

# Marine Corps Air Station El Toro Installation Restoration Program

## Public Information Materials

7/31/96

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

NOTE: A joint meeting of the MCAS El Toro RAB and the MCAS Tustin RAB was held following separate RAB meetings. Materials included only pertain to the El Toro session and the joint session.

#### Materials/Handouts Include:

- ✓ RAB meeting agenda\*
- ✓ Public notice announcing RAB meeting
- ✓ Draft RAB meeting minutes from 5/29/96 RAB meeting\*
- ✓ Sign-in sheets 7/31/96 RAB meeting
- ✓ MCAS El Toro Installation Restoration Program RAB Mission Statement and Operating Procedures, July 31, 1996.
- ✓ "Blue Sheet" - Revised MCAS El Toro RAB Major Document Release and Review Dates, revised for 7/31/96 meeting\*
- ✓ Cal-EPA, DTSC comments on "Draft Phase II Remedial Investigation Report for the Original Landfill, Site 3, Operable Unit 2C, MCAS El Toro", June 19, 1996\*
- ✓ Cal-EPA, DTSC comments on "Draft Phase II Remedial Investigation Report for the Communication Station Landfill, Site 5, Operable Unit 2C, MCAS El Toro", June 18, 1996\*
- ✓ Cal-EPA, RWQCB comments on "Draft Phase II Remedial Investigation Report for the Original Landfill, Site 3, Operable Unit 2C, MCAS El Toro" and the "Draft Phase II Remedial Investigation Report for the Communication Station Landfill, Site 5, Operable Unit 2C, MCAS El Toro", July 20, 1996\*
- ✓ U.S. EPA comments on "Draft Final Phase II Remedial Investigation Report, Operable Unit 2A - Site 24, July 22, 1996\*
- ✓ Joint Meeting Presentation Handouts - "Transfer and Cleanup of Contaminated Property in the Private Sector" by Diane R. Smith and Robert J. Gibson, Snell and Wilmer, Irvine, California\*
- ✓ Joint Meeting Presentation Handout - "Course Correction: Making the Shift from Contaminated Property to Productive Use" by Diane R. Smith and Robert J. Gibson\*
- ✓ Joint Meeting Presentation Handouts - "Real Estate Transactions Despite Environmental Issues" and "Making Real Estate Transactions Happen Despite Environmental Issues: A Strategic Approach" by John P. Monahan, ARES Realty Capital, Irvine, California\*

\* denotes handed out at meeting

Marine Corps Air Station El Toro  
Installation Restoration Program

Public Information Materials

4/24/96

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

Materials/Handouts Include:

- RAB meeting agenda\*
- Public notice announcing RAB meeting
- Draft RAB meeting minutes from 2/28/96 RAB meeting\*
- Sign-in sheets 4/24/96 RAB meeting
- "Blue Sheet" - Revised MCAS El Toro RAB Major Document Release and Review Dates, revised 2/27/96\*
- Presentation - *In situ* Air Sparging for Groundwater Cleanup\*
- Presentation - Tank 398 Site Update\*
- Presentation - Groundwater Sampling, Results 1st Quarter Sampling 1996\*
- U.S. EPA comments on "Draft Phase II Remedial Investigation Report, OU-2A, Site 24"\*
- Cal-EPA, DTSC comments on "Draft Phase II Remedial Investigation Report, OU-2A, Site 24"\*

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# Marine Corps Air Station El Toro Installation Restoration Program

## Public Information Materials

7/31/96

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

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\* denotes handed out at meeting

**MCAS El Toro and MCAS Tustin  
Restoration Advisory Board Joint Meeting**

***Wednesday, July 31, 1996  
7:30-9:00 PM***

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

**Draft Agenda**

- ◆ **Welcome/Introduction/Agenda Review**  
Joseph Joyce, *BRAC Environmental Coordinator,  
MCAS El Toro*  
Desire Chandler, *BRAC Environmental Coordinator,  
MCAS Tustin*
  
- ◆ **“Transfer and Cleanup of Contaminated  
Property in the Private Sector”**  
Diane Smith  
Partner, *Snell & Wilmer*  
John Monahan  
Vice President, *ARES Realty Capital, Inc.*  
Question and Answer Session
  
- ◆ **Meeting Evaluation & Closing**  
Joseph Joyce  
Desire Chandler

# MCAS El Toro and MCAS Tustin Restoration Advisory Board Joint Meeting

**Wednesday, July 31, 1996**  
**Irvine City Hall, One Civic Center Plaza, Irvine**

## MCAS El Toro

**6:30-7:30 PM**  
**Conference & Training Ctr.**

### Draft Agenda

- **Welcome & Agenda Review** Joseph Joyce
- **Approval of 5/29/96 Minutes** Marcia Rudolph
- **June 26 Subcommittee Meeting Report** Marcia Rudolph
- **Regulatory Agency Comment Update** Bonnie Arthur  
U.S. EPA  
Tayseer Mahmoud  
Cal-EPA
- **Environmental Update** Joseph Joyce
- **Future Topics and Meetings** Joseph Joyce &  
Marcia Rudolph
- **Closing** Joseph Joyce

## MCAS Tustin

**7:00-7:30 PM**  
**City Council Chambers**

### Draft Agenda

- **Welcome & Agenda Review** Susan Reynolds
- **Approval of 5/22/96 Minutes** Susan Reynolds
- **Field Activities Progress Report** Desire Chandler
  - Investigation
  - Cleanup
- **Reuse Plan Update** Dana Ogdon
- **Future Topics and Meetings** Desire Chandler &  
Susan Reynolds
- **Closing** Susan Reynolds

**Joint meeting agenda on reverse**

**P U B L I C   N O T I C E**  
***MARINE CORPS AIR STATIONS***  
***EL TORO and TUSTIN***

**Restoration Advisory Boards**  
**Joint Meeting**

**Wednesday, July 31, 1996**  
**7:30 p.m.**

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

◆ ◆ ◆

**Special Presentation:**

***“Transfer and Cleanup of Contaminated Property in the  
Private Sector”***

**The interested public is welcome!**

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**Prior to the special presentation, the Restoration Advisory Boards  
will hold abbreviated meetings at Irvine City Hall:**

**MCAS El Toro**  
**6:30 - 7:30 p.m.**  
**Conference and Training Center**

**MCAS Tustin**  
**7:00 - 7:30 p.m.**  
**City Council Chambers**

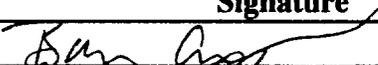
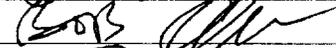
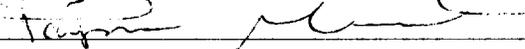
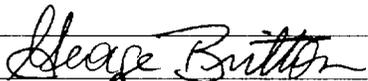
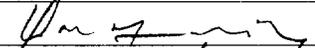
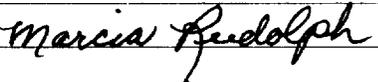
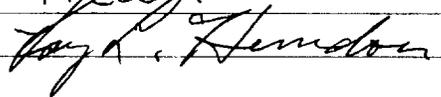
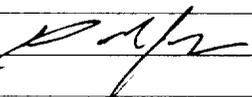
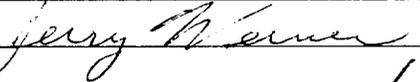
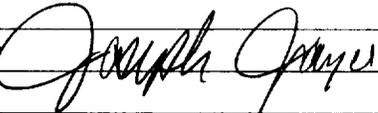
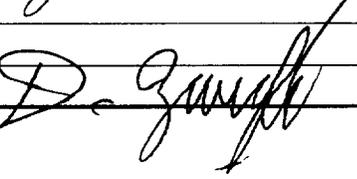
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For more information about this meeting and the Installation Restoration Programs at  
MCAS El Toro and MCAS Tustin, please contact:

Commanding General, AC/S, Environmental (1AU),  
Attn: Ms. Charly Wiemert, MCAS El Toro,  
P.O. Box 95001, Santa Ana, CA 92709-5001  
(714) 726-2840

**MCAS EL TORO  
RESTORATION ADVISORY BOARD MEETING  
July 31, 1996**

**RAB MEMBER SIGN-IN SHEET**

Name	Signature	Name	Signature
Arthur, Bonnie		Lamourex, Susan	
Allen, Bob		Landis, Lorrie	
Barney, Col. Joseph P. (ret)	PRESENT*	Mahmoud, Tayseer	
Bennett, Dr. Charles		Matheis, Mary Aileen	
Boehringer, Roger		Mathews, Thomas	
Brady Jr., Paul		McVicker, Robert R.	
Britton, George		Meier, Fred J.	
Cohn, Enid		Merryman, Robert	
Cooper, Frank		Mountford, Dan	
Crompton, Chris		Murphy, Don	
DaCorte, George F.		Olquin, A. Richard	
Halbert, Gary J.		Ritchie, Col. E.J.	for P.F. Cirila
Hayes, Finola	PRESENT*	Rudolph, Marcia - Co-chair	
Herndon, Roy		Shayegan, Maria	
Huang, Chi		Sievers, Larry	
Hurley, Gregory		Sipp, Jr., Myron L.	
Hersh, Peter		Vasquez, Barbara	
Hurt, Dr. Paul R.		Vitale, Larry	
James, Novel B.		Werner, Jerry B.	
Joyce, Joseph - Co-chair		Westermeier, John F.	
Kalwani, Rita		Woodings, Bob	
Koenigsberg, Dr. Stephen S.		Zweifel, Donald E.	

