum funding limit of \$25,000 per fiscal year or 1% of the IRP budget for each base, whichever is less. The \$25,000 is not limited to one TAPP. RABs can have several TAPPs but the funds spent cannot exceed \$25,000 in a given fiscal year. The total amount of funds applicable to TAPPs at each base is limited to \$100,000.

Mr. Saunders said the TAPP process begins when the RAB determines by a majority vote to submit an application for a TAPP. Other key players are the BEC, who is available to aid in filling out the application. The Installation Commander makes the final decision for TAPP approval. If the TAPP is approved, the contract officer who supports the installation's environmental program and RAB procures services of a technical advisor for the RAB.

Under the TAPP, the following activities are eligible for support:

- Interpretation of technical documents;
- Review of proposed restoration technologies;
- Participation in relative risk site evaluations;
- Assisting the RAB to understand health and environmental implications of sites and cleanup strategies; and
- Training, as appropriate.

Ineligible activities under the TAPP program include: political activity or lobbying; litigation or underwriting legal actions; new environmental investigation studies; epidemiological or health studies; community outreach; and reopening final DoD decisions or conducting disputes with DoD.

Mr. Saunders said the key to obtaining TAPP approval from the Installation Commander is for the RAB to show how the TAPP will provide assistance that helps the RAB become more involved in the environmental restoration process. In turn, this assistance will help build support for cleanup activities at the installation. Another key to obtaining TAPP approval is that the technical assistance would likely contribute to community acceptance of environmental restoration activities at the installation.

A potential provider for technical assistance needs to meet certain criteria. A good candidate would be someone who can demonstrate knowledge in the environmental field and has the needed academic background. In addition, the provider needs to have expertise in

environmental cleanup and experience working on hazardous or toxic waste problems. The provider should be an expert in interpreting documents and be able to write reports. If the TAPP is not approved, there is a process for reconsideration by the Installation Commander. Reasons for the disapproval must be provided with feedback on how approval might be accomplished. The TAPP might not be approved if the Installation Commander feels that the installation's contractor can accomplish the RAB's objectives stated in the TAPP application.

Mr. Saunders said that DoD contacts regarding TAPPs include: Patricia Ferrebee at (703) 697-5372; Marcia Reed at (703) 697-9793; and Mary Reguso at (703) 697-9106. The key Navy contact is Cindy Turlington at (703) 602-5330. More information regarding TAPPs, is available at the web site <http://www.dtic.mil/envirodod/> Mr. Saunders reminded the RAB that their first point of contact for the MCAS El Toro RAB is the BEC, Joseph Joyce. If the RAB has further questions, Mr. Saunders can be contacted at (619) 532-3100 or by email at lhsaunders@efdswest.navfac.navy.mil

Question and Answer Session

Mr. Joyce told the RAB that in regards to funding, RABs have a limit imposed by Congress for how much the DoD/DoN can spend to support RABs. The ceiling for MCAS El Toro is \$35,000. He said that if any funds are used for the TAPP program, it is deducted from the funds designated to support the RAB. Mr. Joyce noted that MCAS El Toro's limit was lower but was raised to \$35,000 because of arguments presented regarding community interest in the cleanup and closure of the Air Station.

Dr. Chuck Bennett, RAB member, stated that he supports programs such as the TAPP and TAG. He praised the MCAS El Toro RAB for being well-informed on technical matters. He said that the TAPP program is well designed for providing a means of educating a group of people, however, it would be hard to better educate the MCAS El Toro RAB group any better than it already is. He said it would be a waste of funds to bring in an expert because the RAB is well informed already.

Mr. Saunders noted that the TAPP is a few years too late and that it would have been better if TAPP was available in 1994-95 when the RABs were new and needed that type of support. He did mention however, that there are new RAB members coming on board who do need the education. He explained that a Pilot TAPP was done at NAS North Island and the process took approximately 3-4 months to complete. The RAB is not limited to TAPP; members of the group may form a non-profit organization and apply for a TAG. The group is allowed to have more than one program at a time.

◆ Federal Facilities Agreement (FFA) Schedule Update – Andy Piszkin, Lead Remedial Project Manager, Southwest Division Naval Facilities Engineering Command

VOC Source Area – Vadose Zone Soils

Mr. Piszkin said the interim Record of Decision (ROD) for the VOC Source Area was signed last year by the BRAC Cleanup Team (BCT). The interim ROD covered only the vadose zone that consists of the contaminated soil present above the contaminated groundwater at Site 24. The Soil Vapor Extraction (SVE) System Design Work Plan along with the Construction Quality Assurance/Quality Control and Contingency Plans are currently being reviewed. He said he anticipates that this review process would be completed in mid-October 1998. The Remedial Action, operation of the SVE system, is scheduled to begin in spring 1999. The SVE system, which was transferred to MCAS El Toro from Norton Air Force Base in San Bernardino, is currently being assembled. Project Closeout will occur after the SVE is in operation for a few years until monitoring tests indicate soil remediation has been successful. At this time, this is estimated to occur in April-June 2002.

VOC Groundwater – Source (Site 24) and Regional (Site 18)

Mr. Piszkin said the FFA schedule continues to be extended due to negotiations between the Department of the Navy (DoN) and the Orange County Water District and the Irvine Ranch Water District. Because the negotiations are going well, the regulatory agencies have agreed to hold off on having DoN proceed with proposing the Navy stand-alone approach (VOC groundwater remediation not affiliated with the Orange County Water District's Irvine Desalter Project). He said that the DoN believes that if they can get an initial agreement regarding the Irvine Desalter Project with the water districts in the next few months, they will try to accelerate the ROD portion of the CERCLA program.

He said that an outline for a Proposed Plan for groundwater remediation is being prepared that anticipates a joint project with the water districts. He also mentioned that DoN legal staff confirmed that it is not inappropriate for the Marine Corps to put out a draft ROD for regulatory agency review based on concept for a remedy that involves a joint project prior to the distribution of the Proposed Plan to the public.

The Draft Final Feasibility Study (Site 24) received regulatory agency concurrence on March 23, 1998. The Proposed Plan will have an agency review period of 2 months, from November 24, 1998 through January 1999, followed by a public comment period from May to June 1999. The ROD is expected to go out for agency review in September 1999 and the signing of the ROD by the BRAC Cleanup Team is anticipated to occur in February 2000.

Mr. Piszkin said the ROD would document the final remedy for soil contamination at Site 24 and for VOC-contaminated groundwater on-Station and off-Station. The off-Station portion of VOC-contaminated groundwater includes the 3-mile long VOC plume. The groundwater ROD will also clarify and finalize some of the VOC issues pertaining to the vadose zone of soil at Site 24 that were not completely addressed with the interim ROD. Once the final

remedy is documented in the ROD, OCWD will have the opportunity to start treatment plant construction.

Landfill Sites 2 & 17 and 3 & 5

Mr. Piszkin said that the public comment period for the four landfill sites was held from May 15 to June 13, 1998. The current FFA schedule calls for the issuance of the draft ROD for all four landfills for regulatory agency review in early November 1998. The Marine Corps is conducting modeling studies in an effort to find some common ground with the Local Redevelopment Authority and the regulatory agencies regarding institutional controls. When this information is available, a new schedule will be established with input from the entire BCT. Mr. Piszkin added that currently there are no negative impacts regarding the remedy proposed for Sites 2 and 17. The U.S. Department of Fish and Wildlife had some concerns but they were resolved. Ideally, the design process for these two sites would begin in April 1999.

Further Action OU-3 Sites 8, 11, & 12

According to Mr. Piszkin, the FFA schedule has not changed since the last presentation to the RAB. The Draft Final Feasibility Study received regulatory agency concurrence on June 22, 1998. The agency review period for the draft Proposed Plan has been completed. It was suggested that the Marine Corps make the report more reader friendly in regards to explaining the risk situation. The draft document proposes that Sites 8, 11, and 12, which are all located in the southwest quadrant of the Station, undergo remedial actions for excavation of shallow surface soil contamination. This would occur prior to the full transfer of the property. The public comment period for the Proposed Plan is scheduled for January through February 1999. Agency review of the ROD is scheduled from April through June 1999. Signing of the ROD by the BCT is anticipated to occur in September 1999.

OU-3 Sites 7, 14, & 16

Mr. Piszkin said these sites are low priority in regards to funding and action. A Phase I Remedial Investigation was conducted for these three sites. Site 16 is the old burn pit in the middle of the runway area. TCE has been detected in the groundwater, most likely the result of placing flammable liquids in the burn pit and performing fire-fighting training. The Marine Corps will need to conduct additional groundwater monitoring at this site. Since this is considered low priority the schedule has been modified. Dates were moved back to focus on higher priority sites.

Explosive Ordnance Disposal (EOD) Range (Site 1)

Mr. Piszkin said this site is currently in use as a training range. During the Phase I Remedial Investigation, some environmental sampling was conducted but the site was not completely characterized. Monitoring wells are present at the site. He said no decision has been made regarding this site. The DoN is waiting to find out what will happen with the EOD range. It is not known if it will be closed by the Marine Corps under CERCLA, or if it will be transferred to another agency. Currently, there are ongoing discussions with local law

enforcement agencies including Los Angeles Sheriff's Department regarding future use of this site. The FBI may also be interested in taking over operations; if so, the site would continue to be used as an EOD range.

◆ Overview of Environmental Remediation at MCAS El Toro – Andy Piszkin

Mr. Piszkin handed out a comprehensive handout that provided a historical overview from 1975 through 1998 of the environmental program at MCAS El Toro. He said information on the early history was provided because most RAB members are quite familiar with the activities conducted the past two to three years. Due to the thoroughness of the handout and with the meeting running behind schedule, Mr. Hurley suggested that Mr. Piszkin focus on 1998 issues. The RAB agreed, and Mr. Piszkin said he would answer questions on the handout after the meeting.

Mr. Piszkin said that the key documents produced in 1998 are: the BRAC Cleanup Plan (BCP) Update; the Proposed Plan for Closure of Station Landfills (Sites 2, 3, 5, and 17); the Volatile Organic Compound (VOC) Source Area Vadose Zone Remedial Action Work Plan, and draft Remedial Design/Remedial Action Plan, draft Quality Assurance/Quality Control Plan, and the Contingency Plans; and the CERCLA Long-term Groundwater Monitoring draft report.

The BCP Update provides information on the over 800 Locations of Concern at MCAS El Toro. Only 24 of these are in the Installation Restoration Program. The other locations, depending on the type of site, require oversight by the Regional Water Quality Control Board (Patricia Hannon), Cal-EPA DTSC (Tayseer Mahmoud), and at the local level (Orange County). Some of the other Locations of Concern consist of solid waste management units, Resource Conservation and Recovery Act (RCRA) sites (must meet current environmental compliance requirements), underground storage tanks (USTs), above-ground storage tanks (ASTs), oil/water separators, and burn pits. These have been used to support current operations.

Mr. Piszkin said that with the release of the Proposed Plan for Closure of Station landfills, and the accompanying public comment period and public meeting, a lot of comment and discussion has occurred. This includes working with the Local Redevelopment Authority (LRA) on various reuse issues. For the VOC Source Area, key aspects there is the design package for remediation of contaminated soil using the soil vapor extraction technology. Also, pilot tests results groundwater extraction for the VOC Source Area are expected to be ready for initial review by the Marine Corps and Navy.

◆ Past Costs MCAS El Toro Environmental Program– Andy Piszkin

Mr. Piszkin said this presentation was prepared in response to earlier requests for such information from Gail Reavis, RAB Member. The letter she wrote requesting cost information and the response letter from Joseph Joyce were distributed to those in attendance

along with an updated attachment to the letter that was originally sent to Ms. Reavis. The updated attachment was derived from the March 1998 BRAC Cleanup Plan, Appendix A, Table A5. It shows costs of the various Installation Restoration Program phases at each of the operable unit/sites for fiscal years 1985 through 1997. The attachment provides detailed numbers. Mr. Piszkin summarized the attachment.

- Total costs from 1985-1997 = 71 million
- Regional Groundwater = \$14.3 million
- VOC Source Area = \$8.2 million
- Landfills = \$17.5 million (Sites 2 & 17 = \$11.9 million; Sites 3 & 5 = \$5.6 million)
- Proposed Action Soil Sites 8, 11, and 12 = \$6.2 million
- Further Investigation Sites 1, 7, 14, and 16 = \$19.6 million
- No Further Action Sites 4, 6, 8, 9, 10, 13, 15, 19, 20, 21, 22, 23 and 25 = \$19.6 million
- Funds Awarded in Fiscal Year 1998 = \$6 million

Mr. Piszkin also summarized, Estimated Cost to Cleanup for the Installation Restoration Program:

- Total Costs: 1999 to Final Cleanup = \$80 million
- Regional Groundwater = \$20 million
- VOC Source Area = \$20 million
- Landfills = \$31 million (Sites 2 & 17 = \$19 million; Sites 3 & 5 = \$12 million)
- Proposed Action Soil Sites 8, 11, and 12 = \$3 million
- Further Investigation Sites 1, 7, 14, and 16 = \$6 million
- No Further Action Sites Sites 4, 6, 8, 9, 10, 13, 15, 19, 20, 21, 22, 23 and 25 = \$0 million

Mr. Piszkin clarified that the Installation Restoration Program follows the comprehensive step-by-step CERCLA process that requires: Preliminary Assessment, Site Investigation, Remedial Investigation (includes risk assessment)/Feasibility Study (includes Proposed Plan and Record of Decision), Remedial Design, and Remedial Action. For No Further Action Sites, no feasibility study is conducted and the process is completed after the Record of Decision. All other sites require completion of each step of the CERCLA process. Some sites also have interim remedial actions conducted.

◆ Defense State Memorandum of Agreement (DSMOA)/Cooperative Agreement – Joseph Joyce

Mr. Joyce said the purpose of this presentation is to provide RAB members with accurate information about the Defense State Memorandum of Agreement (DSMOA)/Cooperative Agreement (CA) process. He said the U.S. Army Corps of Engineers gave this presentation in August 1998 at the DSMOA/CA National Workshop in Dallas, Texas. The handout contains the entire package that was presented at that workshop. He said he would be focusing on portions of the presentation that best apply to MCAS El Toro and on how budgets are developed for the DSMOA/CA Program.

The purpose of the DSMOA/CA Program is to provide State oversight of the Department of Defense Environmental Restoration Program. Goals of the DSMOA/CA Program include: expediting cleanup at active installations, base closures, and formerly used defense sites; assuring compliance with state laws and regulations; and fostering communication and cooperation between the states and the defense services. A DSMOA is an agreement between the Department of Defense (DoD) and a state or territory covering Defense reimbursement of costs for services to be provided by a state or territory. A CA is an application filed by a state or territory for Defense approval seeking funds for reimbursement of DSMOA eligible services. He added that the DSMOA/CA process was developed jointly by the DoD and key states and California played an important role.

He said the key points for RAB members to take note of in the presentation package are the services eligible for reimbursement, services ineligible for reimbursement, and the management structure. He explained the various responsibilities of the agencies involved:

- DoD is responsible for policy, oversight and funding;
- Department of the Army is DoD's executive agent for all program components
- Army Corps of Engineers is the Army's execution agent for negotiating DSMOAs and approving and managing CAs; and
- DoD services are recipients of DSMOA eligible services, suppliers of workload data for CA development, reviewers of CAs and state/territory reports, and resources for CA funding. (The BRAC Cleanup Team's role falls into this group.)

Mr. Joyce added that there has been a change this year and funding comes from each of the DoD's service branches so each service is now responsible for paying for DSMOA support activities for its bases. Therefore, accountability for the DSMOA program rests with each of the services. He next described the six-steps that comprise the heart of the DSMOA/CA Program and identified the responsible agencies:

1. Initiate development of the CA package (state representative);
2. Prepare a two-year cleanup plan and budget with a six-year outlook (installations),
3. Develop the CA budget (base-specific requirements) for providing state oversight and support (state administrator);
4. Promote understanding of the CA budget, clarification and discussion of items in the budget, facilitate understanding of budget requests and services (state/services);
5. Prepare and submit the CA application (state); and
6. Approve and fund the CA application (Army Corps/services).

After approval, each service branch provides the funds to the Army Corps of Engineers to administer the program. He also said that California has received its fair share of funds for DSMOA/CA, receiving over 53 percent of the funds (for fiscal year 1997). He said that does not take into account the number of bases in California but shows the percentage of available funds received by the state.

For State fiscal year 1998, after receiving information provided by (step 2), the State of California developed the CA budget (step 3) by tasks and staffers. This includes all

deliverables that would be performed during fiscal year 1998 (see Attachment A Worksheet). Because things do change, a six-month review is built into the system for adjustments.