\* PRESENT = all Members signed other sign-in sheet

**MCAS EL TORO  
RESTORATION ADVISORY BOARD MEETING  
July 31, 1996**

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

NAME	AFFILIATION	MAILING ADDRESS	PHONE FAX	INTERESTED IN RAB MEMBERSHIP?
RONALD OKUDA	Cal/EPA DTSC	LONG BEACH	310-590-4888 310-590-4901	
Charly Wemert	MCAS El Toro		(714) 726-2840 Fax 6586	
Lynn Hornecker	Navy		(619) 532-3737 Fax 619 532 2969	
Scott Kette	NAVY		(714) 726-2506 (714) 726-2255	
SCOTT A. GUTH	CA. Fish & Game		(408) 684-7195 (916) 684-7977	
Mike Whipple		30896 Riviera Pl Laguna Niguel CA 92677	714 495-2606 714 495-5068	
Fareeq Khan	GeoMat Engineering	1700 E. Garry Ave., Suite 218 Santa Ana, CA. 92705	(714) 756-8926	
TOM Young	Citizen employed at Irvine, CA	MORRISON KANDSEN 17300 RED HILL AVE #150 IRVINE CA 92614	714-752-8360 714-752-8361	

**MCAS EL TORO  
RESTORATION ADVISORY BOARD MEETING  
July 31, 1996**

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

NAME	AFFILIATION	MAILING ADDRESS	PHONE FAX	INTERESTED IN RAB MEMBERSHIP?
Paul Yaroschak	Office of ASST Sec NAVY		703 614-1282	no
Cindy Turlington	Chief of Naval Operations		703 602-5330	
MARIAWAL POTACKA	HQMC		(703) 696-2141	
BERNIE LINDSEY	NAVY		619-532-1164	
F.C. Baynard	BERG, MCAS, El Toro		(714) 236-3381	
<del>THOMAS G. [unclear]</del>	<del>BERG [unclear]</del>	<del>[unclear]</del>	<del>714 [unclear]</del>	

**MCAS EL TORO  
RESTORATION ADVISORY BOARD MEETING  
July 31, 1996**

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

NAME	AFFILIATION	MAILING ADDRESS	PHONE FAX	INTERESTED IN RAB MEMBERSHIP?
Ed Rumsey	MCAS El Toro	12 Aloysia R.S.M. CA 92688	714 726-2270 2639	NO
M. Mingay	OTSC	245 W Broadway #350 90802	310 590-4881 4932	
John Donovan	ARCS	19712 MacArthur Blvd Suite 200 Irvine CA 92715	714 622-8880 622-8888	
Bill Sedlak	OHM	2031 Main St Irvine CA	243-1146	NO
Mary L. Norby		14512 Emerywood Tustin, CA	714) 832-4678	yes

Attachment B

**MCAS EL TORO and MCAS TUSTIN  
JOINT RESTORATION ADVISORY BOARD MEETING  
July 31, 1996**

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

NAME	AFFILIATION	MAILING ADDRESS	PHONE FAX	INTERESTED IN RAB MEMBERSHIP?
<del>Fred J. Miller</del>	<del>ASCE</del>	<del>1517 E. Beechwood St. Santa Ana 92705</del>	<del>714/558-7551</del>	
Paul McDaniel	Naval Facilities Eng'g Service Center			
Amy Meyson	self	322 Prospect Park Tustin CA 92780	(714) 731-2115 (909) 889-8301	July (909) 388-1827
Jerry Kneelger	NVA	3486 EBOE ST IRVINE CA	(714) 552-3548	
LOE BARNEY	EL TORO	22177 TIMBERDALE KELSO FOUNTAIN 92630	714 8926937	AM Member
Dana Ogden	City of Tustin	_____	573-3116	

**MCAS EL TORO and MCAS TUSTIN  
JOINT RESTORATION ADVISORY BOARD MEETING  
July 31, 1996**

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

NAME	AFFILIATION	MAILING ADDRESS	PHONE FAX	INTERESTED IN RAB MEMBERSHIP?
FINDLA HAYES	APS	4580 CAMPUS DR. #628C NEWPORT BEACH, CA 92660	714 222 0455 714 222 0456	
VIJAY RISHI	Brown & Calhoun	9440 FARM ROAD, #220 SAN DIEGO, CA 92108	619-528-9090 619-528-9199	
LUCRENTIA Holloway	Navy	1230 Pacific Hwy San Diego, CA 92132	(619) 532-2289	
Ed Sirota	RAC	505 Hoff Tustin Suite 210 Santa Ana, CA 92705	714-571-1800 571-1811	
Scott A. Furr	CA DFB		(408) 649-7195	
Ohiru Patel	Brown & Calhoun	16735 Von Karman 8 Irvine CA 92714	714-660-1070	
1st Lt. George Oprea	BRAC MCAS Tustin			

**MARINE CORPS AIR STATION EL TORO**  
**RESTORATION ADVISORY BOARD MEETING**

**29 MAY, 1996**

*DRAFT MEETING MINUTES*

A Restoration Advisory Board (RAB) meeting for Marine Corps Air Station (MCAS) El Toro was held Wednesday, 29 May, 1996 at the Irvine City Hall. The meeting began at 6:30 p.m. and concluded at 9:10 p.m. These minutes summarize the discussions and presentations from this meeting.

**WELCOME/INTRODUCTIONS/AGENDA REVIEW**

Joseph Joyce, Base Realignment and Closure (BRAC) Environmental Coordinator (BEC) and Marine Corps/Navy RAB Co-Chair opened the meeting and welcomed members and guests. RAB Community Co-Chair Marcia Rudolph led the Pledge of Allegiance. Mr. Joyce informed the RAB that there are two modifications to the agenda: Ms. Ann Thompson from the Southwest Division Naval Facilities Engineering Command (SWDIV) will be substituting for Mr. Dana Sakamoto to discuss BRAC funding and the budget process; Ms. Marcia Rudolph will discuss letters to government agencies by RAB members. All attendees introduced themselves, and Mr. Joyce reminded everyone to sign in on the sheets provided.

**OLD BUSINESS**

**Review and Approval of Minutes of 24 April, 1996 Meeting**

A correction to the minutes was noted by Mr. Bill Sedlak, OHM Remediation Services Corporation regarding his presentation on the Tank 398 cleanup. On page 3, first complete paragraph, third line, the minutes incorrectly stated the remediation system consists of a single recovery well; the revision will read that the system consists of seven recovery wells, three with built-in pumps and four which require manual bailing. The RAB approved the minutes as amended.

**NEW BUSINESS**

**Status of Underground Storage Tank (UST) Program - Lt. Hope Katcharian, MCAS El Toro Environmental Engineering Division**

Lt. Katcharian provided an overview of the UST program underway at MCAS El Toro. Waste and hazardous materials are no longer stored in USTs and the UST program focuses on compliance with federal, state, and local environmental regulations. She

explained that a total of 408 tanks fall into the five status categories of USTs: *active, inactive, abandoned, removed, and closed*. The handout provided additional information on five categories of USTs at MCAS El Toro. She explained that the *Updated Base Realignment and Closure Plan (BCP) for MCAS El Toro, March 1996* provides detailed information on the UST program and is available at the Information Repository at the Heritage Park Library in Irvine. It is a living document and information reported to the RAB tonight will be incorporated into the 1997 BCP.

A total of 66 *active* tanks are currently used for storing JP-5 jet fuel, diesel fuel, and gasoline at MCAS El Toro. However, tank use is being minimized as the Marine Corps/Navy prepares for operational closure of the station. Within this category are 21 oil-water separator treatment systems that remove oil, grease, and petroleum products from water. Each oil-water separator unit, complete with accompanying storage tanks, requires special operating permits. The retrieved oily wastes are permitted to be stored for up to 90 days prior to off-station disposal.

*Inactive* tanks consist of 145 empty tanks that are still in the ground. Thirty-five tanks are scheduled for removal in June 1996. Plans and specifications for an additional 58 tanks are prepared. These will be separated into groups of 10-15 tanks to manage removals. Remaining inactive USTs will be removed in conjunction with operational closure of the station. However, some double-walled inactive USTs will remain in the ground in case they are temporarily needed prior to operational closure.

*Abandoned* tanks cannot be removed because they are located under a building. Two tanks have been drained and filled with an inert sand/cement slurry. *Removed* tanks have been dug up and disposed of off-station. Environmental site assessments and closure reports for these 137 former UST sites are being prepared.

Fifty-eight USTs have been removed and are considered *closed*. Closure reports have been prepared and approved by the applicable state or local regulatory agencies: Santa Ana Regional Water Quality Control Board or Orange County Health Care Agency, respectively. Additional closure reports for 16 more former UST sites were submitted to the Orange County Health Care Agency in May 1996.

Costs for removal and closure of USTs vary, depending on tank material (steel or concrete), tank size, location, depth, site and tank conditions, need for over excavating, and how tank removal projects are grouped. Lt. Katcharian stated that a few of the inactive USTs at MCAS El Toro will be in compliance with new federal regulations set to take effect on December 22, 1998. Therefore, these tanks will be removed regardless of future reuse.

A RAB member asked about total tank volume at MCAS El Toro. Lt. Katcharian explained that she did not have information with her to adequately answer the question. However, she said that the range in tank size is from the hundreds of gallons up to 567,000 gallons.

Lt. Katcharian provided her phone (714/726-6607) and fax (714/726-6586) numbers for RAB members to contact her for additional information. She said that Ms. Lynn Hornecker, Remedial Project Manager, Southwest Division Naval Facilities Engineering Command in San Diego, and Mr. Ed Rumsey, Director of MCAS El Toro Engineering Division, could also be contacted regarding the UST program.

**BRAC Funding and Budget Process, Ann Thompson, Southwest Division, Naval Facilities Engineering Command (SWDIV)**

Ms. Thompson's presentation outlined the Navy's approach to the BRAC environmental program and budget. She provided handouts that summarized BRAC program budgets, the budget process, guidance used for developing budgets, information on integrating land use and cleanup planning at closing bases, and budget information and fast-track cleanup accomplishments specific to MCAS El Toro.

She said that lessons learned from other BRAC bases are used to achieve faster, cheaper and better cleanups. Also, partnering between the Marine Corps/Navy and regulatory agencies and formation of BRAC Cleanup Teams (BCTs) is a key part of the fast-track cleanup process. At MCAS El Toro, the BCT is made up of Marine Corps/Navy, U.S. Environmental Protection Agency (EPA), State of California Environmental Protection Agency, Department of Toxic Substances (DTSC), and the State of California Santa Ana Regional Water Quality Control Board.

Initially, environmental baseline surveys were conducted to determine specific restoration and compliance needs. At MCAS El Toro, 70 percent of the sites had no environmental data, therefore, the BRAC Cleanup Plan (BCP) was developed to form a strategic plan from start to finish all the way to closure. The BRAC environmental program also involves the operation of Restoration Advisory Boards so stakeholders are provided an opportunity to participate directly in the cleanup process.

SWDIV is responsible for developing the budgets for all Navy and Marine Corps facilities on the West Coast. Budget estimates and requests beyond fiscal year (FY) 1996 (beginning in October of 1995) are based on the submitted FY 1996 budget. The key guiding principles for FY 1996 are being applied for future planning and include: environmental cleanup and restoration with minimal impact on reuse; ensuring cost-effective solutions; involving the BCT and RABs in the planning and prioritization process for cleanup; and bases with approved reuse plans are of the highest priority. Also, risk factors and reuse are being integrated into the guiding principles. SWDIV is constantly managing budget issues and that figures in the handouts provide a recent "snapshot" of funding estimates.

Ms. Thompson explained the "cost to complete" budget for MCAS El Toro estimates money needed to complete restoration and compliance efforts from FY 1996 through FY 2003 (October 2003). Estimated costs for cleanup are based on current (industrial-type)

use of station property. Total costs are projected to be lower than originally expected and cleanup should be completed in 2003; the current cost to complete is estimated at approximately \$220 million.

Ms. Thompson explained that the annual budgets consist of restoration and compliance money which come from different funding sources. The handouts illustrate money needed beyond initial estimates for both restoration and compliance activities. After the the Records of Decision (RODs) are completed for Operable Units 1, 2A, 2B, 2C and 3, which is at least a year away, a much clearer picture will develop for the costs needed for station cleanup and restoration. After station closure, additional funds are needed for operation and maintenance and long-term monitoring for cleanup solutions implemented. She said that final budgets for each fiscal year are contingent upon funding allocated to the Department of Defense by Congress and the President.

In response to RAB member questions regarding "approved" reuse plans, Ms. Thompson explained that the Secretary of the Navy, as designee for the Secretary of Defense, signs off on the reuse plan developed by the Local Reuse Authority. She emphasized that the chief concern of the Marine Corps/Navy is that the base be clean enough for property transfer. She also said that the Federal Facilities Agreement has been the legal driver for cleanup, bases with an "approved" reuse plan are a higher priority for funding than those without a plan.

Ms. Thompson described some of the fast track cleanup accomplishments at MCAS El Toro: 11,300 acres (63% of the station) is now clean and ready for transfer; the master integrated schedule for reuse priorities and reuse-risk issues is being prepared; presumptive remedies for landfills are being incorporated into draft feasibility study reports; and innovative management and partnering is enhancing communication and the development of draft remedial investigation and feasibility study reports.

#### **Underground Storage Tank 398 Fuel Recovery System Slide Presentation and Update - Bill Sedlak, OHM Remediation Services Corp.**

At the request of RAB members, Mr. Sedlak conducted a follow-up slide presentation to the Tank 398 presentation of 24 April, 1996 RAB meeting. Slides showed the Tank 398 job site, construction of concrete pads, and installation of fuel recovery system pipes, tanks, product recovery lines and hoses. Slides of the Tank 625 job site where a waste oil underground storage tank was removed were also shown. Excavation of contaminated soil and removal of the tank were featured.

Mr. Sedlak informed RAB members that as of 28 May, 1996, 2,384 gallons of free product (jet fuel) had been recovered. Previously he reported, that as of 19 April, 1996, 1,250 gallons of free product had been recovered.

A RAB member asked why a computer model was not used to determine free product locations and migration. Mr. Sedlak explained that such modeling requires a tremendous

amount of data since the site is “heterogeneous” with a variety of different geologic strata and soils present making it very difficult to characterize. Applying such models is practical at “homogeneous” sites where soil and substrata conditions are similar and consistent. Thus, the Marine Corps/Navy decided to start cleaning up the site instead of pursuing further study. He explained that there is less horizontal migration than originally believed because of the clay formations in the subsurface act to contain free product and groundwater.

**Slide Presentation, Environmental Restoration Program Booth, MCAS El Toro Air Show - Bob Coleman, CLEAN II Program**

The purpose of this presentation was to keep RAB members apprised of community outreach activities for the Installation Restoration (IR) Program at MCAS El Toro. Prior to the RAB meeting, a portable display unit, with the information boards developed for the MCAS El Toro Air Show Environmental Restoration Program Booth, was set up for viewing by meeting attendees.

Mr. Coleman, Community Relations Specialist with the CLEAN II Program, showed slides of the booth that was set up at the MCAS El Toro Air Show held April 26-28. Lynn Hornecker, RPM, from SWDIV; Desire Chandler, Base Environmental Coordinator from MCAS Tustin; and personnel from the CLEAN II Program staffed the booth. About 300 to 400 people visited the booth and had their questions on the environmental program answered. A fact sheet was handed out to booth visitors and mailed to all on the El Toro project mailing list.

Ms. Marcia Rudolph expressed interest in using the display at the Fourth of July celebration in Lake Forest. Other RAB members suggested that the display be used for various community opportunities.

**Cost Estimates and Projections - Joseph Joyce**

In response to RAB member requests at the April 1996 RAB meeting, Mr. Joyce discussed costs associated with a variety of topics: Air Sparging Pilot Study and Soil Vapor Extraction in the Source Area at Site 24; Tank 398 remediation work; and RAB meetings.

**Volatile Organic Compound (VOC), Site 24 - Air Sparging Pilot Study and Soil Vapor Extraction - Estimated Costs**

- Labor \$ 98,000
  - work plan preparation, procurement, equipment operation, sample analysis, evaluation of results, report preparation
- Subcontractors \$11,000
  - analytical laboratories, data validation, well drilling

• Materials	\$29,000
- air sparging equipment, soil vapor extraction equipment	
	Total
	\$138,000

Mr. Joyce said the test was just completed and analysis is underway. Results will be discussed by the BRAC Cleanup Team to determine the viability of this technology for cleanup.