Mr. Hurley added that he asked Mr. Joyce to include DSMOA/CA on the RAB agenda. He said it is important for RAB members to know how this process works. He said that we are coming to a crunch period regarding funding, and if the community wants DTSC to continue providing these services, our elected representatives need to know. Mr. Hurley said he has prepared a petition in consultation with RAB members that reflects RAB members' concerns. The petition raises the point that RAB members believe that DTSC is playing an important role and providing the community with a useful and necessary service and that proper funding should continue.

Mr. Hurley said that Mr. Joyce's overview provided basic information needed for the RAB to understand this process. Next, the RAB Co-Chairs introduced Mr. John Scandura, DTSC's Regional Director, to provide some additional insight into DTSC's role in the DSMOA/CA Program. He said that in California there are about 60 Marine Corps and Navy bases with roughly 35 in Southern California. He added that no other state has been hit with as many BRAC closures as California. To date, \$8.5 million of DSMOA/CA funds have been spent in California. He said that when DSMOA/CA was first implemented in 1988-89, oversight funding for DSMOA/CA was 1 percent at non-closing bases and 1.5 percent for closing bases. He added that it appears from Mr. Piszkin's earlier presentation that \$159 million will be spent at MCAS El Toro for the Installation Restoration Program, and 1.5 percent of that is approximately \$2.2 million for DSMOA/CA oversight. At this point about 35 to 40 percent of that has been spent. He further explained the roles, contributions, and time required of DTSC technical staff including Tayseer Mahmoud, Project Manager, and Marsha Mingay, Public Participation Specialist, and others to perform their oversight functions.

Mr. Joyce reiterated that the DSMOA/CA process is being followed by all parties involved. He added that the process for this fiscal year incorporates new mechanisms (six-step process) for clarifying the budget. He said that funding is not being eliminated but DoN is trying to determine the appropriate level of funding.

A RAB member asked Mr. Scandura if DTSC received the same, more, or less funding under the newer process? Mr. Scandura said that DTSC now negotiates with each service branch and the Army Corps of Engineers. In the past, DTSC only negotiated with the Army Corps. He said that with this newer process DTSC receives less funding.

MEETING EVALUATION AND FUTURE TOPICS

During the meeting evaluation RAB members provided the following comments:

- Chronology handout for the Overview of Environmental Remediation presentation was very informative;
- Too many topics;
- For topics that generate a lot of questions need to manage time better;
- Choice of agenda items is very important; and

- Update on past costs served as a helpful follow-up and provided clarification to an earlier request and response for this information.

Suggestions for future presentation topics include:

- Perchlorate – Status of Investigation at MCAS El Toro (number of wells, evaluation results, etc.);
- Perchlorate information from U.S. EPA perchlorate point-of-contact;
- USTs;
- RODs – step-by-step walk through; use upcoming RODs for structure and substance; and
- Update on OU-1/Site 24 Groundwater and Irvine Desalter Project

CLOSING ANNOUNCEMENTS/FUTURE MEETING DATES

- The next RAB subcommittee meeting is scheduled for 6:30 to 9:00 p.m., Wednesday, October 28, 1998 at the Irvine City Hall, Conference and Training Center, One Civic Center Plaza, Irvine Topics to be discussed are OU-1/Site 24 groundwater issues and perchlorate.
- The next RAB meeting is scheduled for 6:30 to 9:00 p.m., Wednesday, December 2, 1998 at the Irvine City Hall, Conference and Training Center, One Civic Center Plaza.

The 34th meeting of the MCAS El Toro Restoration Advisory Board was adjourned at 9:45 p.m.

Attachments:

- DSMOA Resource Estimation Worksheet FY 1998/1998 Revised Appendix E
- Sign-in sheets.

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

- RAB Meeting Agenda/Public Notice –9/30/98 RAB meeting.
- RAB Meeting Minutes - 7/29/98 RAB meeting (*Minutes approved at the 9/30/98 meeting*)
- *Presentation* – Technical Assistance for Public Participation in (TAPP) in DoD's Environmental Restoration Program; Lee Saunders, PAO Southwest Division Naval Facilities Engineering Command
 - *Handout* – Office of the Under Secretary of Defense, Memorandum for DoD Environmental Restoration Stakeholders, Federal Register Publication of Final Rule – Technical Assistance for Public Participation in Defense Environmental Restoration Activities
 - *Handout* – TOSC, Technical Outreach Services for Communities, brochure
 - *Handout* – TAPP, Technical Assistance for Public Participation, DoD Environmental Restoration Program, brochure
- *Presentation* – MCAS El Toro Schedule Update, Federal Facility Agreement, RAB Meeting, 9/30/98; Andy Piszkin, Lead Remedial Project Manager (RPM), Southwest Division Naval Facilities Engineering Command (SWDIV)
- *Presentation* – Overview of Environmental Remediation at MCAS El Toro; Andy Piszkin, Lead RPM, SWDIV
- *Presentation* – MCAS El Toro Environmental Program Budget Update – Past Costs; Andy Piszkin, Lead RPM, SWDIV
 - *Handout* – Letters: May 30, 1998 signed by Gail Reavis, RAB Member; June 23, 1998 signed by Joseph Joyce, BEC, MCAS El Toro
- *Presentation* – Defense State Memorandum of Agreement (DSMOA) Cooperative Agreement by Joseph

Joyce, Marine Corps/Navy MCAS El Toro, RAB Co-Chair

- *Handout* – DoD and State Memorandum of Agreement/Cooperative Agreement (CA) Program Update, DSMOA/CA National Workshop, Dallas, Texas, August 11-12, 1998
- *Handout* – Section 2: The Cooperative Agreement Process, August 1997
- *Handout* - MCAS El Toro Information Repository Collection, Current Index, September 29, 1998, Heritage Park Regional Library
- *Handout* - Navy and Marine Corps – Internet Access, Environmental Web Sites
- *Handout* - DoD - Environmental Base Realignment and Closure Web Site Publications List
- *Handout* - MCAS El Toro Installation Restoration Program Mailing List Coupon

Agency Comments - U.S. Environmental Protection Agency

- U.S. EPA Comments on Draft CERCLA (Groundwater) Monitoring Plan, MCAS El Toro, (letter dated September 22, 1998)

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

- Cal-EPA DTSC, Response to Request for Extension to the Federal Facility Agreement (FFA) Schedules, MCAS El Toro (letter dated August 6, 1998).
- Cal-EPA DTSC, Comments - On-Scene Coordination Report for Time-Critical Removal Actions at Landfills Sites 2 and 17, MCAS El Toro (letter dated August 13, 1998).
- Cal-EPA DTSC, Comments - Closure Report for Temporary Accumulation Area (TAA) 765 Site at MCAS El Toro (letter dated August 21, 1998).
- Cal-EPA DTSC, Response to Request for Extension to the Federal Facility Agreement (FFA) Schedules, MCAS El Toro (letter dated August 25, 1998).
- Cal-EPA DTSC, Comments on Draft Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP) for Groundwater Monitoring of Perchlorate at MCAS El Toro (letter dated September 8, 1998).
- Cal-EPA DTSC, Comments on Draft Proposed Plan for Operable Unit (OU) 3, Sites 8, 11 and 12, MCAS El Toro (letter dated September 21, 1998).

Copies of all past RAB meeting minutes and handouts 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 (949) 551-7151. Library hours are Monday through Thursday, 10 am to 9 p.m.; Friday and Saturday, 10 am to 5 p.m.; Sunday 12 p.m. to 5 p.m..

Navy and Marine Corps Internet Access - Environmental Web Sites (includes RAB meeting minutes)
<http://www.efdswest.navy.mil/pages/Envrnmfl.htm>

Marine Corps Air Bases Western Area Web Site (includes MCAS El Toro):
www.eltoro.USMC.mil

Department of Defense - Environmental BRAC Web Page
www.dtic.mil/environdod/envbrac.html

U.S. EPA Superfund Web Page
www.epa.gov/superfund/index.html

DSMOA Resource Estimation Worksheet - FY 1998/1999

Revised Appendix E

DTSC Remedial Project Manager: Tayseer Mahmoud

Telephone Number: (714) 484-5418

RWQCB Project Staff: Patricia Hannon

Telephone Number: (909) 782-4498

MARINE CORPS AIR STATION - EL TORO

CALSTARS DTSC Site Code: 400055-47

TASK	DTSC								SWRCB	Other IAG
	RPM	Supervisor	Geologist/ Eng.	Toxicologist	Reuse Spec.	PSB	Legal	IH / Lab.	Consultant Services	Consultant Services
1. Record of Decision with Responsiveness Summary - Landfills (Sites 2 & 17)	248	26	8		20	40	40		80	40
2. Record of Decision - Soil (Sites 8, 11, & 12)	120	24		8	8	16	20		24	
3. Design and Construction QA/QC with Contingency Plan for Soil (Site 24 Vadoze Zone)	260	28	130			16		8	20	
4. RCRA Closure Reports (4 reports)	260	24	30	140	8			4	8	
5. Aerial Photograph Anomaly Sampling and Data Report	20	8			16			4	8	
6. BRAC Cleanup Plan (BCP) - 1999 Update	40	6			20				8	
7. Meeting for Public Comments on Proposed Plan for Soil (Sites 8, 11, & 12)	8	2				16			8	
8. FFA Extensions/Meetings (10)	80	16							20	
9. BCTs/RPMs Meetings (8)	80	16	44		8				80	
10. RAB Meetings/Community Workshops (9)	70	20		32	16	38			50	
11. Field Oversight Visits (10)	80	16	20					4	40	
Community Relations Activities										
12. Draft & Final CERCLA Long-Term Groundwater Monitoring Plan	156	10	84						44	24
13. Draft and Final SAP & QAPP for Perchlorate in Groundwater/Field Oversight (2 events)	50	4						40	10	
14. Time-Critical Removal Action Report for Landfills (Sites 2 & 17)	60	4							18	
15. Technical Memorandum - UNSAT-H Infiltration Model for Landfills	40	4	36						24	
16. Meetings with DON, Regulatory Agencies, and LRA for Landfills	48	32	8		24	4	16		21	
17. Proposed Plan for Groundwater (Sites 18/24)	80	8				30			40	
18. Mid year review of Community Relations Plan						16				
Subtotals	1700	248	360	180	120	176	76	60	503	64
Total	3487									

* Separate documents will be submitted for OU-2B (Sites 2 & 17) and OU-2C (Sites 3 & 5).

** Additional hours may be added if Community Relation Plan needs to be updated.

**MCAS EL TORO
RESTORATION ADVISORY BOARD MEETING
September 30, 1998**

RAB MEMBER SIGN-IN SHEET

Name	Signature	Name	Signature
Barney, Col. Joseph P. (ret)	<i>Col. Barney</i>	Koepke, Jeffrey	
Bennett, Dr. Charles	<i>Dr. Bennett</i>	Mahmoud, Tayseer	<i>Tayseer Mahmoud</i>
Brady Jr., Paul		Matheis, Mary Aileen	
Britton, George	<i>George Britton</i>	Mathews, Thomas	
Chenarides, Arline	<i>Arline Chenarides</i>	McVicker, Robert R.	
Chenarides, Harry	<i>Harry Chenarides</i>	Meier, Fred J.	
Cohn, Enid		Murphy, Don	<i>Don Murphy</i>
Crompton, Chris	<i>Chris Crompton</i>	Olquin, A. Richard	
Gallagher, George M.		Reavis, Gail	<i>Gail Reavis</i>
Hannon, Patricia	<i>Patricia Hannon</i>	Ritchie, Col. E.J.	
Herndon, Roy	<i>Roy Herndon</i>	Rudolph, Marcia	<i>Marcia Rudolph</i>
Hurley, Greg - Co-Chair	<i>Greg Hurley</i>	Sharp, Steven	<i>Steven Sharp</i>
Hersh, Peter	<i>Peter Hersh</i>	Werner, Jerry	<i>Jerry Werner</i>
Joyce, Joseph - Co-Chair	<i>Joseph Joyce</i>	Woodings, Bob	<i>Bob Woodings</i>
Kistner, Glenn	<i>Glenn Kistner</i>	Zweifel, Donald E.	<i>Donald Zweifel</i>

**MCAS EL TORO
RESTORATION ADVISORY BOARD MEETING
September 30, 1998**

**NON-RAB MEMBER SIGN-IN SHEET
Other Attendees, Guests**

NAME PLEASE PRINT CLEARLY	AFFILIATION	MAILING ADDRESS	PHONE FAX	INTERESTED IN RAB MEMBERSHIP?
John Scandura	OTSC			
Polin Modaklou	LRA	10 Civic Center Plaza 2nd Floor Santa Ana, CA 92701		
Chester F. Barnard	EBSI SERVICES	1631 Irvine Ave Suite F Costa Mesa 92627		
ADRIENNE DEWEY	BRAC EL TORO	22 Bldg 899 MCAS ELTORO SANTA ANA	726-3853	
DON CLAUSE	DYNAMAC CORP. ENV SVCS	PO BOX 50591 IRVINE, CA 92619		
Cynthia Hornecker	Navy			

MCAS ~~L~~ TORO
RESTORATION ADVISORY BOARD MEETING
September 30, 1998

NON-RAB MEMBER SIGN-IN SHEET
Other Attendees, Guests

NAME <u>PLEASE PRINT CLEARLY</u>	AFFILIATION	MAILING ADDRESS	PHONE FAX	INTERESTED IN RAB MEMBERSHIP?
DAVID DEMARS	NAVY		619 532-4163 (fax) 4160	No
JOSEPH FARRAR	CITY OF IRVINE			
JOHN GAU	USMC		726-2259	
RICH TAMBARA	SCAQM/D	21865 E. COPLLEY DR. DIAMOND BAR, CA. 91765	(909) 396-2319	NO

**MCAS EL TORO
RESTORATION ADVISORY BOARD MEETING
September 30, 1998**

NON-RAB MEMBER SIGN-IN SHEET
Other Attendees, Guests

NAME <i>PLEASE PRINT CLEARLY</i>	AFFILIATION	MAILING ADDRESS	PHONE FAX	INTERESTED IN RAB MEMBERSHIP?
Lisa Miller	Senator Rob Hurtt	11642 Knott St #8 ⁹²⁸⁴¹ Garden Grove	(714) 898-8353 (714) 898-8033 Fax	
Lee H. Saunders	Southwest Division Naval Facilities Engineering Command	1220 Pacific Highway San Diego, CA 92129	619-532-3100	

Navy and Marine Corps - Internet Access Environmental Web Sites

Southwest Division Naval Facilities Engineering Command Web Site:

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

Marine Corps Air Bases Western Area Web Site:

www.eltoro.usmc.mil

Department of Defense - Environmental BRAC Web Page

www.dtic.mil/environdod/envbrac.html

U.S. EPA Superfund Web Page

www.epa.gov/superfund/index.html

www.dtic.mil/envirodod/brac/publish.html



Publications

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The following publications have been produced by the Office of the Assistant Deputy Under Secretary of Defense (Environmental Cleanup).

Some of these documents are in Adobe PDF format. In order to read these files you must Download Adobe Acrobat Reader, if it is not already installed on your computer. Once you have installed Adobe Acrobat Reader, click on the PDF document you wish to view. Then, select the ".exe" (executable) file in the Adobe Acrobat directory when your browser prompts you to select an application for viewing the document. (See page 2, backside.)

➤ Guidance Documents

- [BRAC Cleanup Plan Abstract and BCP Abstract Instructions](#)
- [BRAC Cleanup Plan \(BCP\) Guidebook](#) (Fall 95)
- [Retention of Environmental Professionals at Closing Installations](#)

➤ Policy Documents

- [Environmental Review Process to Obtain the Finding of Suitability Required for Use of Early Transfer Authority for Property Not on the National Priorities List](#) (April 1998) **New!**
- [DoD Finding of Suitability to Transfer for BRAC Property \(FOST\) Policy Memorandum](#) (June 1994)
- [Asbestos, Lead-based Paint \(LBP\) and Radon Policy Memorandum](#) (October 1994)
- [FAST Track Cleanup at Closing Installations](#) (May 1996)
- [Implementation of Authority to Transfer Property Before Completing Remediation](#) (September 1996)
- [DoD Future Land Use Policy](#) (July 1997)
- [Clarification of "Uncontaminated" Environmental Condition of Property at Base Realignment and Closure \(BRAC\) Installations](#) (October 1996)

➤ Factsheets, Guides, & Tools

- [Fact Sheet - Early Transfer Authority](#) (May 1998) **New!** Adobe PDF Format
- [Fact Sheet - CERCLA/RCRA Overlap in Environmental Cleanup](#) (May 1998) **New!** Adobe PDF Format
- [A Guide to Establishing Institutional Controls at Closing Military Installation](#) , (February 1998) **New!**
- [A Guide to Assessing Reuse and Remedy Alternatives at Closing Military Installations](#) (February 1996)
- [BRAC 1995 Quick Reference: Community and Environment](#) (1995)
- [BRAC Fast -Track Cleanup Environmental Guide](#)
- [Expediting BRAC Cleanups Using CERCLA Removal Authority Fact Sheet](#) (Spring 1997)
- [Fact Sheet - Field Guide to FOSTL](#)
- [Fast Track to FOST](#) A Guide to Determining if Property is Environmentally Suitable for

Transfer (Fall 1996)

- [Innovative Solutions Save Time and Money Fact Sheet](#) (Spring 1997)
- [Institutional Controls - What They Are and How They Are Used Fact Sheet](#) (Spring 1997)
- [Keys to Opening the Door to BRAC Cleanup Team \(BCT\) Success](#)
- [Overview of the Fast-Track Cleanup Program Fact Sheet](#) (Spring 1997)
- [Map of Fast-Track Cleanup Installations Under BRAC](#)
- [United Efforts Strengthen Cleanups - Partnering Makes a Difference](#) (Spring 1997)
- [Updating your RAB to Meet BRAC Needs](#) (June 1996)
- [Using CERCLA ARAR Waivers in BRAC Cleanups](#) (Fall 1997)

▶ Reports

- [Fast-Track Cleanup; Successes and Challenges, 1993-1995](#)

▶ Presentations

- No presentations are currently available.