Underground Storage Tank 398 Remediation - Estimated Costs

• Work plan preparation	\$185,000
• Field construction - prepare site, install wells and recovery system (includes construction and development of 7 wells at \$35,000 each)	\$469,000
• Operation and Maintenance (O&M) to date (6 months)	\$142,000
• Free product recovery through May 11	\$69 per gallon
• Estimated annual production rate of free product recovery	7,800 gallons per year
• Annual O&M	\$266,000
• Total cost per gallon of recovered free product	\$119 per gallon
• Quarterly groundwater sampling and analysis	\$25,000

Estimated costs to run recovery system are listed below. These figures show that the cost per gallon goes down the longer the system operates. However, it is not yet known how long the system will operate.

- 2 years = \$76 per gallon
- 3 years = \$62 per gallon
- 5 years = \$51 per gallon
- 10 years = \$43 per gallon

RAB Meetings

Mr. Joyce reported that contractor support for conducting RAB meetings averages about 150 hours per month costing approximately \$8,000 per meeting. Support includes: arranging for meeting room facilities; preparing draft public notices to announce meetings; pre-meeting mailings; developing agendas; coordinating dry run sessions; preparing meeting minutes; developing and providing handouts; making technical presentations; attendance at meetings; post meeting activities and mailings; and subcommittee support, if requested. Other meeting costs include RAB meeting advertising (\$1,300 per meeting) in the *Los Angeles Times*, the *Orange County Register*, and the *Irvine World News*.

Mr. Joyce also informed the RAB that the Department of Defense has been forced by Congressional legislation and appropriations for Fiscal Year 1996 to cutback RAB

funding nationwide. Congress placed a \$6 million cap on all Department of Defense RAB expenditures. The Navy's share is \$2 million with \$30,000 for MCAS El Toro. The Office of the Chief of Naval Operations is preparing a letter that will formalize this action.

Ms. Rudolph stated that this is unacceptable. She led a strategy discussion and the RAB approved her idea of writing a letter to Congressional representatives (39th, 45th, 46th and 47th Congressional districts) that would be signed by RAB members. She and other RAB members encouraged all RAB members to write letters as individuals. Ms. Rudolph said she will also provide the RAB letter to the press. Mr. Joyce reiterated that the Marine Corps/Navy is not responsible for the RAB funding cap. RAB membership lists (address, phone numbers) were provided to Ms. Rudolph.

**Regulatory Agency Comment Update - Tayseer Mahmoud, California Environmental Protection Agency (Cal-EPA), Department of Toxic Substances Control**

Mr. Mahmoud said that Bonnie Arthur, U.S. EPA, was unable to attend tonight. He informed RAB members that both U.S. EPA and Cal-EPA recently reviewed and provided comments on various technical documents (*see handouts section, U.S. EPA and Cal-EPA DTSC comments, at the end of the minutes*). Copies of agency comments were provided at the meeting. Mr. Mahmoud said the agencies are currently reviewing the Draft Phase II Remedial Investigation Reports for Landfill Sites 3 and 5 and the Draft Report Anthropogenic PAH Reference-Level Study.

**Letters to Agencies - Ms. Marcia Rudolph, RAB Community Co-Chair**

Ms. Rudolph said that some RAB members recently communicated by letter to various government agencies and signed those letters as RAB members. She reminded RAB members that their comments on Installation Restoration Program reports and documents are to be submitted to the agencies formally through the RAB. If a RAB member wants to provide personal opinions and comments, this is to be done under an individual's signature not as a RAB member. She reiterated that personal opinions are not formal RAB positions.

**MEETING EVALUATION**

Suggestions for future meetings include using microphones, encouraging more interaction and flexibility during question and answer sessions, and conducting a brief site orientation using the aerial photo or a map prior to technical presentations. RAB members expressed the need for getting the subcommittees active by reviewing or revising subcommittee roles and the Rules of Operation pertaining to membership responsibilities and meeting attendance. RAB members agreed to have the

subcommittees meet informally on Wednesday, 26 June, 1996 from 6:30 to 9 p.m. at the City of Irvine, Conference and Training Center to discuss subcommittee roles, responsibilities, and RAB rules of operation. RAB members need to contact Ms. Rudolph for more information.

## **FUTURE MEETING DATE AND LOCATION**

The next RAB meeting is scheduled for Wednesday, July 31, 1996 at the City of Irvine, Conference and Training Center, from 6:30-9 p.m. The Conference and Training Center is reserved for RAB subcommittee meetings on Wednesday, 26 June, 1996 from 6:30 to 9 p.m.

### **Attachments:**

- *Sign-in sheets*

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

- *RAB meeting agenda*
- *Draft RAB meeting minutes - April 24, 1996 meeting*
- *"Blue Sheet" - MCAS El Toro Major Document Release and Review, Revised for 5/29/96 RAB Meeting*
- *Presentation handouts - Status of Underground Storage Tank Program*
- *Presentation handouts - BRAC Funding and Budget Process*
- *U.S. EPA and Cal-EPA, DTSC comments (separate agency handouts) :*
  - Draft Groundwater Monitoring Report*
  - Draft Groundwater Data Trends and Recommendations Report*
  - Draft Remedial Investigation Report for Communication Landfill, Site 17, Operable Unit 2B*
  - Draft Remedial Investigation Report for Magazine Road Landfill, Site 2, Operable Unit 2B*
- *Additional Cal-EPA, DTSC comments (handouts):*
  - Draft Work Plan for Vapor Extraction Pilot Testing, Site 24*
  - Attachment to Cal-EPA Draft RI Report for Site 2 Comments - California Integrated Waste Management Board, Local Enforcement Advisory, No. 16, September 24, 1994, entitled "Clean Closure"*

**MARINE CORPS AIR STATION EL TORO**  
**Installation Restoration Program**  
**Restoration Advisory Board Mission Statement and Operating Procedures**

This "Marine Corps Air Station (MCAS) El Toro, Installation Restoration Program, Restoration Advisory Board (RAB), Mission Statement and Operating Procedures", replaces the original document dated February 28, 1995, (reference pg. five (5), Section IV., b. of this document). Modifications were made and approved by a majority vote of the RAB members present at the RAB meeting of January 31, 1996, at Irvine City Hall. The RAB's recommended amendments are incorporated into this new, revised version of the "Mission Statement and Operating Procedures".

The Restoration Advisory Board (RAB) mission statement and operating procedures, herein referred to as "the mission statement and operating procedures", is entered into by the following parties; U. S. Marine Corps (USMC); U. S. Environmental Protection Agency (USEPA), Region 9; California Department of Toxic Substances Control (DTSC), Region 4; and the RAB. Marine Corps Air Station (MCAS) El Toro has developed a Community Relations Plan (CRP) which outlines the community involvement program. The RAB supplements the community involvement effort. A copy of the CRP is available at the information repository located at the Heritage Park Regional Library, 14361 Yale Avenue, Irvine, CA 92714.

**I. Mission Statement of the RAB**

a. The mission of the RAB is to promote community awareness and obtain timely constructive community review and comment on proposed environmental restoration actions to accelerate the cleanup and property transfer of MCAS El Toro. The RAB serves as a forum for the presentation of comments and recommendations to USMC, Remedial Project Managers (RPMs) of USEPA, and DTSC.

**II. Basis and Authority for this Mission Statement and Operating Procedures**

a. This mission statement and these operating procedures are consistent with the Department of Defense (DoD), USEPA Restoration Advisory Board Implementation Guidelines of September 27, 1994, and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendment and Reauthorization Act (SARA) of 1986, particularly Sections 120 (a), 120 (f), 121 (f), and 10 U.S.C. 2705, enacted by Section 211 of SARA, and September 9, 1993, DoD policy letter entitled, "Fast Track Cleanup at Closing Installations".

**III. Operating Procedures**

**A. Membership**

1. All RAB members must reside in or serve communities within Orange County.
2. Members shall serve without compensation. All expenses incidental to travel and review inputs shall be borne by the respective members or their organization.

3. If a member fails to attend two consecutive meetings without contacting the RAB, or at least one of the RAB co-chairs, or fulfill member responsibilities including involvement in a subcommittee, the RAB co-chairs may ask the member to resign.

4. Members unable to continue to fully participate shall submit their resignation in writing to either of the RAB co-chairs.

5. Total membership in the RAB shall not exceed 50 members.

6. Application for RAB membership vacancies shall take place as such vacancies occur. Applications will be reviewed and approved by the Base Realignment and Closure (BRAC), Environmental Coordinator (BEC), USEPA, and DTSC along with consultation with the RAB community co-chair. Candidates will be notified of their selection in a timely manner.

7. Each RAB community member is considered equal, whatever their position in the community, and has equal rights and responsibilities.

### **RAB Membership Responsibilities**

a. Actively participate in a subcommittee and review, evaluate, and comment on technical documents and other material related to installation cleanup, all assigned tasks are to be completed within the designated deadline date.

b. Attend all RAB meetings.

c. Report to organized groups to which they may belong or represent, and to serve as a mediator for information to and from the community.

d. Serve in a voluntary capacity.

### **B. RAB Structure**

1. The RAB shall be co-chaired by the MCAS El Toro BEC, and a community co-chair member. The BEC shall preside over the orderly administration of membership business.