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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 _____



UNITED STATES MARINE CORPS

HEADQUARTERS MARINE CORPS AIR STATION EL TORO

PO BOX 95001

SANTA ANA CA 92709-5001

IN REPLY REFER TO:

6284

1AU

1 Dec 1998

Mr. Greg Hurley
8001 Irvine Center Drive, Suite 900
Irvine, CA 92618

Dear Mr. Hurley:

The purpose of this letter is to address some of your concerns on the Defense State Memorandum of Agreement (DSMOA) funding for the Marine Corps Air Station (MCAS) El Toro. As discussed at the Restoration Advisory Board (RAB) meeting of October 23, 1998 and as raised in your letter of September 21, 1998, you want to maintain DSMOA funding in order to keep the State of California involved in the clean up of MCAS El Toro. You feel that the State of California is the most concerned about remedy selections that are protective of human health and the environment and also supportive of the community's interest.

First let me say that I too am concerned about remedy selections that are protective of human health and the environment and that are compatible with community reuse plans. As you know, MCAS El Toro is on the 1993 Base Realignment and Closure (BRAC) list and will cease operations in July 1999. We have been working closely with both the State of California and the Environmental Protection Agency in our joint BRAC Cleanup Team (BCT) to accelerate our cleanups and disposal schedules. Since the BCT was formed, over 85 percent of MCAS El Toro has been confirmed by the regulators as suitable for disposal. I support continued DSMOA funding for the State of California's BCT role, and regulatory oversight role in our environmental cleanup program.

As you know, we have worked together in the spirit of cooperation over the past five years to support the community-based RAB. You are currently in your second term as Community Co-chair and we have dealt with many tough issues to support the community's interest and exchange of information both in your role as RAB member and as Co-chair. At times we have not always agreed, however we have taken the time to address community concerns and facilitate resolution through the RAB process. MCAS El Toro has been, and will continue to be, committed to providing the RAB and the expanded community with factual information on the cleanup program at MCAS El Toro. I was disappointed that you did not give me and the entire RAB the opportunity to discuss DSMOA prior to your September letter. We only briefly addressed the DSMOA issue in the past and had plans to engage in detailed discussions as a RAB agenda topic. Our normal process would have provided for a presentation on the facts and included a question and answer session. This process has proven effective with the RAB members, usually giving positive evaluations of the Marine Corps efforts to support the community's interest. These efforts are documented in the RAB meeting minutes.

In addition to the RAB, the Base Transition Coordinator (BTC) and his staff have developed a good working relationship with the Local Redevelopment Authority (LRA) to support planning efforts for the future productive re-use of MCAS El Toro. As the BRAC Environmental Coordinator, I have provided support to the BTC at several meetings with the LRA staff and I have briefed the Orange County Grand Jury and answered questions on environmental issues. I have attached letters from the LRA and the Grand Jury, enclosures 1 and 2, to demonstrate our effective coordination regarding the environmental cleanup program.

6284
1AU
1 Dec 1998

As for your concerns about the DSMOA funding, this is the first year the new Cooperative Agreement (CA) process for DSMOA funding is being implemented within the Department of Defense (DoD). This new process was designed to improve managing and bringing accountability to DSMOA. Enclosure 3 is a summary of the six-step process. Several key states participated in developing the CA process, including representatives from California. The purpose of the CA process is to build a budget from environmental cleanup requirements at each installation. Enclosure 4 provides a summary of the past and currently proposed Navy DSMOA/CA funding levels for California. The overall Navy DSMOA/CA funding trend is downward as cleanup goals are reached, sites are cleaned, program requirements and workload are reduced, and program maturity and lessons learned result in higher efficiency.

We are near the end of Step Four of the CA process. We have agreed on workload, shared information, provided clarification, and will discuss the reasonableness of the draft agreement. The State of California and the Navy have spent a considerable amount of effort in this new process. All bases in Northern and Southern California have been reviewed in detail by the Navy. As a comparison, the Navy estimate for MCAS El Toro was closer to the State of California draft CA, than other BRAC bases in Southern California.

Let me say in closing, that I will continue to work with DoD representatives and the State of California to support an appropriate level of funding for a cost effective and accelerated environmental cleanup program for MCAS El Toro. In the near future, DoD will finalize the funding levels of the CA for the state of California.

If you have any questions, please contact me at (949) 726-3470

Sincerely,



JOSEPH JOYCE
Base Realignment and Closure
Environmental Coordinator

Enclosure: 1. Letter from Redevelopment Authority
2. Letter from Orange Country Grand Jury
3. Cooperative Agreement Six-Step Process
4. DSMOA Roll-Up History

ENC 1



MCAS EL TORO LOCAL REDEVELOPMENT AUTHORITY
THE FEDERALLY RECOGNIZED LOCAL REDEVELOPMENT AUTHORITY FOR MCAS EL TORO

June 11, 1997

Colonel E.J. Ritchie
Assistant Chief of Staff
Base Realignment and Closure
MCAS El Toro
El Toro (Santa Ana), CA 92709

Dear Colonel Ritchie:

I wanted to take this opportunity to express the LRA's appreciation for Joseph Joyce's efforts in providing support to the LRA and the Restoration Advisory Board (RAB) on environmental cleanup efforts at MCAS El Toro.

Several months ago, the LRA formed a Technical Working Group comprised of LRA and County technical staff to address environmental remediation issues at the base. Mr. Joyce has attended several of the group's meetings which have included discussions regarding cleanup priorities based on the LRA's adopted Community Reuse Plan and anticipated phasing; cleanup alternatives; and draft proposed plans. A tour of restoration sites was also provided. Mr. Joyce's efforts have greatly assisted in resolving issues and concerns prior to the LRA's submittal of formal written comments on proposed remediation plans.

In addition Mr. Joyce has provided extensive support to the Restoration Advisory Board (RAB) and its Subcommittees in their efforts to provide community input into the cleanup program. Mr. Joyce has effectively Co-Chaired the RAB meetings, which are often contentious and divisive.

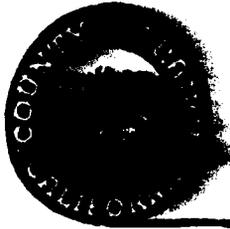
Again, we thank Mr. Joyce for his time and effort and look forward to continuing to work with him in expediting the restoration and ultimate reuse of MCAS El Toro.

Sincerely,

Courtney C. Wiercioch, Manager
MCAS El Toro Master Development Program

MBM:mbm
Ltrjoyce

c: Janice M. Mittermeier, CEO

**ORANGE COUNTY GRAND JURY****700 CIVIC CENTER DRIVE WEST • SANTA ANA, CALIFORNIA 92701 • 714/834-3320**

September 17, 1998

Joseph J. Joyce
Environmental Coordinator
BRAC Marine Corps Air Station
P. O. Box 95001
Santa Ana, CA 92709-5001

Dear Mr. Joyce:

On behalf of the 1998-99 Orange County Grand Jury, I want to thank you for the program and tour that you provided our Environment/Transportation Committee on Wednesday, September 16, in reference to your compliance with the many restrictions imposed upon you in preparing the base for a clean transfer of title. We were most impressed with your efforts to clean the water and soil of pollutants that are almost 50 years old.

We especially want to thank you for all the preparation that went into the program and the literature you provided for us. We all came away with a much better understanding of what you are trying to accomplish and we were impressed with the thoroughness of your efforts.

Very truly yours,

1998-99 ORANGE COUNTY GRAND JURY

John E. Swett
Foreman Pro Tem

JES:cj

Working Together to Achieve Cleanup: A Guide to the Cooperative Agreement Process

The Department of Defense and State Memorandum of Agreement/
Cooperative Agreement (DSMOA/CA) Program



The Cooperative Agreement Six-Step Process

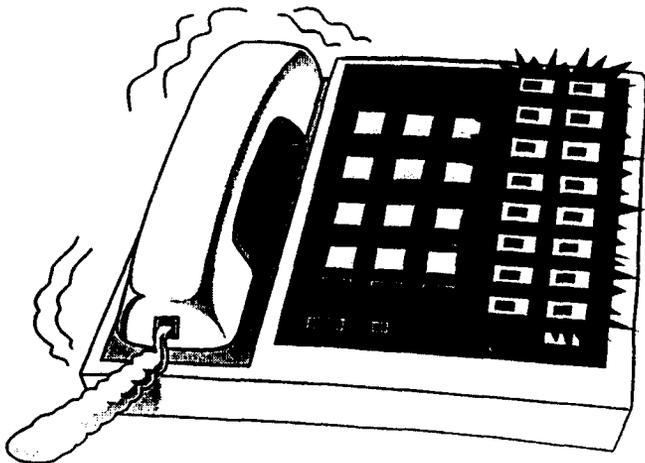


- 1 Initiate development of the CA package
- 2 Prepare the six-year cleanup plan
- 3 Develop the CA budget
- 4 Promote understanding of the CA budget
- 5 Prepare and submit the CA application
- 6 Obtain approval and funding



The Cooperative Agreement Process: Step 1

- **When:**
June - July
- **Objective:**
 - To initiate the development of the CA package
 - To notify the Services that the state is starting its two-year CA application process
- **Responsibility:**
State designated representative -- contact the installation representative designated by each Service
- **Products or Outcome:**
Scheduled meeting



The Cooperative Agreement Process: Step 2

- **When:**

June - August

- **Objective:**

To develop (for each installation) a joint six-year cleanup plan for all activities funded under DERP or BRAC that require involvement of the state

- **Responsibility:**

Service installations

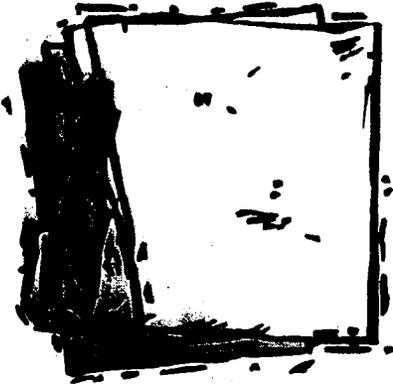
- (1) Prepare a detailed breakout of deliverables and activities during the two-year period
- (2) Prepare a summary of activities planned for years three through six
- (3) Share the plan with the state's project managers

State and installation project managers

- (1) Agree on the actual and planned activities
- (2) Coordinate efforts to develop the one-page narrative describing the six-year installation cleanup plan

- **Products or Outcome:**

- (1) Two-year work plan table (signed jointly)
- (2) Installation cleanup plan narrative for years three through six (signed jointly)



**Installation Cleanup Plan for Years FY+3 through FY+6
Armed Forces Base Tahuya**

Overview: AFB Tahuya's restoration program is conducting cleanups at six sites. Based on the work plan for FY+1 and FY+2, at the beginning of FY+3 the program will have two sites in long-term operation (LTO), two sites in the site investigation (SI) phase, and one site each in the remedial design (RD) and the remedial action (RA) phases. Long-term monitoring (LTM) and public involvement/community outreach through the installation's Restoration Advisory Board (RAB) will be ongoing elements of the restoration program.

Goals: The program's goals for the years FY+3 through FY+6 are:

- To protect human health and the environment through LTO at ongoing cleanup sites.
- To protect human health through LTM at nearby residential wells.
- To reach construction completion for two sites, and move them from RD/RA into LTO.
- To complete a treatability study at one site, and move the site from SI to LTM.
- To remove the contaminant source at one site, and issue a Determination of No Further Action.
- To ensure the effectiveness of the selected remedies through evaluation of LTM.
- To provide opportunities for public involvement, commensurate with the declining level of activity in the restoration program, through the RAB.

Public Health and The Environment: At the end of FY+6, cleanup actions are expected to have virtually eliminated the adjacent residents' risk of exposure to contaminated groundwater migrating off the installation. Installation residents' and workers' risks of unacceptable exposures to contaminants will be reduced significantly.

Summary Status of Cleanup Activity: The majority of cleanup work at the installation is expected to be completed late in the FY+3 through FY+6 time frame.

State Project Manager _____ Date _____
DOD Project Manager _____ Date _____
Date of Plan or Update _____

Note: This plan is provided as an example. States and Services will complete the Cleanup Plan to a mutually agreeable level of detail.

See Appendix F



ENCL

Roll-Up Hist.

			TOTAL			TOTAL	Adj. for-\$700K		TOTAL
	Year 1	Year 2	Jul94-Jun96	Year 1	Year 2	Jul96-Jun98	Year 1	Year 2	Jul96-Jun98
DERA									
Army									
Naval	4,136,112	4,136,112	8,272,224	3,554,220	2,962,644	6,516,864	3,904,224	3,312,648	7,216,872
Air Force									
FUDS									
DLA/STOCK FUNDS									
TOTALS BY MONTH									
BRAC 1									
Army									
Air Force									
TOTALS BY MONTH									
BRAC 2									
Army									
Naval	1,374,340	1,374,340	2,748,680	1,409,616	1,175,040	2,584,656	1,409,616	1,175,040	2,584,656
Air Force									
TOTALS BY MONTH									
BRAC 3									
Naval	2,035,476	2,035,476	4,070,952	2,526,732	2,106,240	4,632,972	2,526,732	2,106,240	4,632,972
Air Force									
TOTALS BY MONTH									
BRAC 4									
Army									
Naval	1,550,000	1,550,000	3,100,000	599,676	499,860	1,099,536	599,676	499,860	1,099,536
Air Force									
TOTALS BY MONTH									
	8,458,428	8,458,428	16,916,856	8,090,244	6,743,784	14,834,028	8,440,248	7,093,788	15,534,036

Enclosure (4)

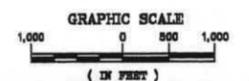
**REGULATORY CLOSURES OF
UNDERGROUND STORAGE TANK
SITES CALENDAR YEAR TOTALS**

CALENDAR YEAR	NUMBER OF REGULATORY CLOSURES
1995	9
1996	162
1997	81
1998	33
TOTAL AS OF OCTOBER 1998	285

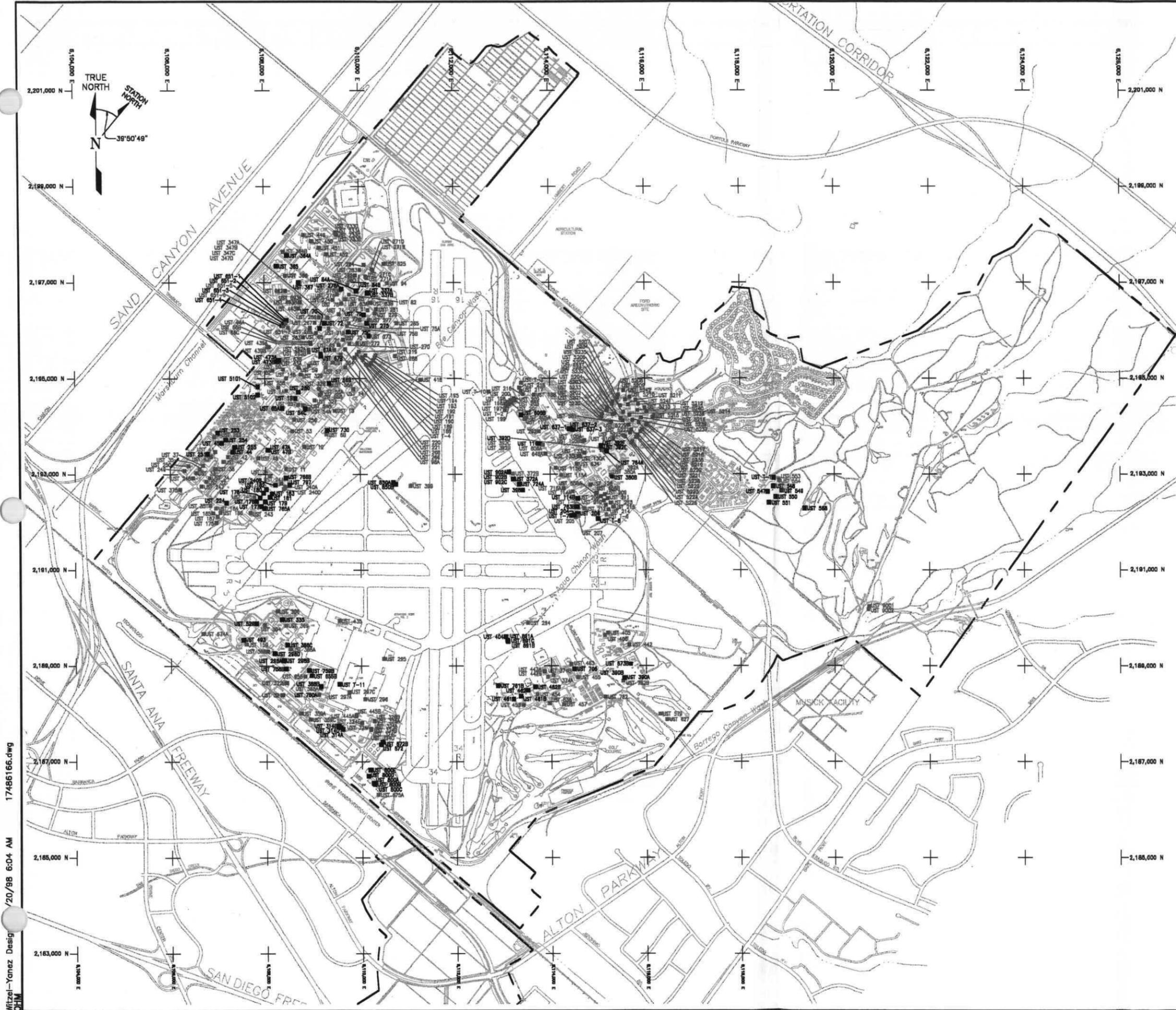
EXPLANATION:

- UNDERGROUND STORAGE TANKS (UST)
- CLOSED UNDERGROUND STORAGE TANKS

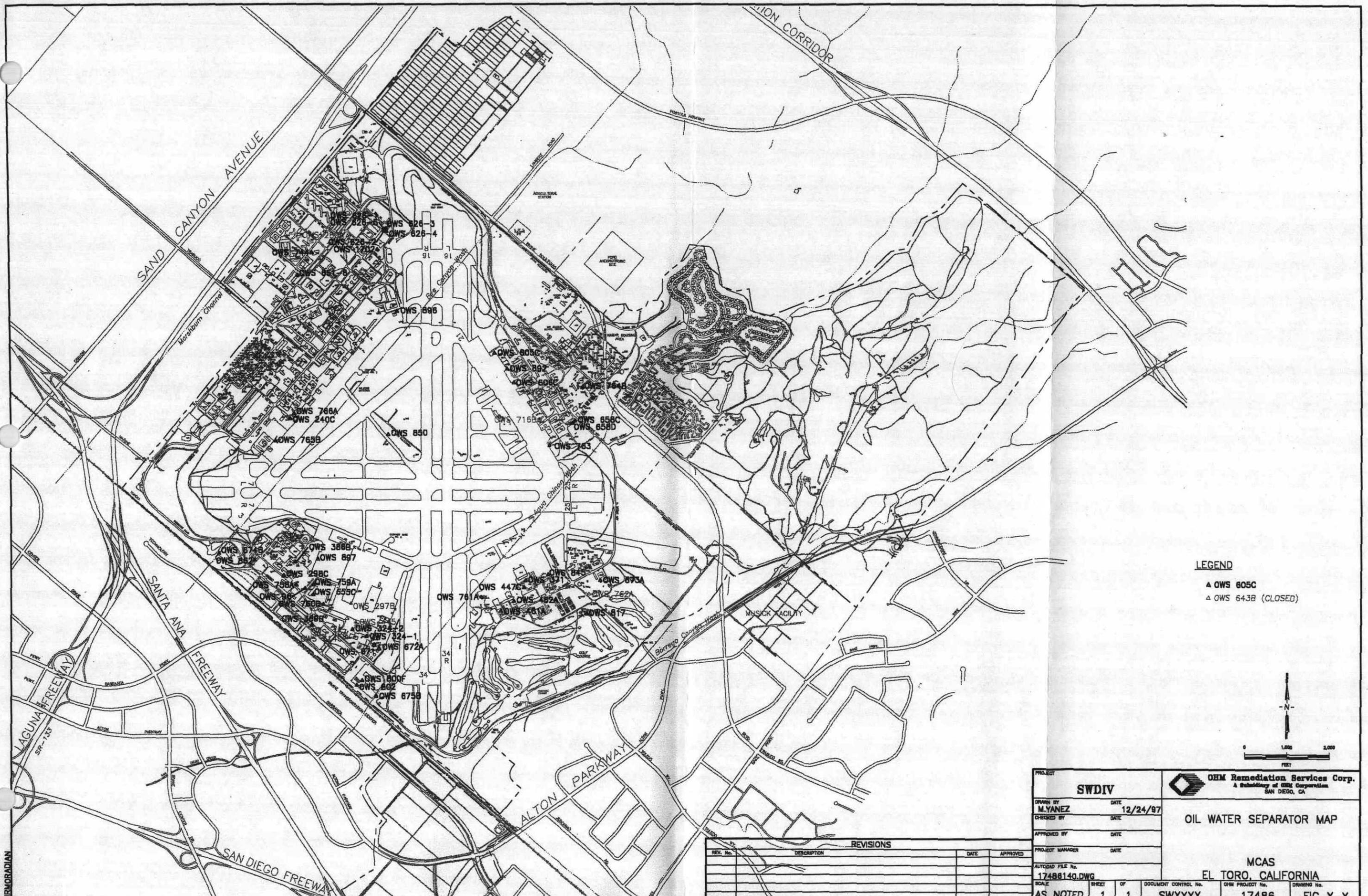
REFERENCE:
BECHTEL NATIONAL INC. DRAWING
FILE NO. 075U1703



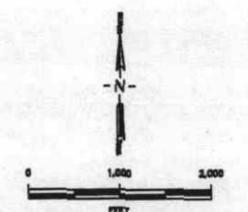
SOUTHWEST DIVISION NAVAL FACILITIES ENGINEERING COMMAND	
MCAS EL TORO, CA	
UNDERGROUND STORAGE TANK PROGRAM MAP	
FILE NO.	DATE
17486166.DWG	



17486166.dwg
20/98 6:04 AM
MRezel-Yanez Design
CHM



LEGEND
 ▲ OWS 605C
 ▲ OWS 643B (CLOSED)



PROJECT SWDIV		OHM Remediation Services Corp. A Subsidiary of OHM Corporation SAN DIEGO, CA	
DRAWN BY M.YANEZ	DATE 12/24/97	OIL WATER SEPARATOR MAP MCAS EL TORO, CALIFORNIA	
CHECKED BY	DATE		
APPROVED BY	DATE		
PROJECT MANAGER	DATE		
AUTOCAD FILE No. 17486140.DWG		SCALE	SHEET OF AS NOTED 1 1
DOCUMENT CONTROL No. SWXXXX		OHM PROJECT No. 17486	DRAWING No. FIG X_X

REVISIONS			
REV. No.	DESCRIPTION	DATE	APPROVED

MCAS EL TORO Presentation Records of Decision

~~8/8/97~~ RAB Meeting
12-2-98

Andy Piszkin

~~e.rabrods.978~~

Decision Documentation

- **Proposed Remedial Action Plan**
 - » Presents the lead agency's proposed remedial alternative (from Feasibility Study)
- **Record of Decision (ROD)**
 - » Formal and legal documentation of the remedy selection process
- **Administrative Record (AR)**
 - » Response action selection based upon AR

Record of Decision

- **Dept. of the Navy Lead Agency**
 - » U.S. EPA retains final authority (NPL sites)
 - » State support agency (non-NPL sites)
- **Categories:**
 - » No action, petroleum exclusion
 - » Action, interim action, contingency
- **Changes:**
 - » Scope, performance, cost
 - » Non-significant, significant, fundamental

Administrative Record

- **Decisions Based upon AR**
- **Maintained at or Near the Facility**
- **U.S. EPA Guidance**
- **Standard of Judicial Review**

Record of Decision Document Contents

- **Declaration & Signatures**
- **History of Site**
- **Community Participation**
- **Site Characteristics (Summary)**
- **Risk Assessment (Summary)**
- **Alternatives (Summary)**

Record of Decision

Document Contents (continued)

- **Comparative Analysis of Alternatives**
- **Selected Remedy**
- **Statutory Determinations**
- **Documentation of Significant Changes**
- **Responsiveness Summary**
- **Administrative Record Index**

MCAS EL TORO Underground Storage Tank (UST) Program Summary

**Restoration Advisory Board
12/02/98 Meeting**

**Andy Piszkin
UST98D.PPT**

Oversight Agencies

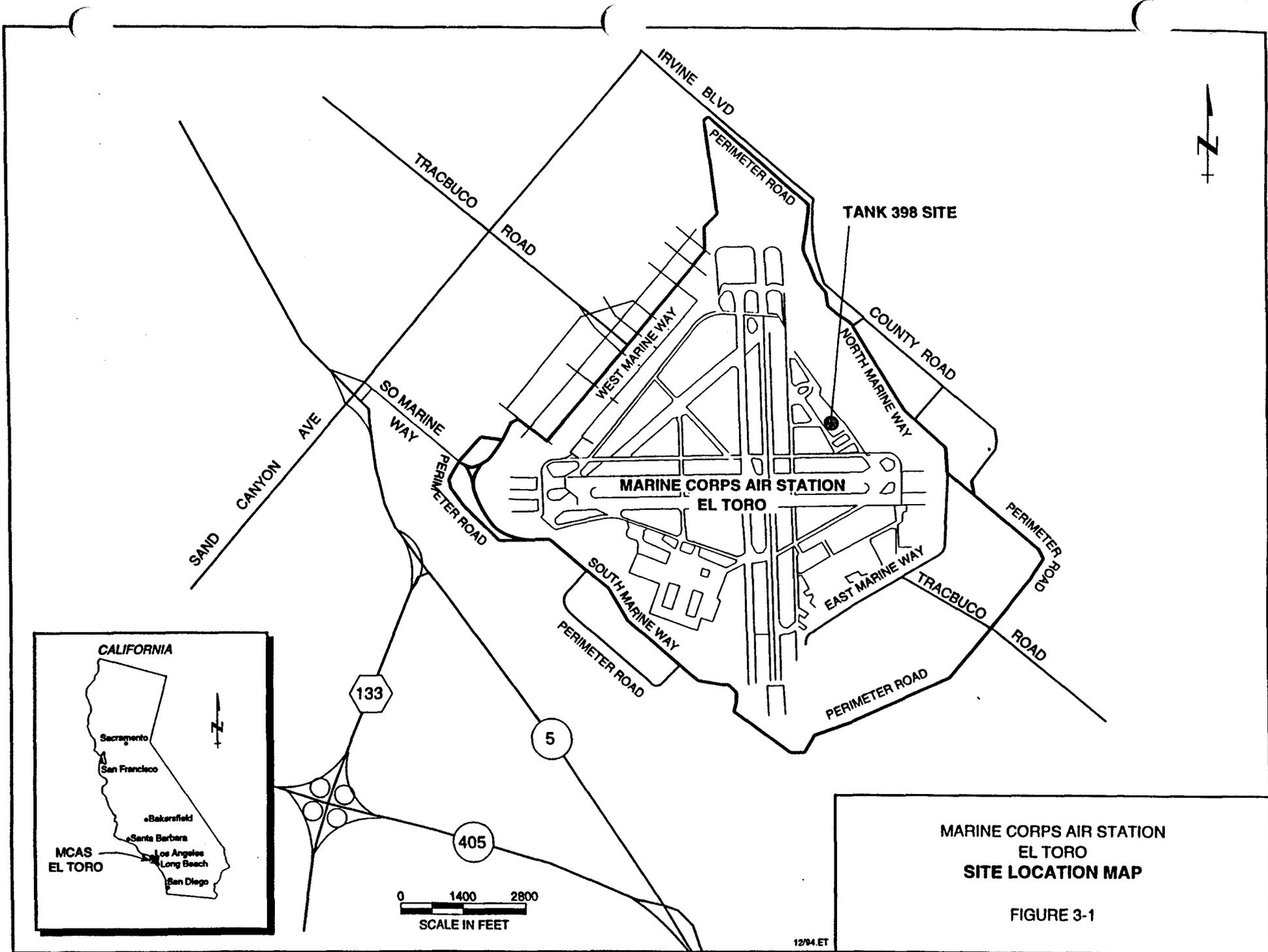
- **Orange County Health Care Agency (OCHCA)**
 - Tank removals
- **Regional Water Quality Control Board (RWQCB), Santa Ana Region**
 - Site assessments
 - Site remediation
 - Groundwater remediation

UST Program

- **398 Tanks or Former Tank Sites**
- **320 Tanks Removed**
- **285 Regulatory Closures**
- **30 Closures Under Review - RWQCB**
- **23 Under Investigation**
- **60 In Service or Await Investigation**

Oil/Water Separator Program

- **59 Oil/Water Separator (ows) Sites**
- **8 Regulatory Closures**
- **3 Closures Under Review - RWQCB**
- **10 Under Investigation**
- **38 In Service Supporting Operations**

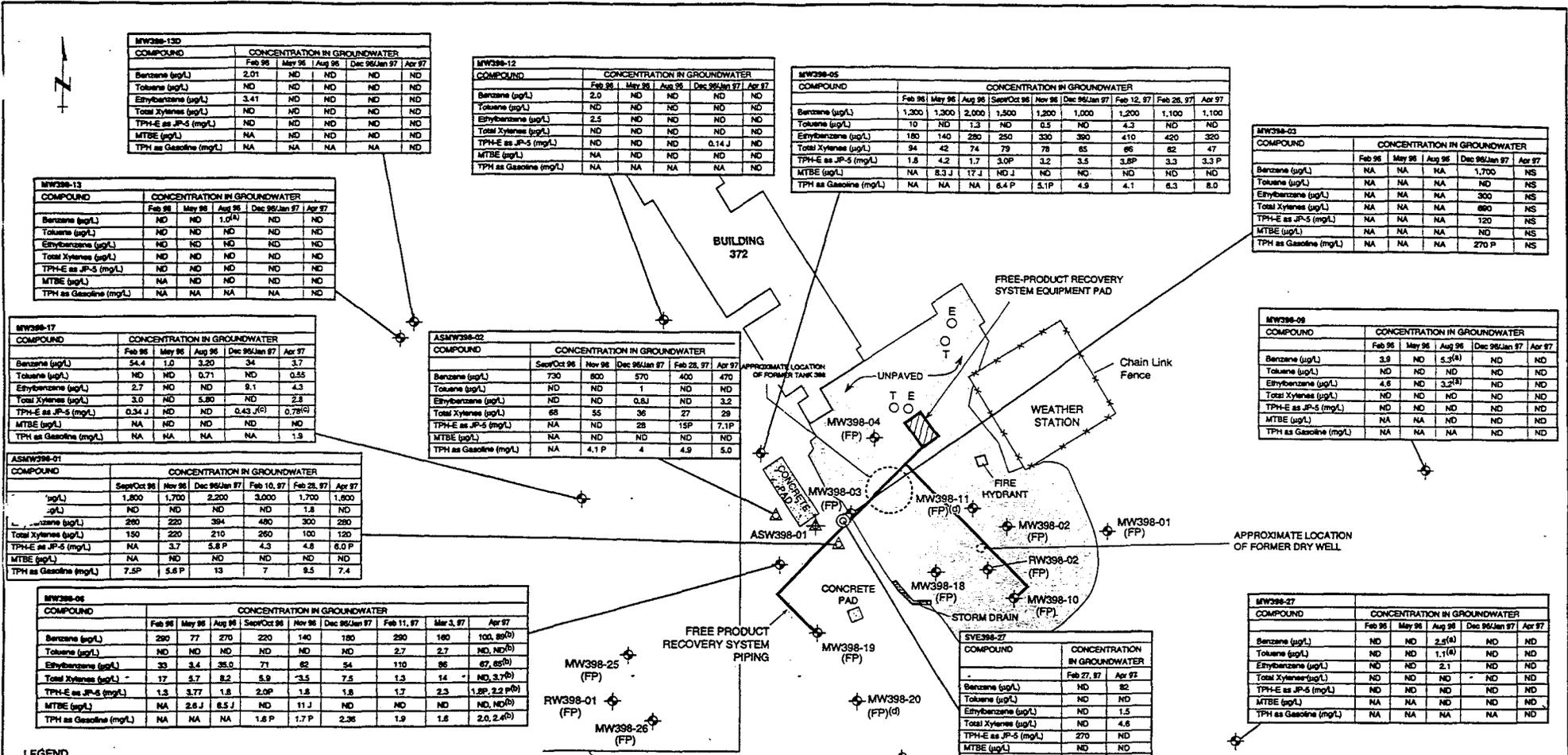


MARINE CORPS AIR STATION
EL TORO
SITE LOCATION MAP

FIGURE 3-1

12/94.ET

16716502



MW398-13D CONCENTRATION IN GROUNDWATER						
COMPOUND	Feb 96	May 96	Aug 96	Dec 96/Jan 97	Apr 97	
Benzene (µg/L)	2.01	ND	ND	ND	ND	ND
Toluene (µg/L)	ND	ND	ND	ND	ND	ND
Ethylbenzene (µg/L)	3.41	ND	ND	ND	ND	ND
Total Xylenes (µg/L)	ND	ND	ND	ND	ND	ND
TPH-E as JP-5 (mg/L)	ND	ND	ND	ND	ND	ND
MTBE (µg/L)	NA	NA	NA	NA	NA	ND
TPH as Gasoline (mg/L)	NA	NA	NA	NA	NA	ND