2. A community co-chair will be selected by a majority vote of the RAB community members in attendance. Elected officials and government agency staff members of any legally constituted MCAS El Toro reuse groups are excluded from holding the community co-chair position. The community co-chair will be selected annually on the anniversary of the effective date of the agreement.

### **Community Co-Chair Responsibilities**

a. Assure that community issues and concerns related to the environmental restoration/cleanup program are brought to the table.

- b. Assist the USMC in assuring that technical information is communicated in understandable terms.
- c. Coordinate with the BEC to prepare and distribute an agenda prior to each RAB meeting, and for the review and distribution of meeting minutes.
- d. Assist subcommittees in coordinating and establishing meeting times/locations.
- e. The community co-chair may be replaced by a majority vote of the RAB community members present at the meeting in which a vote is undertaken.

3. The RAB shall meet quarterly. More frequent meetings may be held if deemed necessary by the RAB co-chairs. The BEC will facilitate in the arrangement of the meetings and notify members of the time and location.

4. Agenda items will be compiled by the RAB co-chairs. Suggested topics should be given to the BEC or community co-chair not later than two (2) weeks prior to the meeting. The BEC shall be responsible for providing written notification to all RAB members of the upcoming agenda and supporting documents, at least two (2) weeks prior to the date, time, and place of scheduled RAB meeting.

5. The BEC shall be responsible for recording and distribution of meeting minutes. Also, the BEC shall collect a written list of attendees at each meeting, which will be incorporated into the meeting minutes. For quarterly meetings, the minutes will be distributed 30 days prior to the following meeting. For more frequent meetings, the minutes will be distributed as soon as possible.

6. A copy of the RAB meeting minutes will be sent to all RAB members. Supporting documents will be available for public review in the information repository and other repositories as identified.

7. RAB members will be asked to review and comment on various environmental restoration documents. Written comments may be submitted individually by a member, or by the RAB as a whole. Written comments will be submitted to the community co-chair on the subject documents within the schedule as provided for regulatory agency comments. The community co-chair will consolidate comments from RAB members and provide all comments received to the BEC. The BEC will ensure that a written response is provided to the RAB in a timely manner.

### **Subcommittees**

8. The RAB will develop subcommittees, which will provide a concentrated focus on assigned issues. Assignments will be based on the needs of the RAB.

a. Subcommittees will consist of standing subcommittees and ad hoc committees. Membership on subcommittees will be comprised of volunteers, or may be selected by the BEC and the community co-chair. Subcommittee membership will generally be limited to seven (7)

people, but may be supplemented at the discretion of the subcommittee chair. All subcommittees will set their own agendas and meeting times, will be open to the public, and will notify the BEC and community co-chair of the meeting times and places. Each subcommittee will elect a chair. The subcommittee membership may dismiss a subcommittee chair by a majority vote. Subcommittee chair removal is determined at the meeting where removal is addressed by majority vote of the RAB members present.

b. RAB members may serve on one or more subcommittees, but may not chair more than one subcommittee.

c. Standing subcommittees are established as follows:

- (1) BRAC Clean-up Plan (BCP)
- (2) General Environmental
- (3) Community Environmental Response Facilitation Act/Environmental Baseline Survey (CERFA/EBS)
- (4) Compliance/Resource Conservation and Recovery Act-Facility Assessment (Compliance/RFA)
- (5) Operable Unit One (OU1) - Groundwater
- (6) Operable Unit Two (OU2) - Landfills
- (7) Operable Unit Three (OU3) - All other sites

d. Membership on the BRAC Clean-up Subcommittee will include at a minimum, the BEC, the community co-chair, and the chairs of each of the other standing subcommittees.

e. Standing subcommittees will be reviewed annually, in September, to determine if their continued existence is required.

f. Ad hoc subcommittees will be established as needed and will be limited to one year.

g. Subcommittees may request the participation, involvement and advise of regulatory agency members.

9. MCAS El Toro has established an information repository for all public documents relating to restoration activities at MCAS El Toro. The repository is located at the Heritage Park Regional Library, 14361 Yale Avenue, Irvine, CA 92714. RAB members, as well as the general public, are authorized access to any documents, studies or information, which have been placed in the repository or distributed at RAB meetings. The community co-chair will be provided one copy of all draft documents. Each subcommittee will be provided up to seven copies of draft documents.

#### **IV. Effective Date and Amendments**

a. The effective date of this mission statement and operating procedures shall be the date that the last signatory signs this mission statement and operating procedures.

b. This mission statement and operating procedures may be amended by a majority vote of the RAB members present. Amendments must be consistent with the MCAS El Toro Federal Facility Agreement (FFA), and the statues stated in Part II of the mission statement and operating procedures, (Basis and Authority for this Mission Statement and Operating Procedures).

**V. Terms and Conditions**

a. The terms and conditions of this RAB mission statement and operating procedures, and DONs endorsement thereof, shall not be construed to create any legally enforceable rights, claims or remedies against DON or commitments or obligations on the part of DON, and shall be construed in a manner that is consistent with CERCLA, 10 U.S.C. Section 2705, and 40 CFR Part 300.

**VI. Termination**

a. This mission statement and operating procedures will be terminated upon completion of requirements as stated in the FFA. However, after implementation of the final remedial design, it may be terminated earlier upon a majority vote of the RAB membership.

**VII. Signatories to the Membership Mission Statement and Operating Procedures**

IN WITNESS WHEREOF, we have set our hand this \_\_\_\_\_ day of \_\_\_\_\_ 1995.

\_\_\_\_\_  
MCAS El Toro BRAC Environmental Coordinator

\_\_\_\_\_  
RAB Community Co-Chair

\_\_\_\_\_  
U. S. Environmental Protection Agency RPM

\_\_\_\_\_  
California Department of Toxic Substances Control  
RPM

**The original "Mission Statement and Operating Procedures", dated February 28, 1995, is on file at Marine Corps Air Station (MCAS) El Toro, Environment and Safety. It was signed by Mr. Joseph Joyce, Base Realignment and Closure (BRAC), Environmental Coordinator (BEC), Ms. Marcia Rudolph, Restoration Advisory Board (RAB), Community Co-chair, Ms. Bonnie Arthur, Environmental Protection Agency (EPA), Remedial Project Manager, and Mr. Juan Jimenez, Department of Toxic Substances Control (DTSC), Remedial Project Manager.**

16 July 1996

APPENDIX A  
MCAS El Toro Schedule  
(Operable Units 1, 2A, 2B, & 2C)

	<u>Current Completion Dates</u>	<u>New Negotiated Completion Dates</u>
<u>Operable Unit 1</u>		
Phase I Tech Memo	7 May 93	7 May 93
Draft Phase II Work Plan	9 Nov 93	9 Nov 93
Draft Remedial Investigation	30 Dec 94	30 Dec 94
Draft Interim Action Feasibility Study	15 Oct 95	15 Oct 95
Draft Proposed Plan	18 Dec 95	18 Dec 95
Draft Final RI/IAFS	9 Aug 96	9 Aug 96
Draft Final Proposed Plan	9 Aug 96	25 Nov 96
Draft Interim Record of Decision	22 Nov 96	20 May 97
Draft Long-term Groundwater Monitoring Work Plan	20 Feb 97	
<u>Operable Unit 2A</u>		
Phase I Tech Memo	7 May 93	7 May 93
Draft Phase II Work Plan	20 Mar 95	20 Mar 95
Start Phase II Field Work	20 Jul 95	20 Jul 95
Draft Remedial Investigation	20 Feb 96	20 Feb 96
Draft Feasibility Study	25 Jul 96	9 Aug 96
Draft Proposed Plan	25 Nov 96	25 Nov 96
Draft Record of Decision	20 Feb 97	20 May 97
<u>Operable Unit 2B</u>		
Phase I Tech Memo	7 May 93	7 May 93
Draft Phase II Work Plan	20 Mar 95	20 Mar 95
Start Phase II Field Work	20 Jul 95	20 Jul 95
Draft Remedial Investigation	20 Mar 96	20 Mar 96
Draft Final Remedial Investigation	N/A	6 Sep 96
Draft Feasibility Study	20 Jul 96	6 Sep 96
Draft Proposed Plan	20 Nov 96	13 Jan 97
Draft Record of Decision	20 Feb 97	21 Jul 97
<u>Operable Unit 2C</u>		
Phase I Tech Memo	7 May 93	7 May 93
Draft Phase II Work Plan	20 Mar 95	20 Mar 95
Start Phase II Field Work	20 Jul 95	20 Jul 95
Draft Remedial Investigation	20 Apr 96	20 Apr 96
Draft Final Remedial Investigation	N/A	8 Oct 96
Draft Feasibility Study	20 Aug 96	8 Oct 96
Draft Proposed Plan	20 Dec 96	13 Feb 97
Draft Record of Decision	20 Mar 97	21 Jul 97