MW398-12 CONCENTRATION IN GROUNDWATER						
COMPOUND	Feb 96	May 96	Aug 96	Dec 96/Jan 97	Apr 97	
Benzene (µg/L)	2.0	ND	ND	ND	ND	ND
Toluene (µg/L)	ND	ND	ND	ND	ND	ND
Ethylbenzene (µg/L)	2.5	ND	ND	ND	ND	ND
Total Xylenes (µg/L)	ND	ND	ND	ND	ND	ND
TPH-E as JP-5 (mg/L)	ND	ND	ND	0.14 J	ND	ND
MTBE (µg/L)	NA	NA	NA	NA	ND	ND
TPH as Gasoline (mg/L)	NA	NA	NA	NA	ND	ND

MW398-05 CONCENTRATION IN GROUNDWATER										
COMPOUND	Feb 96	May 96	Aug 96	Sept/Oct 96	Nov 96	Dec 96/Jan 97	Feb 12, 97	Feb 26, 97	Apr 97	
Benzene (µg/L)	1,300	1,300	2,000	1,300	1,200	1,000	1,200	1,100	1,100	
Toluene (µg/L)	10	ND	1.3	ND	0.5	ND	4.3	ND	ND	
Ethylbenzene (µg/L)	180	140	280	250	330	390	410	420	320	
Total Xylenes (µg/L)	94	42	74	79	78	65	66	62	47	
TPH-E as JP-5 (mg/L)	1.8	4.2	1.7	3.0P	3.2	3.5	3.8P	3.3	3.3 P	
MTBE (µg/L)	NA	8.3 J	17 J	ND J	ND	ND	ND	ND	ND	
TPH as Gasoline (mg/L)	NA	NA	NA	6.4 P	5.1P	4.9	4.1	6.3	8.0	

MW398-03 CONCENTRATION IN GROUNDWATER						
COMPOUND	Feb 96	May 96	Aug 96	Dec 96/Jan 97	Apr 97	
Benzene (µg/L)	NA	NA	NA	1,700	NS	
Toluene (µg/L)	NA	NA	NA	NA	ND	NS
Ethylbenzene (µg/L)	NA	NA	NA	300	NS	
Total Xylenes (µg/L)	NA	NA	NA	690	NS	
TPH-E as JP-5 (mg/L)	NA	NA	NA	120	NS	
MTBE (µg/L)	NA	NA	NA	NA	ND	NS
TPH as Gasoline (mg/L)	NA	NA	NA	270 P	NS	

MW398-13 CONCENTRATION IN GROUNDWATER						
COMPOUND	Feb 96	May 96	Aug 96	Dec 96/Jan 97	Apr 97	
Benzene (µg/L)	ND	ND	1.0(A)	ND	ND	
Toluene (µg/L)	ND	ND	ND	ND	ND	
Ethylbenzene (µg/L)	ND	ND	ND	ND	ND	
Total Xylenes (µg/L)	ND	ND	ND	ND	ND	
TPH-E as JP-5 (mg/L)	ND	ND	ND	ND	ND	
MTBE (µg/L)	NA	NA	NA	NA	ND	
TPH as Gasoline (mg/L)	NA	NA	NA	NA	ND	

MW398-17 CONCENTRATION IN GROUNDWATER						
COMPOUND	Feb 96	May 96	Aug 96	Dec 96/Jan 97	Apr 97	
Benzene (µg/L)	54.4	1.0	3.20	34	3.7	
Toluene (µg/L)	ND	ND	0.71	ND	0.55	
Ethylbenzene (µg/L)	2.7	ND	ND	9.1	4.3	
Total Xylenes (µg/L)	3.0	ND	5.80	ND	2.8	
TPH-E as JP-5 (mg/L)	0.34 J	ND	ND	0.43 J(A)	0.78(A)	
MTBE (µg/L)	NA	ND	ND	ND	ND	
TPH as Gasoline (mg/L)	NA	NA	NA	NA	1.9	

ASMW398-02 CONCENTRATION IN GROUNDWATER						
COMPOUND	Sept/Oct 96	Nov 96	Dec 96/Jan 97	Feb 28, 97	Apr 97	
Benzene (µg/L)	730	800	570	400	470	
Toluene (µg/L)	ND	ND	1	ND	ND	
Ethylbenzene (µg/L)	ND	ND	0.8 J	ND	3.2	
Total Xylenes (µg/L)	68	55	36	27	29	
TPH-E as JP-5 (mg/L)	NA	ND	28	15P	7.1P	
MTBE (µg/L)	NA	ND	ND	ND	ND	
TPH as Gasoline (mg/L)	NA	4.1 P	4	4.9	5.0	

MW398-06 CONCENTRATION IN GROUNDWATER						
COMPOUND	Feb 96	May 96	Aug 96	Dec 96/Jan 97	Apr 97	
Benzene (µg/L)	3.8	ND	5.5(A)	ND	ND	
Toluene (µg/L)	ND	ND	ND	ND	ND	
Ethylbenzene (µg/L)	4.6	ND	3.2(A)	ND	ND	
Total Xylenes (µg/L)	ND	ND	ND	ND	ND	
TPH-E as JP-5 (mg/L)	ND	ND	ND	ND	ND	
MTBE (µg/L)	NA	NA	NA	NA	ND	
TPH as Gasoline (mg/L)	NA	NA	NA	NA	ND	

ASMW398-01 CONCENTRATION IN GROUNDWATER						
COMPOUND	Sept/Oct 96	Nov 96	Dec 96/Jan 97	Feb 10, 97	Feb 28, 97	Apr 97
Benzene (µg/L)	1,800	1,700	2,200	3,000	1,700	1,600
Toluene (µg/L)	ND	ND	ND	ND	1.8	ND
Ethylbenzene (µg/L)	280	220	394	490	300	280
Total Xylenes (µg/L)	150	220	210	260	100	120
TPH-E as JP-5 (mg/L)	NA	3.7	5.8 P	4.3	4.8	6.0 P
MTBE (µg/L)	NA	ND	ND	ND	ND	ND
TPH as Gasoline (mg/L)	7.5P	5.6 P	13	7	9.5	7.4

MW398-05 CONCENTRATION IN GROUNDWATER												
COMPOUND	Feb 96	May 96	Aug 96	Sept/Oct 96	Nov 96	Dec 96/Jan 97	Feb 11, 97	Mar 3, 97	Apr 97			
Benzene (µg/L)	290	77	270	220	140	180	2.7	160	100	80(B)		
Toluene (µg/L)	ND	ND	ND	ND	ND	ND	2.7	2.7	ND	ND(B)		
Ethylbenzene (µg/L)	33	3.4	35.0	71	62	54	110	86	67	85(B)		
Total Xylenes (µg/L)	17	5.7	8.2	5.9	2.5	7.5	1.3	14	ND	3.7(B)		
TPH-E as JP-5 (mg/L)	1.3	3.77	1.8	2.0P	1.8	1.8	1.7	2.3	1.8P	2.2 P(B)		
MTBE (µg/L)	NA	2.6 J	8.5 J	ND	11 J	ND	ND	ND	ND	ND(B)		
TPH as Gasoline (mg/L)	NA	NA	NA	1.6 P	1.7 P	2.36	1.9	1.6	2.0	2.6P		

MW398-27 CONCENTRATION IN GROUNDWATER						
COMPOUND	Feb 96	May 96	Aug 96	Dec 96/Jan 97	Apr 97	
Benzene (µg/L)	ND	ND	2.5(A)	ND	ND	
Toluene (µg/L)	ND	ND	1.1(A)	ND	ND	
Ethylbenzene (µg/L)	ND	ND	2.1	ND	ND	
Total Xylenes (µg/L)	ND	ND	ND	ND	ND	
TPH-E as JP-5 (mg/L)	ND	ND	ND	ND	ND	
MTBE (µg/L)	NA	NA	NA	NA	ND	
TPH as Gasoline (mg/L)	NA	NA	NA	NA	ND	

SVE398-27 CONCENTRATION IN GROUNDWATER		
COMPOUND	Feb 27, 97	Apr 97
Benzene (µg/L)	ND	82
Toluene (µg/L)	ND	ND
Ethylbenzene (µg/L)	ND	1.5
Total Xylenes (µg/L)	ND	4.6
TPH-E as JP-5 (mg/L)	ND	270
MTBE (µg/L)	ND	ND
TPH as Gasoline (mg/L)	430	7.7P

- LEGEND**
- ◆ Well Location
 - ⊙ Blowing Well Location
 - ▲ Air Sparging Monitoring Well Location
 - ⊙ Air Sparging Injection Well Location
 - Manhole
 - T Telephone
 - Electrical
- NA Not Analyzed
 NC Not Confirmed
 ND Not Detected
 NS Not Sampled
 TPH-E Total Petroleum Hydrocarbons, Extractable
 JP-5 Petroleum Hydrocarbon Mixture Classified as Jet Fuel
 MTBE Methyl Tertiary Butyl Ether

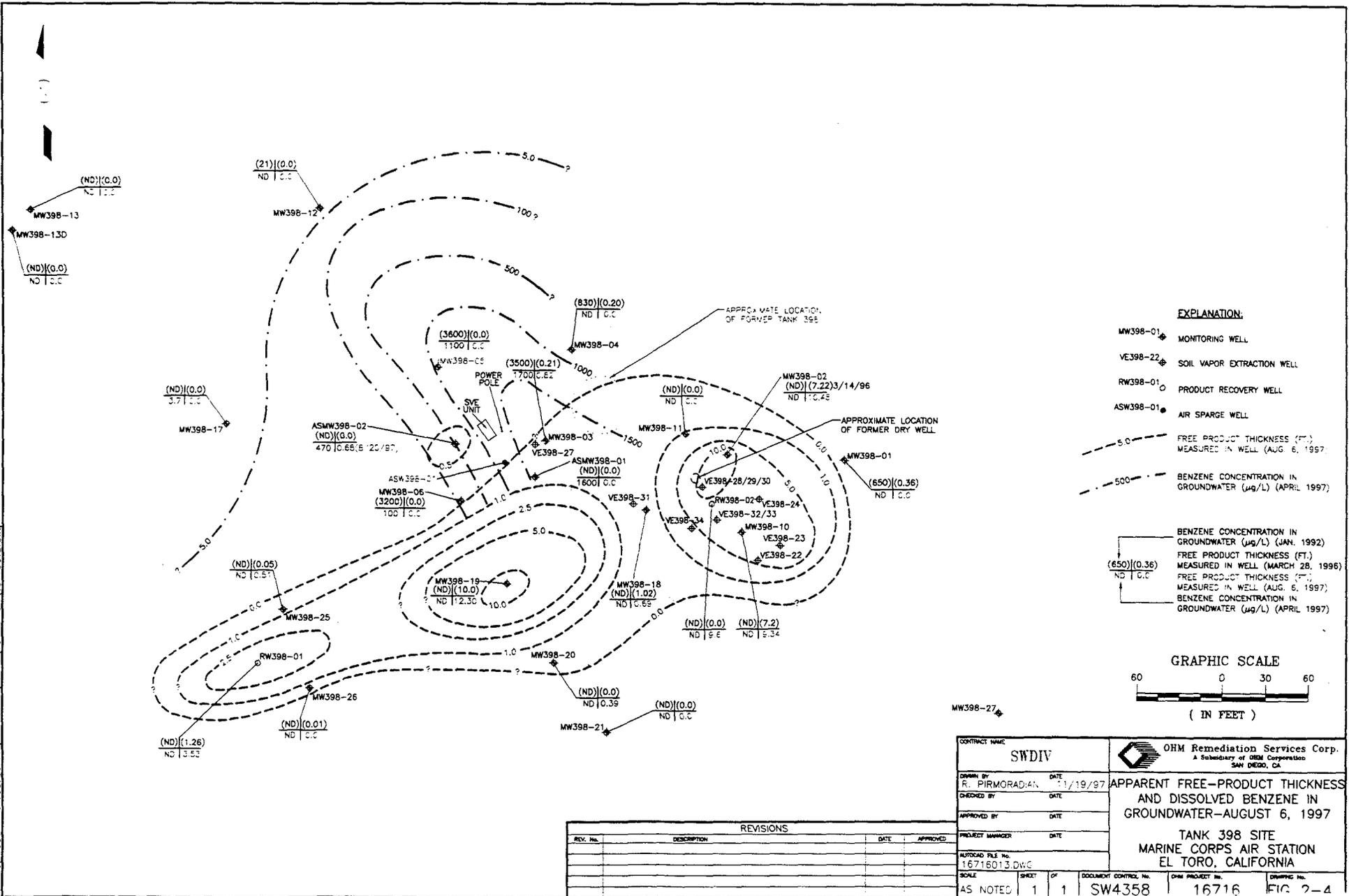
- (a) Data suspect due to equipment finite analytical results.
- (b) Duplicate sample results.
- (c) TPH-E reported as diesel.
- (d) Detection of free-product suspect due to potential interface probe malfunction.
- J Estimated value below laboratory analytical method detection limit.
- P Fuel pattern does not match laboratory standard.

MW398-21 CONCENTRATION IN GROUNDWATER		
COMPOUND	Mar 3, 97	Apr 97
Benzene (µg/L)	ND	ND
Toluene (µg/L)	ND	ND
Ethylbenzene (µg/L)	ND	ND
Total Xylenes (µg/L)	ND	ND
TPH-E as JP-5 (mg/L)	ND	ND
MTBE (µg/L)	ND	ND
TPH as Gasoline (mg/L)	ND	ND



CONTRACT NAME SWDIV		OEM Remediation Services Corp. A Subsidiary of OHM Corporation San Diego, CA	
DATE 10/13/97	DATE	ANALYTICAL RESULTS IN GROUNDWATER SAMPLES BY OHM APRIL 1997 TANK 398 SITE	
CHECKED BY	DATE		
APPROVED BY	DATE	MARINE CORP TORO STATION EL TORO, CALIFORNIA	
PROJECT MANAGER	DATE		
ATTACHED FILE NO. 16716502.DWG	SCALE	DOCUMENT CONTROL NO. SW4358	OEM PROJECT NO. 16716
AS NOTED	SHEET 1 OF 1	DRAWING NO. FIG 2-11	

Nov 19, 1997 14:33:29 F:\PROJ\ELCS\16716\10-16-97\16716013.dwg



Tank 398 Area

Overview of Remediation Activities

Activity Description	Approximate Date or Duration	Comments
Free Product (JP-5) Removal	April - November 1991	Approximately 1,000 gallons removed
Free Product (JP-5) Removal	May - September 1992	Approximately 1,000 gallons removed
Free Product (JP-5) Removal	February 1996 - June 1997	Approximately 7,800 gallons removed
Free Product (JP-5) Removal	November 1997 - September 1998	Approximately 1,800 gallons removed
Free Product Removed		11,600 gallons (total)
Soil Vapor Extraction (SVE) Treatment	Short-Duration Pilot Test of early 1990's	Mass removal was not calculated
Soil Vapor Extraction (SVE) Treatment	September 1996 - June 1997 (system was out of service for approximately 3 months (February - April 1997) for maintenance and repair activities	Approximately 99,000 pounds removed
Soil Vapor Extraction (SVE) Treatment	December 1997 - September 1998	Approximately 24,000 pounds removed
Petroleum Hydrocarbon Mass Removed by SVE		123,000 pounds (total)

Perchlorate

December 2, 1998

Kevin Mayer, U.S. EPA Region 9, 75 Hawthorne St., San Francisco CA 94105-3901
(415)744-2248 mayer.kevin@epamail.epa.gov

History of Perchlorate as an Environmental Concern

EPA aware of perchlorate released at sites in CA and NV by early 1980s.
At San Gabriel Superfund Site an effort to monitor in 1985 unsuccessful (analytical limits)
At Aerojet site near Sacramento, monitor wells had part per million perchlorate in 1990s
In 1992-1995, EPA set "provisional reference dose" at 4 to 18 parts per billion
By March, 1997, an analytical method was developed (Cal DHS) to detect 4 ppb.