REVISED for 7/31/96 RAB Meeting

MCAS EL TORO RAB

MAJOR DOCUMENT RELEASE & REVIEW DATES

<u>Upcoming Major Documents</u>	<u>Anticipated Release Date</u>	<u>Review Comments Due</u>	<u>Subcommittee</u>
<b>BRAC CLEANUP PLAN (BCP)</b> - Final BCP	<del>1/96</del> 3/1/96	<del>2/96</del>	BCP
<b>GENERAL ENVIRONMENTAL</b>			General Environmental
• <b>Tank 398 Free Product Removal</b>			
<del>Draft Report</del>	<del>1/11/95</del>	<del>2/10/95</del>	
<del>Response to Comments</del>		<del>4/95</del>	
- Quarterly Groundwater Monitoring Report	6/96 & 9/96		
<b>RCRA FACILITY ASSESSMENT (RFA) ADDENDUM</b>			Compliance/RFA
<del>Draft Final Addendum Report</del>	<del>12/95</del>	<del>1/96</del>	
- Final Addendum Report	4/96		
<b>CERFA/ENVIRONMENTAL BASELINE SURVEY (EBS)</b>			CERFA/EBS
<del>Draft Report</del>	<del>11/94</del>	<del>2/10/95</del>	
- Final	4/1/95		
<b>OPERABLE UNIT 1 (OU1) - GROUNDWATER</b>			OU1
<del>Revised Draft Interim Action</del>			
<del>Feasibility Study</del>	<del>10/16/95</del>	<del>12/14/95</del>	
- Remedial Investigation/Interim Action Feasibility Study (RI/IAFS) and Addendum	8/9/96	10/8/96	
<b>OPERABLE UNIT 2 (OU2)</b>			OU2
• Volatile Organic Compounds (VOCs) Source Area - OU-2A			
<del>Draft Remedial Investigation (RI) Report</del>	<del>2/20/96</del>	<del>4/22/96</del>	
- Draft Feasibility Study (FS) Report	8/9/96	10/8/96	
• Landfills - Sites 2 and 17 - OU-2B			
<del>Draft Remedial Investigation (RI) Report</del>	<del>3/20/96</del>	<del>5/20/96</del>	
- Draft Feasibility Study (FS) Report	9/6/96	11/5/96	
• Landfills - Sites 3 and 5 - OU-2C			
<del>Draft Remedial Investigation (RI) Report</del>	<del>4/19/96</del>	<del>6/19/96</del>	
- Draft Feasibility Study (FS) Report	10/4/96	12/3/96	
<b>OPERABLE UNIT 3 (OU3) - SOILS ONLY SITES</b>			OU3
- Draft Remedial Investigation (RI) Report	11/19/96	1/20/97	
- Draft Feasibility Study (FS) Report	3/20/97	5/20/97	
<b>COMMUNITY RELATIONS PLAN (Revised)</b>			Community Relations
<del>Draft Revised CRP</del>	<del>12/95</del>	<del>1/96</del>	
- Final Revised CRP	3/96		

## DEPARTMENT OF TOXIC SUBSTANCES CONTROL



Room 4  
West Broadway, Suite 428  
San Diego, CA 92101-4444  
(619) 491-4238

June 19, 1996

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

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

Dear Mr. Joyce:

The California Environmental Protection Agency (Cal/EPA) has completed the review of the above subject document dated April 19, 1996, prepared by Bechtel National, Inc. The report presents the results of Remedial Investigation (RI) conducted at Site 3, the Original Landfill. Site 3 is one of two sites in Operable Unit 2C for the MCAS El Toro.

This letter is to transmit the enclosed Department of Toxic Substances Control (DTSC) comments (and the California Integrated Waste Management Board comments). The Regional Water Quality Control Board comments will be submitted by DTSC by the end of the month. The report is well written. A few clarifications and modifications are needed as outlined in the enclosed comments. Please incorporate the agreed upon comments, where appropriate, and send us a response to comments along with a revised document.

Thank you for your cooperation. If you have any questions, please call me at (310) 590-4891.

Sincerely,

  
for Tayseer Mahmoud  
Remedial Project Manager  
Base Closure Unit  
Office of Military Facilities

Enclosures

cc: See Next Page



*Mr. Joseph Joyce*  
*June 19, 1996*  
*Page 2*

cc: Ms. Bonnie Arthur  
U. S. Environmental Protection Agency  
Region IX  
Hazardous Waste Management Division, H-9-2  
75 Hawthorne Street  
San Francisco, California 94105-3901

Mr. Lawrence Vitale  
Remedial Project Manager  
California Regional Water Quality Control Board  
Santa Ana Region  
3737 Main Street, Suite 500  
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 E. Edinger Avenue  
Santa Ana, California 92705

Ms. Sherrill Beard  
Engineering Geologist  
Department of Toxic Substances Control  
245 West Broadway, Suite 350  
Long Beach, California 90802

Lt. Hope Katcharian  
Director, Environmental Engineering Division (IAU)  
Marine Corps Air Station-El Toro  
P. O. Box 95001  
Santa Ana, California 92709-5001

Mr. Tim Latas  
Bechtel National, Inc.  
401 West A street, Suite 1000  
San Diego, California 92101-7905

It is the opinion of the authors of this report that it is not clear whether the source of benzene contamination is due to the landfill, the tank farm, and/or Agua Chinon Wash. In other parts of the report it is mentioned that the contamination appears to be derived from Tank Farm No. 5. The discussion needs to be enhanced, clarified, and consistent throughout the report.

**11. Section 4.5.8, Radionuclides, page 4-141**

Total gross alpha measured in groundwater downgradient of the landfill at monitoring well 03-DGMW64 measured 28 pCi/L. This value exceeds U.S. EPA MCL of 15 pCi/L and it is twice the gross alpha (14.5 pCi/L) measured at the upgradient monitoring well 03-UGMW26. Total gross alpha does not help too much in determining whether or not there is an actual release from the landfill. I suggest that you conduct isotopic analysis for Radium-226, K-40, etc., and anything that might have been disposed in the landfill. Compare the numbers to background to determine what is making the higher reading. When you generate the information, please send an additional copy to:

Ms. Darice Bailey  
California Department of Health Services  
Environmental Management Branch  
601 North 7th Street, MS 396  
P.O. Box 942732  
Sacramento, California 94234-7320  
(916) 324-2209

Please correct the typographical error in the last sentence of the 2nd paragraph.

**12. Section 5.1.3.3, Migration in Groundwater, page 5-10**

Please discuss the mechanism that will be used to address the benzene contamination. Also, when will the Navy submit such proposals to the regulatory agencies.

**13. Section 5.3.3.1, Volatile Organic Compounds in Groundwater, page 5-25**

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

**14. Section 6, Human-Health Risk Assessment**

**See attached Memorandum dated June 7, 1996 from DTSC staff Toxicologist,  
Dr. John Christopher.**

**DEPARTMENT OF TOXIC SUBSTANCES CONTROL**  
**Comments on**  
**Draft Phase II Remedial Investigation Report For Site 3, OU-2C**  
**Marine Corps Air Station-EI Toro**  
**Dated April 1996**

**GENERAL COMMENTS:**

**SPECIFIC COMMENTS:**

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

Show location of Unit 3, solvent spill area on Figure ES-1.

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

It is mentioned in the report that accedence of drinking water maximum contaminant levels (MCLs) for benzene appears to be derived from Tank Farm No. 5. Please show location of Tank Farm No. 5 on Figure ES-1.

Top of page ES-7: Provide a statement that gross alpha and beta exceed MCLs if so.

**3. Executive Summary, Conclusions, page ES-10**

For groundwater contamination decision, it is mentioned that the remedial design will not need to address benzene contamination. Please discuss the mechanism that will be used to address the benzene contamination. Also, when will the Navy submit such proposals to the regulatory agencies.

**4. Section 1.1.1, Guidance and Agreement, Figure 1-3**

Revise Figure 1-3 to add the Remedial Design step before Remedial Action. Also, add Certification step after Operation and Maintenance.

Reference to Department of Health Services now being California Environmental Protection Agency (Cal/EPA) is not accurate. The correct reference is Department of Toxic Substances Control (DTSC). Both DTSC and California Regional Water Quality Control Board (RWQCB) are under the umbrella of Cal/EPA.

**Rewrite the sentence regarding FAA signatory agencies as follows: "The BCT consists of representatives from SWDIV, U.S.EPA, and Cal/EPA (DTSC & RWQCB)."**

**5. Section 1.1.2, Remedial Investigation Approach**

**Reference to Cal/EPA should be changed to DTSC.**

**6. Section 1.2.2.2, Recent Station Operations**

**Revise the 1st sentence in the 2nd paragraph to read as follows: Currently, hazardous materials/wastes are managed under appropriate Federal, State, local, and DoN requirements.**

**Also, reference to on-Station RCRA-Interim-Status Storage Facility is not accurate because the term Interim-Status refers to temporary authorization until a final permit is received from the regulatory agencies. Please note that MCAS El Toro was issued a RCRA Hazardous Waste Storage Permit in August 1993. DTSC terminated the permit on March 8, 1996 after we accepted the closure certification for Building 673-T3. MCAS El Toro is allowed to store hazardous waste at generator accumulation areas for periods less than ninety (90) days.**

**7. Section 1.2.3.1, Phase I Remedial Investigation Results, page 1-3**

**The text references soil and groundwater samples collected at Site 4. Please show location of Site 4 on Figure 1-4 for clarifications.**

**8. Section 2.13, Investigation-Derived Waste**

**Soil generated during the Phase II RI field procedures was containerized, sampled, and moved to Site 5 for storage. We like to point out that if the investigation-derived waste meets the hazardous waste criteria, MCAS El Toro is allowed to store it at Site 5 for periods less than ninety (90) days. Also, it must be managed under appropriate Federal, State, local, and DoN requirements.**

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

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

**Identify the limits of exposed and buried landfill waste.**

**10. Section 4.5.1, Volatile Organic Compounds, page 4-118, last sentence**

*Mr. Joseph Joyce*

*June 19, 1996*

*Page 3*

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

**Mr. Bernie Lindsey  
Remedial Project Manager  
Naval Facilities Engineering Command  
Southwest Division  
Code 1831.BL  
1220 Pacific Highway  
San Diego, California 92132-5187**

**Dr. Dante Tedaldi  
Bechtel National, Inc.  
401 West A street, Suite 1000  
San Diego, California 92101- 7905**

**Dr. John Christopher, Ph.D., D.A.B.T.  
Office of Scientific Affairs  
Department of Toxic Substances Control  
P.O. Box 806  
Sacramento, California 95812-0806**

## DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Region 4  
245 West Broadway, Suite 425  
Long Beach, CA 90802-4444



## MEMORANDUM

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

FROM: Sherrill Beard, RG *Sherrill Beard*  
Geological Services Unit  
Region 4

Concur: Karen Baker, CHG *Karen Baker*  
Geological Services Unit  
Region 4

DATE: 13 June 1996

SUBJECT: Comments on "Draft Phase II Remedial Investigation Report Operable Unit 2C  
- Site 3, Marine Corps Air Station El Toro, California"

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As requested by the Office of Military Facilities, the Geological Services Unit (GSU) of the Department of Toxic Substances Control (DTSC) has reviewed the document entitled Draft Phase II Remedial Investigation Report Operable Unit 2C - Site 3, Marine Corps Air Station (MCAS) El Toro, California (the Report), dated April 1996. The document was prepared by Bechtel National, Inc. (Bechtel) for Southwest Division Naval Facilities Engineering Command (Navy).

This review focuses on geology and hydrogeology of the Report, in particular, Section 4 - Nature and Extent of Contamination, Section 5 - Fate and Transport, and Section 7 - Conclusions and Recommendations. Overall, the Report reflects the proposed field investigation, in addition to discussions and decisions resulting from the weekly technical meetings. The Report contains a great deal of the data collected during the field investigation, however, more discussion of landfill boundaries and water quality interpretation is needed. Specifically, regarding DQO decisions number one, "identify limits of exposed and buried waste", and number 5, "determine if leachate is impacting soil or groundwater." The Report does not clearly outline the foundation to support the "inferred" bottom boundary of the landfill, therefore, in the final draft report the discussion should reflect the uncertainty of the boundary interpretation. More significant, the Report presentation needs to clearly identify if the landfill leachate is impacting groundwater. There is inconsistency in the discussion included in Section 7 about the landfill leachate and the impact to



soil and the groundwater. Furthermore, when evaluating the presumptive remedy with regard to groundwater, the existing wells should be evaluated in terms of adequately being able to detect a release from the landfill and additional monitoring wells should be installed, if needed. Due to the nature of the investigation, it was not determined if there may exist a reservoir of contaminants within the unsaturated section. Therefore, a contingency plan should be developed if, the currently low levels of contaminants in groundwater, show elevated concentrations in the future.

### Specific Comments

1. **Executive Summary, Remedial Investigation Scope, Figure ES-1;** Show former Site 3 boundaries on Figure ES-1 and provide an explanation why site boundaries were reevaluated and expanded. This information will support the reasons why the scope of the investigation was increased.
2. **Executive Summary, Figure ES-1, Figure 1-2 and other applicable maps;** All maps showing the boundaries of Site 3 should be revised to show consistency throughout the Report.
3. **Executive Summary, Nature and Extent of Contamination, page ES-6;** The estimation for the volume of waste should be revised to reflect recent information collected during the Phase II investigation.

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

4. **Executive Summary, Human-Health Risk Assessment, page ES-8 and Section 6.3.8, Toxicity Criteria for Chromium, page 6-16;** Total chromium values, instead of hexavalent chromium values, for groundwater should not be used for risk-assessment. This approach will result in an over estimation of risk. Samples should be collected and speciated for hexavalent chromium and analysis of risk should be determined based on concentrations actually detected at the site and not on the assumption that concentrations of hexavalent chromium in groundwater are low, as describe in Section 6.3.8.
5. **Section 1.2.2.3, History of Site 3 Landfill Operations, forth bullet, page 1-18;** Prior to referencing Site 4, the Ferrocene Spill Area, a description of Site 4 should be provided in Section 1.2 or Section 1.2.1.1.
6. **Section 2.7, Leachate Sampling, page 2-29;** Prior attempts at sampling the lysimeters have proven unsuccessful, therefore, it is recommended to limit future sampling efforts.

7. **Section 2.8.1, Monitoring Well Development and Dedicated Pump Installation, page 2-32;** Prior to installation or replacement of additional dedicated pumps, BCT approval should be obtained. Many of the dedicated pumps installed in 1992 and 1993 are no longer functional, somewhat due to the corrosive nature of the groundwater. Therefore, it would be prudent to utilize temporary pumps for future groundwater sampling events.
8. **Section 3.5.2, Regional Occurrence and Movement of Groundwater, Figure 3-6, page 3-19;** In the legend of this figure, the explanation for the groundwater divide depicted near Site 2 should be revised to read "Groundwater Divide Location and Trend Inferred."
9. **Section 3.6.2, Site 3 Aquifer Hydraulic Properties and Section 3.6.3, Site 3 Aquifer Geotechnical Properties, page 3-25;** Provide a discussion comparing the differences between hydraulic and geotechnical aquifer permeabilities. The permeability values reported are different by several orders of magnitude. Additionally, it should be noted in the discussion that the samples collected for the aquifer geotechnical properties are from the lysimeter locations, therefore, the soil samples were collected from the vadose zone and not from the aquifer. Also please cross-check the geotechnical results in Appendix K with the values reported in Table 3-3. Data reported for specific samples in Appendix K are reported for different samples in Table 3-3. For example, percent moisture for sample 76C0008 is reported as 9.4 in Table 3.3 but in Appendix K sample 76C009 is reported as having a percent moisture of 9.4. There are several other discrepancies of this nature between Table 3.3 and Appendix K.
10. **Section 3.6.4.1, Surface Water Quality, page 3-26;** Note: the sixth line of first paragraph, change 03SW1 to 03SW3.
11. **Section 3.6.4.2, Groundwater Quality, page 3-28;** Please edit and delete the appropriate paragraphs in this section.

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

Mr. Mahmoud

13 June 1996

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

12. **Section 4, page 4-2, forth bullet, and Section 4.4, page 4-36; See the attached toxicologist's comment, number 1.**
13. **Section 4, Nature and Extent of Contamination, page 4-2, second full paragraph; Please clarify "other agency standards". Provide a list of the standards that are used to identify COPCs.**
14. **Section 4.1.6, Aerial Photograph Review, page 4-8, first paragraph; Please show the disturbed area and the several stained areas located east and southeast of the existing site boundaries, as shown on the 1958 aerial photograph. Also provide an explanation for the existence of such features.**
15. **Section 4.1.7, Interviews with MCAS El Toro Personnel, page 4-8, third bullet; If available, provide the location of the 3,000 cubic yards of excavated soil that contained waste.**
16. **Section 4.4.1.2, Subsurface Soil, Table 4-17 and Table 4-18; In addition to U.S. EPA Region IX Residential PRGs, please provide background concentrations presented in Appendix L, Table L-4.**
17. **Section 4.4.2.1, Shallow Soil, page 4-69, sixth paragraph; Please provide further discussion about the statement "...the laboratory noted that the chromatograph patterns for these analyses were not typical for these fuels."**
18. **Figure 4-12, page 4-137; Please show the boundaries of Tank Farm No. 5. Section 4.5.1, Volatile Organic Compounds, indicates benzene detects in monitoring wells 04\_DBMW40 (20 ug/l) and 04\_DGMW63 (5 ug/l) may be the result of activities at Tank Farm No.5, therefore it is relevant to show the geographic relationship of the tank farm to Site 3.**