Uses of Perchlorate

Manufacturers report that 90% or more is for Solid Rocket Fuel Oxidizer
Nearly all the rest is for explosives and fireworks
Nearly all is man-made, but perchlorate is found in nitrate deposits in Chile (fertilizer)

Chemistry

Highly oxidized chlorine (ClO₄)-
In solid form: a salt with Ammonium, Potassium etc. In water: dissociates into anion
Highly soluble, mobile, stable (due to structure), difficult to detect and to treat.
Ion chromatography could detect 400 ppb until March 1997 improvements to 4 ppb

Toxicology

Human drug tests in 1950's show perchlorate disrupts thyroid by mimicking iodide
Other possible side effects, including death, at dosages over 100 mg per day
Many uncertainties, especially long term effects and effects on children and fetuses
Studies of exposed populations inconclusive
New studies underway, will have revised reference dose in early 1999

Occurrence in the Environment

Since last year, perchlorate has been found in 13 states, likely to be in most others too.
California has 14 known sites, 144 public water supply wells
Colorado River contains 5 - 9 ppb from source near Las Vegas, NV (15 Million people)

Treatment Technologies

Standard GAC (carbon), Air-Stripping and Chemical Reduction are ineffective
Biological Treatment works, adding food source for bacteria to use up all oxygen
Reverse Osmosis and Ion Exchange are effective, expensive and being tested
Millions of dollars of research underway to find treatment for water supplies

Information Needs

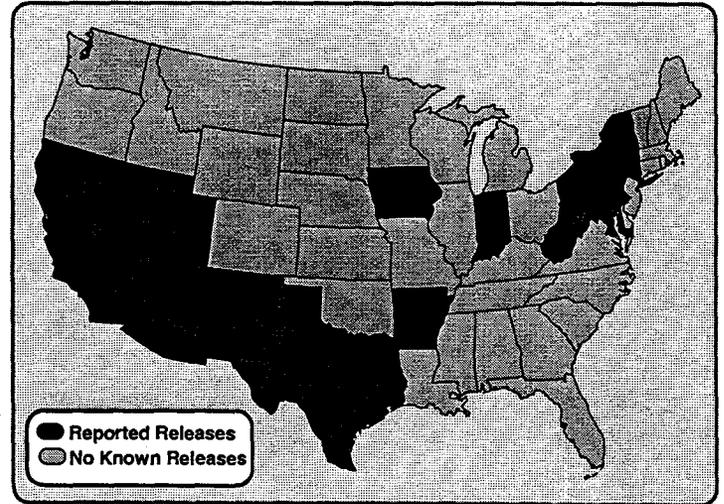
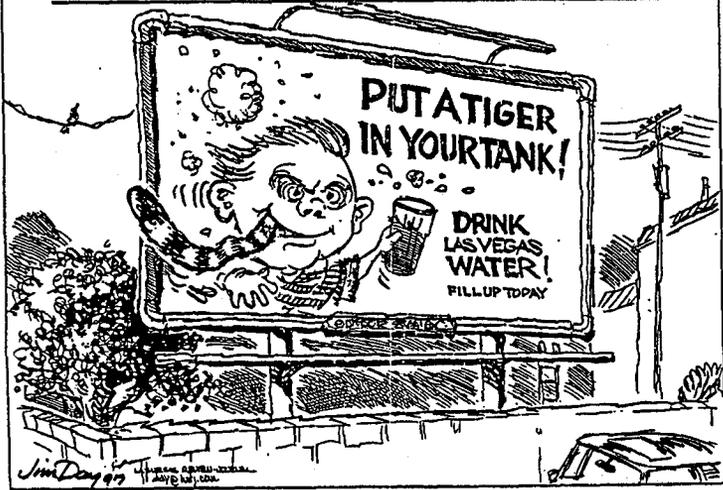
Toxicity, Treatment Technologies, Ecological effects (agri.), Published Analytical Method

Regulatory Authority

Not a "listed" hazardous material, but under consideration for federal drinking water regs.
EPA may issue "Health Advisory" if information warrants
California has established a drinking water "Action Level" of 18 ppb, other states waiting

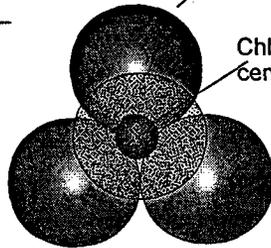
WEB Sites : www.epa.gov/ogwdw/ccl/perchlor/perchlo.html
www.dhs.cahwnet.gov (then search for 'perchlorate') or continue...
/ ps / ddwem / chemicals / perchl / perchindex.htm

SOUTHERN NEVADA WATER AUTHORITY PUTS A POSITIVE SPIN ON REPORTS THAT A ROCKET FUEL CHEMICAL WAS DETECTED IN LAKE MEAD AND LOCAL WELLS.



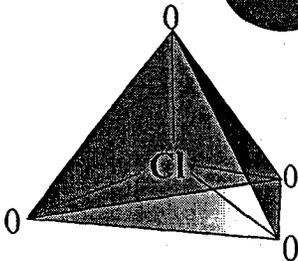
States with Environmental Releases of Perchlorate

Perchlorate



Oxygen atoms on points of tetrahedron

Chlorine atom in center of tetrahedron



NEWS ITEM: ROCKET FUEL CHEMICAL IN COLORADO RIVER WATER WORRIES NATIVE AMERICAN FARMERS

Las Vegas Review
Mar 21, 1998





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

Kistner

November 10, 1998

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

Re: MCAS El Toro Federal Facilities Agreement (FFA) Extension Request

Dear Mr. Joyce:

The United States Environmental Protection Agency (EPA) has received your letter dated November 3, 1998, requesting a six month extension under the FFA schedule for submitting a Draft Record of Decision (ROD) for Operable Unit (OU) 2C - Landfill Sites 3 & 5. Your letter stated that the additional time was necessary to address technical and legal concerns expressed by the Base Closure Team (BCT).

Although EPA agrees that additional time is necessary to address outstanding technical and legal concerns, we cannot approve your request until we have received a schedule of activities (meetings, conference calls, milestones, etc.) which you envision, demonstrating to the BCT that there is a clear path and time table to resolution of the issues. The need for an additional six months would also be better supported by such a submittal. I would be very happy to discuss these activities with you prior to a formal submittal.

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

Sincerely,

Glenn R. Kistner

Glenn R. Kistner
Remedial Project Manager
Federal Facilities Cleanup Branch

cc: Patricia Hannon, RWQCB
Gregory Hurley, Rab Co-Chair
Tayseer Mahmoud, DTSC
Andy Piszkin, SWDIV



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

December 1, 1998

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

**Re: EPA Concerns and Recommendation on Proposed Remedy for Sites 3 & 5 Landfills, MCAS
El Toro**

Dear Mr. Joyce:

This letter is to express EPA's concerns on the Navy's proposed soil caps for Sites 3 and 5 landfills and to suggest a mechanism that could alleviate both EPA's concerns and the concerns of the State regulatory agencies.

As you are aware, the California Integrated Waste Management Board (IWMB) has expressed both written and verbal concerns that irrigation of the landfills with the type of cover proposed by the Navy, could cause generation of methane gas and ultimately lead to threats to public health and safety. In response to regulatory agency concerns, the Navy submitted two modeling reports: a Draft Technical Memorandum on Landfill Gas Emissions for Inactive Landfills; and, a Draft Technical Memorandum on UNSAT-H Infiltration Modeling for Landfill Covers.

After reviewing the Technical Memorandums, the IWMB concluded that the methane gas model did not demonstrate that there would be minimal methane gas generation under an irrigated reuse scenario. They reiterated the need for a comprehensive landfill gas survey and/or long-term gas monitoring before any conclusions could be made on a gas collection system. The IWMB further stated that without a liner, they could not support irrigation under the Navy's proposal unless it was demonstrated by either long-term monitoring or a landfill waste characterization study that increased moisture would have minimal impact on landfill gas generation and waste settlement.

Furthermore, representatives of the IWMB have stated that they are unaware of any sites in California where without prior waste characterization, there is irrigation of a monolithic soil cover to support a golf course. This would make it even more difficult for the regulatory agencies to support irrigation under the Navy's proposal.

Based on the above, EPA believes that a waste characterization study of the Sites 3 and 5 landfills has merit and recommends that such a study be carried out.

Although the Navy has elected to follow EPA's Presumptive Remedy guidance for landfills (which does not require waste characterization studies), it is not unusual to deviate from guidance if it makes sense under the site circumstances. As much as EPA would like to have "one size fits all" guidance, there may be situations where it makes sense to conduct additional field work, especially if there are data gaps that could readily be addressed. In the case of the Sites 3 and 5 landfills, there is some anecdotal evidence (based on interviews of former Marine/Navy employees) that there was little organic material left in the landfills and therefore less likelihood of significant methane gas generation, however, there is still a lack of field data to support these assumptions.

Although conducting a waste characterization study would undoubtedly cost more money and add more time to the FFA schedule, we think it would be both money and time well spent. As examples, the landfill remedies for the NTC landfill in San Diego and the three landfills at Moffett Naval Air Station near San Francisco, were modified to cheaper remedies after waste characterization studies were performed and found that the landfills were significantly smaller than originally believed. The resulting savings for the NTC landfill are estimated to be approximately one million dollars.

For El Toro, visual confirmation through a waste characterization study that the landfill wastes do indeed contain little organic matter would address regulatory agency concerns, allow irrigation of the monolithic soil cover for any anticipated future land use and avoid a likely formal dispute resolution process. Such a study could also eliminate the need for a liner and a gas collection system. Other potential benefits would include less stringent land use restrictions (institutional controls) and less monitoring.

EPA encourages the Navy to give serious consideration to conducting a waste characterization study at the Sites 3 and 5 landfills, both for the potential cost savings and as an alternative to dispute. EPA would also be willing to grant the Navy any reasonable FFA extension request to allow a waste characterization study to proceed.

As a next step, I suggest a meeting between the Navy, EPA, the IWMB and other interested agencies (the Local Reuse agency) to discuss the specific requirements such a study would include.

Please contact me at your earliest convenience to let me know your thoughts on this proposal.

Sincerely,



Glenn R. Kistner
Remedial Project Manager
Federal Facilities Cleanup Branch

cc: Patricia Hannon, RWQCB
Gregory Hurley, RAB Co-Chair
Peter Janicki, IWMB
Tayseer Mahmoud, DTSC
Polin Modanlou, MCAS El Toro LRA



Department of Toxic Substances Control



Jesse R. Huff, Director
5796 Corporate Avenue
Cypress, California 90630

October 13, 1998

Peter M. Rooney
Secretary for
Environmental
Protection

te Wilson
vernor

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

Dear Mr. Joyce:

COMMENTS ON DRAFT ENGINEERING DESIGN REPORT (EDR), OPERATING AND MAINTENANCE MANUAL (O&MM), CONSTRUCTION QUALITY/QUALITY CONTROL PLAN (QA/QC), AND CONTINGENCY PLAN (CP) FOR VADOSE ZONE REMEDIATION AT OPERABLE UNIT 2A, SITE 24, MARINE CORPS AIR STATION (MCAS) EL TORO

The Department of Toxic Substances Control (DTSC) has completed the review of the above subject documents dated August 11, 1998, prepared by Bechtel National Inc. The EDR provides the preliminary engineering design, specifications, and implementation methodology for a soil vapor extraction (SVE) system to address volatile organic compounds (VOC)-contaminated soil at Site 24. The O&MM provides instructions to operate and maintain the SVE system to the performance planned in the EDR. The QA/QC Plan establishes the framework within which design and construction quality procedures for installation of the proposed SVE system will be implemented and assure, with reasonable degree of certainty, that the completed remediation system meets design criteria, plans, and specifications. The CP is prepared to protect the local population that would be affected in the event of an accident or emergency and to verify that vadose zone remediation is complete.

DTSC comments are as follows:

GENERAL COMMENTS:

EDR: Overall, the *draft Engineering Design Report* (EDR) is a comprehensive and well-written preliminary design document. It represents preliminary design. A detailed design will be prepared and submitted for review at a later date. The EDR examines and takes into consideration all issues relevant to the development of the Soil Vapor Extraction (SVE) remedial design. The overall design approach of the vapor extraction and treatment system is reasonable,

California Environmental Protection Agency

as are the approaches to the SVE well installation, piping, and vapor treatment. The proposed implementation of the system and its operation and maintenance also appear reasonable. However, the specific comments below should be resolved prior to the submittal of the more detailed design package.

O&MM: The *Draft Operation and Maintenance Manual (O&MM)* contains general information on operating procedures, philosophies, and equipment. The O&MM also contains a well-supplied equipment description and specifications section (*O&MM Appendix A*). However, as noted in *Section 1, Introduction*, the O&MM is presently incomplete in that specific operating and maintenance instructions are not included. The O&MM notes that such information will be incorporated into the O&MM following the receipt of SVE operational and maintenance details, history, and experience from the previous operators of the equipment at Norton Air Force Base. Additional specific comments are provided below.

QA/QC: The *Construction Quality Assurance/Quality Control Plan (QA/QC)* appears to be a complete and adequate document. See specific comments below.

CP: Except the below noted comments, the *Draft Contingency Plan (CP)* appears to be reasonable and complete.

SPECIFIC COMMENTS:

1. EDR, Page 3-3, Figure 3-1, Vadose Zone Cross Section A-A'

The scale shown for the *Index Map* is unclear.

2. EDR, Page 4-3, Figure 4-1, Site 24 - SVE Equipment Process Flow Diagram

The crossing of process lines for the VGAC system are not shown correctly. The valve upstream of VGAC vessel B shown as closed should be labeled as open instead. The arrow showing the flow of cooling tower blowdown to the sewer should be reversed.

3. EDR, Page 4-8, Section 4.1.3.6, Instrumentation and Controls, Flow Indicators

I recommend adding instrumentation that allows for both instantaneous flow readings in standard cubic feet per minute (scfm), or in actual cubic feet per minute (acfm) if appropriate instantaneous pressure and temperature indicators are also available at the same location. I also recommend that an accurate flow-totalizer instrumentation is also

installed to monitor the cumulative extracted (and emitted) soil gas amount, which is important in terms of air emission and soil pore volume exchange considerations.

4. EDR, Page 4-11, Section 4.2.1.4, Treatment (TCE) System Capacity, and Page 4-12, Section 4.2.4.1, Granular Activated Carbon

The initial rate of vapor-phase granular activated carbon (VGAC) consumption was estimated at approximately 180 pounds/day (lbs/day). This would imply that a vessel containing 20,000 pounds of VGAC would last approximately 15 to 17 weeks before saturation would require its replacement. Such an estimate is incorrect.

Appendix G contains the supporting calculations for VGAC consumption rates. The *Appendix* also contains a copy of a fax memorandum from Sandi Marshall of U.S. Filter/Westates to Yakup Nurdogan of Bechtel Corporation, dated June 11, 1998. Ms. Marshall notes in the first paragraph that the VGAC consumption rate estimate is based on the "assumption that your concentration units were by volume and not weight." This assumption seems to be the source of a rather large calculational error. It appears that U.S. Filter/Westates used, for instance, a trichloroethene (TCE) concentration value of 279 parts per billion by volume (ppbv) instead of 279 micrograms per liter ($\mu\text{g/l}$), as the basis of its calculations. Air concentrations expressed in $\mu\text{g/l}$ (mass per volume) are clearly not equivalent to ppbv (volume per volume).

The initial influent TCE concentration used in the U.S. Filter/Westates calculations was 0.2790 parts per million by volume (ppmv). The correct value used should have been 51 ppmv which is equivalent to 279 $\mu\text{g/l}$, the design influent TCE concentration value, as indicated in *Table 4-8*, on *page 4-43*, and in *Table 4-9* on *page 4-45*. Similar errors were committed in each of the VGAC adsorption calculations for 1,1-dichloroethene (1,1-DCE), tetrachloroethene (PCE), and Freon 113 (1,1,2-trichloro-1,2,2-trifluoroethane).

Based on a theoretical vapor phase activated carbon adsorption isotherms, We estimated the VGAC consumption rates based on the design influent concentration values. The estimates are shown in the Table below.

According to the Table, about 2,900 pounds of VGAC will be initially consumed daily. At this rate, a vessel containing 20,000 pounds of VGAC will have to be replaced approximately weekly, as opposed to the proposed 15 to a 17-week cycle.

Based on this significantly higher VGAC consumption rate, DTSC recommends revisiting, checking, and revising all VGAC calculations and, if warranted, reconsidering the design basis for the number of VGAC vessels. Operation and maintenance (O&M)

considerations should also be revised, if warranted. At least initially, it may be prudent to consider leasing two more 20,000-pound VGAC units, should economics support it. In addition, we also recommend reviewing the historical VGAC usage rates of the system during its operational period at Norton AFB to attempt to validate VGAC vendor claims, if possible. The soil gas contaminant-makeup at Norton AFB was comparable to that at MCAS El Toro.

If possible, we recommend consideration of other soil gas treatment technologies, such as catalytic oxidizers with a hydrogen chloride (HCl) scrubbers. An economic comparison of capital- and operation and maintenance costs of VGAC versus other treatment technologies may favor the temporary use of a treatment technology other than VGAC until the influent TCE concentrations decay to lower levels.

Table: VGAC consumption rate calculations based on theoretical adsorption isotherms

Constituent	Molecular weight	Design initial conc. (µg/l)¹	Design initial conc. (ppmv)²	Theoretical VGAC loading rate (wt%)³	Adjusted VGAC loading rate (wt%)⁴	VGAC consumption rate (lbs/d)⁵
Freon 113	187.4	482	61.7	37	22	1461
TCE	131.4	279	51.0	29	17	1079
1,1-DCE	99.0	15	3.6	5	3	337
PCE	165.8	2	0.3	20	12	11
Total						2888

Notes: ¹ As given in EDR, Table 4-9, page 4-45.

² [ppmv] = [µg/l] * 24 / molecular weight.

³ From theoretical vapor phase adsorption isotherms. Note that these isotherm values may be somewhat different from those provided by Westates.

⁴ 60% conservative adjustment to account for field effects, such as incomplete saturation, competition between species, etc.

⁵ VGAC consumption rate in pounds per day based on a 24-hour day and 7,500 scfm volumetric throughput.

5. EDR, Page 4-26, Section 4.3.1.4, Preliminary Well Field Layout

This section proposes to increase the design effective radii of influence (EROI) by 150 to 200 percent in areas where the level of contamination is lower than 500 µg/l in soil gas or less than 30 micrograms per kilogram (µg/kg) in soil (of TCE, I assume). While such

appears to be a reasonable and valid approach, the 500 µg/l / 30 µg/kg concentration threshold appears rather arbitrary, as are the 150 to 200 percent enlargements of the EROIs. Normally, we generally recommend that EROS be defined as the radial distance from the vacuum well at which distance the vacuum is at least -0.2 inches of water, but preferably higher.

We accept such a modification to the EROIs, but recommend justification of the selected concentration thresholds values and of the selected increase of the EROIs in terms of quantifiable remediation aspects, such as the effect on remediation times, on pore volume exchanges, on SVE well spacings, and on remediation costs.

We also recommend including data or graphics to show what will be the areal extent of this or what fraction of the Site 24 remediation area will fall under such an approach. Perhaps correcting the deficiency noted in the next comment, below, will also satisfy this recommendation.

6. EDR, Page 4-26, Section 4.3.1.4, Preliminary Well Field Layout

No EROS are shown in *Figures 4-2 through 4-4*.

7. EDR, Pages 4-29 through 4-35, Table 4-6, Summary of SVE Well Information

Throughout the EDR, the 30% well installation approach is noted. Under this approach, 30% of the initially projected SVE wells are proposed to be installed. Only after the evaluation of the performances of the wells in the 30% phase will a decision be proposed about the installation of additional SVE wells. While I support this approach as reasonable and flexible, I am unable to reconcile the numbers. For example, at this level of design 233 SVE wells are thought to be needed. Thirty percent of 233 is 70 wells. Yet in *Table 4-6*, 106 SVE wells, or 45% are marked as part of the "30% phase." In addition, assuming that the estimated vapor production rates are realized, the 106 wells of the "30% phase" will produce nearly 60% of the total flow, or about 4,200 scfm out of about 7,100 scfm. While I am not particularly concerned about the nomenclature or whether the initial phase is 30% or 45%, the "30%-phase" appears to be a misnomer. I recommend that these loose definitions are tightened or better defined to more closely reflect the intent behind the design and to eliminate misconceptions.

8. EDR, Page 4-47, Figure 4-9, SVE Well Field and Piping Plan

The moisture trap on the 16-inch vapor line shown on *Bechtel Drawing No. 162-M01*, and generally located between SVE wells 26/26A 28/28A is not shown in *Figure 4-9*.

9. EDR, Page 5-1, Section 5, Implementation

The proposed field procedures for the installation of the SVE system appears reasonable. The selected locations of, and the installation and construction of, the SVE wells appear reasonable.

10. EDR, Page 5-9, Figure 5-2, Proposed SVE Well Construction Groups

It is unclear how monitoring of the radii of influence is proposed to be conducted. The spacing of some of the 30% SVE wells is rather large, implying that their use as monitoring wells may be limited.

11. EDR, Page 5-12, Section 5.3, SVE Well Testing

Each of the SVE wells in the "30% phase" are proposed to be tested after installation to determine the performance of the wells. The proposed tests would essentially be short, condensed, SVE pilot tests to evaluate the vacuum versus flow characteristics of the well, as well as to gather other information about the well, such as its vacuum radius of influence. The proposed duration of the tests is two hours and would include four vacuum steps of 30 minutes each. Soil vapor samples are proposed to be collected for *US EPA Method 8021* analysis during the first vacuum step.

Normally for formal SVE pilot tests, we recommend U.S. EPA's preference which states that SVE pilot tests "*should be conducted for a long enough period to assure that vapor concentrations are representative of extended system operation,*" and that the tests "*should be conducted long enough to extract several (probably >5) pore volumes of soil gas*"¹. Neither of these conditions would be met during the proposed SVE tests, and all data gathered would reflect characteristics of transient conditions. In addition, the observed soil vapor levels would be substantially higher than what would be seen during normal SVE extraction operations. Thus, we are concerned about the validity and thus usefulness of the data gathered during such unusually short SVE extraction tests. I recommend that the proposed SVE well testing be further discussed and the validity of its results and their intended purpose is further examined.

¹ "US Environmental Protection Agency (US EPA), Solid Waste and Emergency Response (1995), *Innovative Site Remediation Technology, Vacuum Vapor Extraction, Volume 8*, EPA 542-B-002, page 3.78.

12. EDR, Page 5-19, Section 5.4.3, SVE System Start-up and Page 6-6, Section 6.2.1, Initial Start-up and Testing

In these sections it is noted that the SVE system will not be started up until about 40-45% of the SVE wells are available. The minimum vapor flow required is estimated to be approximately 3,000 scfm. On Page 4-5, Section 4.1.2: *Design Criteria*, it is noted that the system is capable of stable operation at 2:1 turndown. For a single 4,250 scfm blower, this turndown means operating at about 2,125 scfm, which is substantially lower than the 3,000 scfm noted in Section 5.4.3. While I realize that these numbers are approximate, I recommend that the magnitude of these discrepancies be reduced.

13. EDR, Page 5-19, Section 5.4.3, SVE System Start-up

Reference to Section 8 for SVE system start-up and operating schedule is not accurate. The correct reference is Section 6.

14. EDR, Page 6-12, Figure 6-1, Operation and Maintenance Data Form

We recommend adding the following entries to the O&M Data Form: 1) Instantaneous air flow rate in scfm; 2) Cumulative extracted volume in scfm; 3) position of blower air inlet valves; and 4) approximate amounts of condensate removed from each of the condensate sources in the system.

15. EDR, Page 6-13, Section 6.3.3.3, Moisture Separator and Condensate Collection System

This section notes that the system must be shut down to access the three condensate traps. I recommend the consideration of valves downstream of the traps that would allow isolation of the traps for purposes of servicing and pumping. This would require shutting off only a few wells upstream of the traps instead of the trap's entire trunk line or the entire SVE system. According to *Bechtel Drawing 162-M01*, the trap on the 6-inch vapor line servicing SVE wells 13, 15, 16, 17, etc., already shows a downstream valve. I recommend adding a similarly located valve for the other trap on the 6-inch line servicing SVE wells 127, 128, 129, etc. While the benefit of such an approach is clearly less for the third trap located on the 16-inch vapor line, I recommend its consideration, also. (I assume that the SVE system does not have to be shut down for Condensate Sumps A, B, C, E, F, G, and I to pump condensate to the treatment compound.)

This section also notes that the traps will also be pumped out when vacuum measurements indicate increasing vacuum loss across the traps. *Bechtel Drawing 162-*

M01 does not indicate any means of measuring directly or indirectly the pressure drop across the traps. I recommend clarifying such a statement or modifying the drawing to include pressure measurements across the traps.

Expanding upon the above, according to the Norton AFB drawings (by Earth Tech, 4/1995) supplied in *Appendix F* of the EDR, especially *Drawings 26- and 27 of 34*, no provisions are suggested for shutting off individual major trunk lines. Having such provisions would be beneficial if a particular geographical area consisting of a group of wells is necessary to be shut off for servicing or as an operational choice. I recommend the consideration of such provisions.

16. EDR, Page 6-14, Section 6.3.3.5, Carbon Adsorbers

See comment # 2 above for *page 4-11*.

17. EDR, Page 6-15 through 6-18, Section 6.3.4, Vapor Sampling

It is unclear what is considered the threshold concentration at which the VGAC vessels are rotated from lead to lag, and at what point VGAC change-outs are initiated, if different. Breakthrough of VOCs at the lead vessel does not necessarily require rotation or change out of the vessels. TCE may not be the first VOC to break through, and so VOC readings by a flame ionization detector (FID) or photoionization detector (PID) may not be appropriate to show compliance with air emission limitations, which are based on TCE. Please define the threshold VOC or particular species concentration values, which when detected would trigger an appropriate operational action, such as VGAC vessel rotation or change-out. Compliance with the substantive requirements of the South Coast Air Quality Management District (SCAQMD), as detailed in *Appendix A*, must be clearly demonstrated. In addition, speciation of VOC may be necessary to demonstrate compliance with SCAQMD requirements.

As the VGAC initial change-outs will be occurring much more frequently than initially estimated (see comment above for *Page 4-11*), I recommend revising the proposed air sampling frequency to reflect it. The sampling frequency may be decreased with time, as the influent concentrations and carbon loading rates are better characterized. As noted in the comment above for *Page 6-12*, system flow monitoring, both in terms of instantaneous and cumulative, coupled with the concentration data, must be solid enough to clearly document compliance with the substantive requirements of the SCAQMD limitations.

18. O&MM, Page 1-11, Section 1.4, Site Description

This section indicates that most SVE wellheads will be housed in underground, precast concrete vaults and the gathering system piping will generally be installed underground. Also, piping within Building 296 and 297 will be routed overhead to minimize impact. DTSC agrees with this approach to enable reuse of the area during the ongoing remediation. Should this approach change, please discuss with the Local Redevelopment Authority (LRA) and provide the outcome of the discussions.

19. O&MM, Page 1-13, Figure 1-5, SVE Well Field and Piping Plan

The moisture trap on the 16-inch vapor line that shown on *Bechtel Drawing No. 162-M01*, and generally located between SVE wells 26/26A 28/28A is not shown in *Figure 1-5*.

20. OM&M, Page 2-3, Figure 2-1, Site 24 - SVE Equipment Process Flow Diagram

The crossing of process lines for the VGAC system are not shown correctly. The valve upstream of VGAC vessel B shown as closed should be labeled as open instead. The arrow showing the flow of cooling tower blowdown to the sewer should be reversed.

21. O&MM, Page 3-10, Section 3.3.1, Operating Philosophy

The adsorption of VOCs by activated carbon is a reversible equilibrium-based process. If uncontaminated air or air with low VOC contamination is passed through the VGAC vessels containing relatively high saturation of adsorbed contaminants, desorption of adsorbed species and their discharge into the ambient air will occur. Such a situation may occur during system start-ups or under unexpected or unusual system operating circumstances. Having a fresh or nearly fresh lag VGAC vessel should help eliminate the possibility of unwanted air emissions. Nevertheless, I recommend including a cautionary note in the O&MM about such possibilities and process recommendations on how to avoid it.

22. O&MM, Page 3-15, Figure 3-1, Operation and Maintenance Data Form

I recommend adding the following entries to the O&M Data Form: 1) instantaneous air flow rate in scfm; 2) cumulative extracted volume in scfm; 3) position of blower air inlet valves; and 4) amount of condensate removed from all condensate sources in the system.

23. QA/QC Plan, Page 4-2, Figure 4-1 and Page 13-5, Figure 13-1, Design Process and Schedule Summary

According to Figure 4-1, this submittal represents a preliminary design. Please submit the schedule for the detailed design package and revise Figure 13-1 accordingly.

24. QA/QC Plan, Page 5-1; Section 5, Operation and Maintenance Contact List

Please update the contact list.

25. CP, Page 2-4, Section 2.4, Addressing Potential Rebound

The CP proposes an approximate 4-week shutdown of the SVE system at the perceived completion of remediation to observe rebound of soil vapor concentrations. Rebound of soil vapor concentrations to potentially significant levels can occur after periods longer than 4 weeks. We recommend that, at this stage, no commitment be made to adhere to the "approximate 4-week" rebound period. Instead, we recommend the examination of soil vapor data at the perceived end of the active remediation period and of the soil gas rebound curve characteristics. Only after such data analysis can a decision be made on the status of the vadose zone soil gas equilibrium and the ultimate residual soil gas concentration, and whether such concentration is acceptable.

26. CP, Page 2-10, Section 2.6, Implementing the Contingency Plan

The CP indicates that remedial action progress reports will be prepared and submitted by the DON to the regulatory agencies at regular intervals. Please revise this section to include monthly update reports (Section 9 of the EDR). Also, add California Regional Water Quality Control Board to the list of agencies to receive the reports.

27. CP, Page 3-3, Section 3.4.2, Handling Large Spills and Page 3.8, Section 3.8, Notification

As required by Title 22, Section 66265.56, the emergency coordinator, shall notify the State California Office of Emergency Services (OES) whenever there is a release, fire, or explosion which could threaten human health, or the environment. OES can be reached at 1-800-852-7550.

Mr. Joseph Joyce
October 13, 1998
Page 17

28. CP, Page 3-4, Section 3.9, Record Keeping

The monthly O&M reports (mentioned in *EDR, Section 9.3, Monthly O&M Reports*, and superficially in *CP, Section 2.6, Implementing the Contingency Plan*) a section that includes a brief statement that notes whether unusual events occurred, and if so, a full description of them.

If you have any questions, please call me at (714) 484-5418.

Sincerely,



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

cc: Mr. Glenn Kistner
Remedial Project Manager
U. S. Environmental Protection Agency
Region IX
Superfund Division (SFD-8-2)
75 Hawthorne Street
San Francisco, California 94105-3901

Ms. Patricia Hannon
Remedial Project Manager
California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, California 92501-3339

Mr. Pat Brooks
Bechtel National, Inc.
1230 Columbia Street, Suite 400
San Diego, California 92101-8502

Mr. Joseph Joyce
October 13, 1998
Page 12

cc: Mr. Gregory F. Hurley
Restoration Advisory Board Co-chair
620 Newport Center Drive, Suite 450
Newport Beach, California 92660-8019

Mr. Andy Piszkin
Remedial Project Manager
Naval Facilities Engineering Command
Southwest Division - Code 1831.AP
1220 Pacific Highway
San Diego, California 92132-5187

Mr. Laszlo Saska, P.E.
Hazardous Substances Engineer
Engineering Services Unit, HQ-29
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806



California Integrated Waste Management Board



Daniel G. Pennington, Chairman

8800 Cal Center Drive • Sacramento California 95826 • (916) 255-2200

www.ciwmb.ca.gov

Peter M. Rooney
Secretary for
Environmental
Protection

Pete Wilson
Governor

November 3, 1998

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

Draft Record of Decision (ROD) for Sites 2 and 17, El Toro Marine Corps Air Station (MCAS)

Dear Mr. Joyce:

It has come to our attention that your agency has submitted a draft ROD for the aforementioned landfills to other regulatory agencies for their review. After our meeting of October 22, 1998, it was our understanding that our agency would be a direct recipient of all documentation related to the four landfills located at El Toro MCAS. We are concerned that any delays in receiving closure documentation for these landfill may limit our ability to review the documents in a timely fashion and especially since the timeframe for review is applied uniformly to all involved regulatory agencies.

We hope that this is an accidental omission which can be avoided in the future. Nevertheless, we would like to emphasize that we would like to receive all relevant documents concurrently with other regulatory agencies.

Should you have any questions regarding this matter, you can contact me at (916) 255-1302 or Mr. Peter Janicki of my staff at (916) 255-1302.

Sincerely,

Michael B. Wochnick, Manager
Closure and Remediation Section
Permitting and Enforcement Division

cc: Mr. Tayseer Mahmoud, Department of Toxic Substances Control

Ms. Laura Duschnak, BRAC Operations Office



Department of Toxic Substances Control



Jesse R. Huff, Director
5796 Corporate Avenue
Cypress, California 90630

Pete Wilson
Governor

November 6, 1998

Peter M. Rooney
Secretary for
Environmental
Protection

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

Dear Mr. Joyce:

REQUEST FOR EXTENSIONS TO THE FEDERAL FACILITY AGREEMENT (FFA) SCHEDULES, MARINE CORPS AIR STATION (MCAS) EI TORO

The Department of Toxic Substances Control (DTSC) has received your letter dated November 3, 1998, requesting extensions of the deadlines set forth in Appendix A of the FFA for MCAS El Toro. A revised FFA Appendix A schedule dated November 3, 1998 accompanied your letter as Enclosure #1.

You have requested a six-month extension to submit the Draft Record of Decision (ROD) for Operable Unit (OU)-2C (Landfill Sites 3 & 5). The letter stated the additional time is needed to further research and discuss the technical concerns the team may have, review the legal requirements, and reach a point where a draft ROD can be submitted to the regulatory agencies.

DTSC does not approve your request for an extension because a 90-day extension request was already granted on August 6, 1998. For DTSC to determine the appropriateness of a second, longer extension, MCAS El Toro must submit a detailed schedule of activities leading to the submittal of the Draft ROD. This schedule shall include a time table, meetings, conference calls, and associated deliverable documents to the federal and state regulatory agencies.

If you have any questions, please call Mr. Tayseer Mahmoud, Remedial Project Manager, at (714) 484-5418.

Sincerely,

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

cc: See next page

California Environmental Protection Agency

♻️ Printed on Recycled Paper

Mr. Joseph Joyce
November 6, 1998
Page 2

cc: Mr. Glenn Kistner
Remedial Project Manager
U. S. Environmental Protection Agency
Region IX
Superfund Division (SFD-8-2)
75 Hawthorne Street
San Francisco, California 94105-3901

Ms. Patricia Hannon
Remedial Project Manager
California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, California 92501-3339

Mr. Gregory F. Hurley
Restoration Advisory Board Co-chair
620 Newport Center Drive, Suite 450
Newport Beach, California 92660-8019

Mr. Andy Piszkin
Remedial Project Manager
Naval Facilities Engineering Command
Southwest Division - Code 1831.AP
1220 Pacific Highway
San Diego, California 92132-5187



Department of Toxic Substances Control



Jesse R. Huff, Director
5796 Corporate Avenue
Cypress, California 90630

Pete Wilson
Governor

Peter M. Rooney
Secretary for
Environmental
Protection

November 17, 1998

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

Dear Mr. Joyce:

CLOSURE REPORT APPROVAL: TEMPORARY ACCUMULATION AREA (TAA) 765 SITE AT MARINE CORPS AIR STATION (MCAS) EI TORO

The Department of Toxic Substances Control (DTSC) has reviewed your response to comments dated October 15, 1998 on the above subject document, prepared by OHM Remediation Services Corp. As part of the Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA), TAA 765 was identified as a hazardous waste drum storage area for storage less than 90 days. The report summarizes the decontamination and sampling activities performed at the TAA 765 site located in the northwest quadrant of the Station.

DTSC is satisfied that comments emanating from our August 21, 1998 letter on the draft report have been adequately addressed in this submittal. As such, we hereby approve the closure report.

However, although the report conclusions are consistent with the risk assessment, we have the following comments regarding the risk calculations:

1) Residential risks and hazards are summarized in Table 6-1. The only chemicals of potential concern in soil are metals. Cancer risk at TAA 765 is due entirely to arsenic, and concentrations of arsenic at TAA 765 are within the ambient range. Thus, site-related cancer risks are insignificant.

2) The summed hazard index shown in Table 6-1 is 1.31, but this is an overestimate. Only thallium was actually detected at a concentration above the ambient range. The hazard quotient for thallium is 0.865. Thus, the actual estimate of hazard for the residential setting is less than 1.0.

3) In Tables 6-1 and 6-2, the ambient hazard was subtracted from hazard at the site. This method is incorrect for non-carcinogenic hazards; please ensure that this method is not used in future reports. The toxicity criteria used for estimating non-cancer hazards are based on toxic effects exhibiting thresholds. Once the threshold is exceeded, the portions of the hazard quotient contributed by the site and by ambient conditions are immaterial. It is appropriate to subtract ambient concentrations for carcinogens.

4) Procedures for estimating carcinogenic and non-carcinogenic hazards are described in Chapter 2, Section 3.4, "Correction for Background", in *Supplemental Guidance for Human Health Multimedia Risk Assessment for Hazardous Waste Sites and Permitted Facilities* (DTSC, 1992; <http://cwo.com/~herdl/downset.htm>).

If you have any questions, please contact Mr. Tayseer Mahmoud, Remedial Project Manager, at (714) 485-5418.

Sincerely,



Sharon Fair
Unit Chief
Base Closure Unit
Office of Military Facilities

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

Ms. Patricia Hannon
Remedial Project Manager
California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, California 92501-3339



Department of Toxic Substances Control



Jesse R. Huff, Director
5796 Corporate Avenue
Cypress, California 90630

November 23, 1998

Peter M. Rooney
Secretary for
Environmental
Protection

Wilson
:rnr

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

Dear Mr. Joyce:

COMMENTS ON DRAFT TECHNICAL MEMORANDUM, UNSAT-H INFILTRATION MODELING FOR LANDFILL COVERS, MARINE CORPS AIR STATION (MCAS) EI TORO

The Department of Toxic Substances Control (DTSC) has reviewed the above subject document dated October 21, 1998, prepared by Bechtel National Inc. The document presents the results of the UNSAT-H computer modeling of infiltration for landfill covers at MCAS El Toro.

The model estimates that the annual infiltration rate through the monolithic cover (Alternative 3) will range between 5.0 and 13.7 inches for golf course scenarios. DTSC cannot accept this infiltration range as a permissible leakage rate for the landfill. The state's performance standard for the allowable percolation amount at monolithic soil covers is "zero" infiltration, and any leakage into the waste beneath the cover would thus be considered a design failure. However, we will reconsider this determination if the Navy/Marines conduct site and waste characterization studies at the landfills to demonstrate that, under the currently proposed irrigated postclosure land use, the waste does not pose any significant threat to public health and safety or to the environment.

DTSC agrees with and supports the California Integrated Waste Management Board's comments dated November 17, 1998 on the subject document (copy enclosed). DTSC has also reviewed draft technical comments from the MCAS El Toro Local Redevelopment Authority (LRA); we note that the LRA has posed prohibitive questions for which the answers are not clear. DTSC therefore encourages the Navy/Marines to develop a written response to those comments, and requests that we be given an opportunity to review this response when it becomes available.

Mr. Joseph Joyce
November 23, 1998
Page 2

If you have any questions, please contact Mr. Tayseer Mahmoud, Remedial Project Manager, at (714) 485-5418.

Sincerely,



Sharon Fair
Unit Chief
Base Closure Unit
Office of Military Facilities

Enclosure:

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

Ms. Patricia Hannon
Remedial Project Manager
California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, California 92501-3339

Mr. Peter Janicki
California Integrated Waste Management Board
8800 Cal Center Drive
Sacramento, California 95826

Mr. Steven Sharp
County of Orange
Environmental Health Division
Solid Waste Local Enforcement Agency
2009 East Edinger Avenue
Santa Ana, California 92705

California Integrated Waste Management Board



Daniel G. Pennington, Chairman
8800 Cal Center Drive • Sacramento California 95826 • (916) 255-2200
www.ciwmb.ca.gov

Mr. M. Rooney
Secretary for
Environmental
Protection

Pete Wilson
Governor

November 17, 1998

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

Review of Draft Technical Memorandum, Unsat-H Infiltration Modeling for Landfill Covers, Marine Corps Air Station (MCAS), El Toro, California

Dear Mr. Joyce:

On October 22, 1998, the California Integrated Waste Management Board (Board) Remediation, Closure, and Technical Services Branch staff received the draft technical memorandum addressing the landfill cover infiltration model for inactive landfills at El Toro MCAS.

Board staff have reviewed the submitted report and acknowledge its findings. However, Board staff do not concur with the report's final conclusion that, based on the assumed permeability of the soil (5×10^{-5} centimeter/second) from the proposed borrow source, the proposed monolithic soil cover will provide infiltration protection performance equivalent to the prescriptive clay barrier cover performance.

Board staff do not dispute the fact that under certain conditions (arid climate, lack of irrigation, dry and/or inert waste), use of a monolithic soil cover may be justifiable for certain landfills. However, such covers have been allowed only as site-specific occurrences and only under conditions (long-term moisture monitoring, requirement to upgrade landfill cover in an event of failure) with none of the proposed sites approved for an irrigated postclosure land use.

Board staff would like to point out that the reference to the theoretical permeability (and leakage) of the clay barrier (1×10^{-6} cm/sec) as a performance standard for a landfill final cover is not correct for the following reasons:

- As stated in Title 27, California Code of Regulations, final cap design and permeability requirements have been established as minimum standards which may be upgraded based on, among other conditions, irrigated postclosure land use and surrounding land development.
- A performance standard that is used for evaluation of alternative final cover designs such as monolithic soil cover is zero infiltration through the bottom of the final cover. Any leakage into the waste beneath the cover is considered a failure. Although a theoretical leakage rate can be calculated for any final cover material, closure regulations provide design guidelines to prevent and/or minimize conditions under which full cover infiltration can occur (site grading, runoff and runoff collection, subsurface drainage collection). Thus, the net infiltration equal to the infiltration based on the theoretical permeability of the clay barrier cannot be accepted as a permissible leakage.

- Because there is no adequate waste characterization study and landfill gas monitoring, Board staff cannot determine the effects of increased moisture in the waste on landfill gas generation and waste settlement. Thus, no infiltration is the performance standard for comparison purposes of alternative covers.

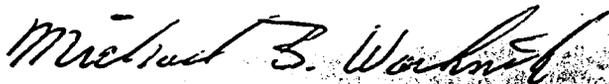
Please refer to the attached review memorandum for the infiltration model analysis.

At this time, Board staff cannot approve the proposed monolithic soil cover design for an irrigated postclosure land use (Title 27, California Code of Regulations, Section 21140). Options available to El Toro MCAS include:

1. Install monolithic soil cover but preclude irrigated postclosure land use.
2. Install synthetic cover with drainage and gas collection layers and allow landfill irrigation, or
3. Conduct site and waste characterization of the landfills to demonstrate that the waste does not pose any significant public health and safety or environmental threat under currently proposed (irrigated) postclosure land use.

Should you have any questions, please contact Peter Janicki of my staff at (916) 255-1195.

Sincerely,



Michael B. Wochnick, Manager
Closure and Remediation Section
Permitting and Enforcement Division

Attachment

cc: Mr. Tayseer Mahmoud, Department of Toxic Substances Control

Mr. Glenn Kistner, U.S. Environmental Protection Agency

Ms. Patricia Hannon, Santa Ana Regional Water Quality Control Board

Mr. Steve Sharp, Orange County Health Care Agency

MEMORANDUM

To: Peter Janicki
Waste Management Engineer
Remediation, Closure & Technical Services

Date: November 4, 1998

From: 
Glenn K. Young, P.E.
Associate Waste Management Engineer
Remediation, Closure & Technical Services
CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

Subject: REVIEW OF UNSAT-H MODELING MCAS EL TORO LANDFILLS

Peter, I have reviewed the subject report and have the following comments & notes:

Section 2 Proposed Borrow Source

- a) The borrow soil investigation appears to be reasonable, however were soil samples taken from the surface or at depth (if at depth, what depth)? Can soil be scraped from the surface or will overburden need to be removed? Note that removal of overburden will impact borrow soil costs.
- b) The soil gradation from borrow soil samples is consistent with monolithic covers being tested in San Bernardino County (Milliken Landfill). The soils have a significant sand fraction (60%) and fines (30%) fraction. The modeled soil permeability of 2.0×10^{-5} cm/sec is consistent with laboratory permeability data taken from construction quality assurance tests during construction of the East Mound Cap at Milliken Landfill.

Section 2.1 Geotechnical Soil Analysis & Section 2.2 Mean Hydraulic Conductivity

- c) The geotechnical section appears reasonable. The appropriate tests were performed to determine final cover infiltration performance as well as soil construction specifications and construction quality assurance acceptance values. The geometric mean permeability appears to be representative of borrow soils obtained.

Section 3 UNSAT-H Methodology

- d) Although this methodology appears to be valid for the first two alternatives, e.g. drought and base condition, it may not yield conservative results for applications where saturated flow conditions are prevalent, such as those conditions likely to occur due to irrigation from the landscape and golf course alternatives. Unsaturated models are used to depict the flow of moisture through a soil column and account for entrapped air which can impede the wetting front (these soil matrix properties are accounted for in the modeling by the Van Genuchten Parameters; similar to matric potential coefficients used in Richard's equation for unsaturated flow). This assumption is suitable for soils, such as those in the desert, where low initial moisture content and unsaturated conditions are the prevalent conditions. HELP and UNSAT-H Models were designed to model the water balance for geographic specific, meteorologic and climatic

conditions occurring (site-specific SCS run-off curves, rainfall data, evaporation data, etc). Man-made irrigation practices (such as golf course irrigation) may not be adequately modeled using the above models. IWMB staff recommend that further research be conducted to determine if field testing has been conducted for this application, i.e. installation of a moisture monitoring station to control irrigation in a golf course application. As a frame of reference, note that if a constant potential condition is allowed over a saturated soil column with a saturated hydraulic conductivity of 5.2×10^{-5} cm/sec, the net annual infiltration could be up to 645 inches/year. A 27 CCR prescriptive cap exhibiting a permeability of 1.0×10^{-6} cm/s under the same conditions would be 12.41 inches/year.

5.4 Plant Data

- e) What are the root zone depths for bermuda grass? Most grass systems are shallow rooting and are usually 12 inches in depth or less. Is the modeled root zone of 24 inches a conservative value for Bermuda Grass? Since root zone transpiration accounts for a significant portion of infiltration, what is the impact of a 12-inch versus a 24-inch root zone on the net infiltration results modeled.

Section 7 Summary

- f) Since the model does not account for lateral drainage effects and run-off, how will these effects impact infiltration in areas such as drainage confluences and drainage collection areas?

In summary, it is not recommended that UNSAT-H be used in the modeling of irrigated conditions (or saturated conditions) since this is contrary to the conditions which are modeled (unsaturated conditions). Consultants modeling the monolithic cover for landfills in San Bernardino County have stated that saturated conditions must be avoided within the cover profile in order for it to perform equivalently to a prescriptive cover. Note also, that key conditions for applying the monolithic cover concept include, positive drainage and elimination of conditions which would cause a constant potential over the cover soil profile (eliminating any driving force on the wetting front).

Let me know if you have any questions.

Glenn



Department of Toxic Substances Control



Jesse R. Huff, Director
5796 Corporate Avenue
Cypress, California 90630

Peter M. Rooney
Secretary for
Environmental
Protection

Pete Wilson
Governor

November 24, 1998

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

Dear Mr. Joyce:

CLOSURE REPORT APPROVAL: SOLID WASTE MANAGEMENT UNIT 7 AT MARINE CORPS AIR STATION (MCAS) EI TORO

The Department of Toxic Substances Control (DTSC) has reviewed the closure report for the above subject site dated October 23, 1998, prepared by OHM Remediation Services Corp. The report summarizes the results of the field remedial activities conducted at Solid Waste Management Unit (SWMU) 7, a Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) site referred to as "Transformer Storage Area" at MCAS El Toro. The SWMU 7 site is located in the southwest quadrant of the Station and was used for temporary storage of old transformers.

Based on the report, impacted soils have been excavated and removed from the site. Also, confirmation sampling analytical results were below residential cleanup goals. DTSC concurs with the findings and conclusions of the closure report and we hereby approve it.

If you have any questions, please contact Mr. Tayseer Mahmoud, Remedial Project Manager, at (714) 485-5418.

Sincerely,

Sharon Fair
Unit Chief
Base Closure Unit
Office of Military Facilities

cc: See next page

Mr. Joseph Joyce
November 24, 1998
Page 2

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

Ms. Patricia Hannon
Remedial Project Manager
California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, California 92501-3339

Mr. Gregory F. Hurley
Restoration Advisory Board Co-chair
620 Newport Center Drive, Suite 450
Newport Beach, California 92660-8019

Mr. Bill Sedlak
OHM Remediation Services Corp.
2031 Main Street
Irvine, California 92614

Ms. Lynn Hornecker
Remedial Project Manager
Naval Facilities Engineering Command
Southwest Division - Code 1831.LH
1220 Pacific Highway
San Diego, California 92132-5187