19. **Section 4.5.6, Metals, page 4-140;** The discussion regarding elevated concentrations of nickel being attributed to naturally occurring processes needs further support. There is insufficient data presentation to support this conclusion.
20. **Section 5.3.2.1, Volatile Organic Compounds, page 5-23;** Support should be provided either in this section or in prior sections detailing the conclusion that benzene detects in groundwater are a result of the adjacent tank farm. Due to the limited nature of the investigation, relative to the size of the site, it is difficult to conclude that the occurrence of benzene in groundwater exclusively is a result of the tank farm area.
21. **Section 5.3.3, Groundwater Transport, page 5-25;** Change upstream and downstream to upgradient and downgradient.
22. **Section 5.3.3.1, Volatile Organic Compounds in Groundwater, page 5-25;** This section should state that the maximum benzene concentration reported in groundwater for the Site 3 monitoring wells is 5 ug/l, additionally it should state 20 ug/l of benzene was detected at monitoring well 04\_DBMW40.
23. **Section 7, Conclusions and Recommendations, Table 7-1, page 7-3;** The "Nature and Extent" entry for DQO Decision 5 should be reevaluated. Low levels of SVOCs were detected in 21 of 21 groundwater samples collected and analyzed from Sites 3 and 4, yet it is stated that water quality parameters indicate that the landfill contents have not leached to groundwater. Please provide rationale for this interpretation.

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

24. **All Appendices;** It was our understanding that the primary reason each landfill site was submitted as an individual report was to make report writing and reviewing more manageable. Therefore, it is recommended that data included in the Appendixes are data that is applicable to the subject site of the report. Some appendixes, such as Appendix K, include data from other landfill sites.

**DEPARTMENT OF TOXIC SUBSTANCES CONTROL**

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**MEMORANDUM**

**TO:** Tayseer Mahmoud  
Office of Military Facilities (OMF)  
Southern California, Long Beach

**FROM:** John P. Christopher, Ph.D., D.A.B.T.  
Staff Toxicologist  
Office of Scientific Affairs (OSA)  
Human and Ecological Risk Section (HERS)

**DATE:** 7 June 1996

**SUBJECT:** MCAS El Toro: Draft RI Report for Site 3  
PCA: 14740 Site: 400055-45

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

**Background**

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

Site 3 is a landfill located to the east of the flight lines. During its several decades of operation, this landfill received various municipal, industrial, and construction waste. Future development for Site 3 is expected to be industrial in nature, but residential development could be located nearby.

**Document Reviewed**

We reviewed "Draft Phase II Remedial Investigation Report, Operable Unit 2C - Site 3, Marine Corps Air Station El Toro, California, CTO 0076/0135". This report, dated 12 April 1996, was prepared by Bechtel National, Inc., contractors to SWDIV. The request for OSA to review this report is dated 22 April 1996.

**Scope of Review**

The document was reviewed for scientific content. Minor grammatical or typographical errors that do not affect the interpretation have not been noted. However, these should be corrected in any future version of the document. We assume that sampling of environmental media, analytical chemistry data, and quality assurance procedures have been examined by regional personnel. If inadequacies in this regard for the purposes of risk assessment were encountered, they are noted. Any future changes or additions to the document should be clearly identified.

### **General Comments**

This is a thorough and especially well organized report. The risk assessment is well presented and adequate for the purposes of risk managers. We have some comments to which the Navy should respond, especially regarding chromium, but none of these should prevent the Navy from proceeding to finalize the RI report.

### **Specific Comments**

- 1. Use of Upper Tolerance Limits for Selecting Chemicals of Potential Concern (COPC), Appendix L, Sec. L.2.1:** The Navy selected the 95% upper tolerance limit on the 95th percentile ( $UTL_{95,95}$ ) as its comparator for the upper range of ambient concentrations of those metals found to be either normally or lognormally distributed; the maximum concentration detected ( $C_{MAX}$ ) was selected for the remaining metals. We do not accept the UTL as a comparator for the purposes of identifying COPC, because the method can be defeated with small sample sizes. With adequate sample populations, we favor the use of a simple estimate of a percentile for this purpose. We have expressed this to the Navy on numerous previous occasions.

At a meeting in San Francisco on 22-23 May 1996, the Navy presented convincing evidence the "percentile test" which we favor suffers from increasing probability of Type I error (*i.e.* wrongly deciding a metal is present above background concentrations) as the number of samples from the site and the number of comparisons against the percentile both increase. The Navy proposed that the "percentile test" be used in conjunction with other statistical tests of hypotheses, such as the Wilcoxon rank sum test, to permit formal estimates of Type I and Type II errors. We believe this approach is a good one and we recommend it for MCAS El Toro and other Navy bases.

- 2. Background Concentrations of Metals, Appendix L,:** We find it surprising that metals found at high frequencies of detection failed tests for either normality or

lognormality (Table L-4). In particular, we are surprised at the results for As, Ca, Cd, Mn, Ni, and possibly Th. High frequencies of detection usually lead to easily recognizable distributions, unless multiple populations and/or contamination are present. Because the Navy did not provide plots of cumulative probability vs. concentration, we are unable to determine what these distributions look like. Please supply these plots for all 23 metals analyzed, as described on page L-2, to aid in performing the task in Figure L-1 labeled "Remove outliers or possibly contaminated data". For instance, the highest detected value of cadmium, 11.4 mg/kg is approximately ten times higher than we would expect to see for soils in Orange County. If this value does not belong with the background data set, exclusion of this bioaccumulative and very highly toxic metal as a COPC could be made in error.

3. **Hexavalent Chromium, Sec. 4.4:** Were analyses for hexavalent chromium performed? If so, where are the results? If analyses were not performed, please explain. In the absence of such analyses, chromium must remain a COPC in both soil and groundwater and be considered to be 100% in the hexavalent state. Some discussion of the treatment of hexavalent chromium can be found in the risk assessment in Section 6.3.8, but we found no mention of this in the site characterization in Chapter 4.
4. **Table 4-36:** Values for organic chemicals are given as mg/kg, whereas Tables 4-34 and 4-35 report these results as µg/kg. Please correct the discrepancy.
5. **Sediment and Surface Water, Secs. 4.6-4.7:** The data reported in these sections were collected in Augua Chinon Wash. We were under the impression that the drainage channels comprised Site 25. Will these data be reported again?
6. **Ecological Risk Assessment:** We do not find any mention of risks to non-human receptors. At the very least, a screening assessment is required to determine if any ecologically important habitat or chemicals of potential ecological concern are present.
7. **Groundwater Pathway, Sec. 6.2.2, p. 6-8:** Will risks and hazards upon exposure to groundwater be combined in any way with the assessment previously submitted for Operable Unit 1, the regional groundwater?
8. **Benzene in Groundwater, Table 6-1:** Benzene is reported as a detected analyte in groundwater in Table 4-31, but it does not appear as a chemical to be considered in Table 6-1. Please correct this error and include benzene as a COPC. This will affect estimates of risk for potential future off-site receptors.

9. **Exposure Point Concentrations, Appendix P, Tables:**  $C_{MAX}$  is selected as the exposure point concentration for nearly every organic COPC at Site 3. We do not fault the reasoning which led to these selections. However, USEPA guidance (RAGS Part A, 1989) recommends a measure of central tendency for the exposure point concentration as part of its definition of a reasonable maximum exposure. We believe the systematic overuse of  $C_{MAX}$  might be misleading to risk managers. While we do not have a ready overall solution for this problem, we recommend that the Navy identify for risk managers those instances where estimates of risks are driven by  $C_{MAX}$  and thus could be overestimated.
10. **Toxicity Criteria for Dermal Exposure, Sec. 6.3.6, p. 6-16, and Table PII-3:** "Dermal Reference Doses" in Table PII-3 should be altered to reflect the values for dermal absorption recommended in Table 2 of Appendix A of *Preliminary Endangerment Assessment Guidance Manual* (DTSC, 1994). This will affect the values shown for arsenic (3% dermal absorption), cadmium (0.1%), chlorinated dioxins and furans (3%), chlorinated insecticides (5%), polycyclic aromatic hydrocarbons (15%), and polychlorinated biphenyls (15%). Employing these recommended values will lead to changes in some of the estimated risks and hazards for all the receptor groups. For instance, cancer risks for industrial use are driven principally by dermal exposure to 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (Table 6-2). Applying a dermal absorption of 3% would apparently lower the estimates below 1E-06.
11. **Hexavalent Chromium, Section 6.3.8, p. 6-16:** We disagree with the Navy's assertion that only a small fraction of total chromium in groundwater is likely to be in the hexavalent state. Hexavalent chromium, as chromate, is so very much more water soluble than most forms of trivalent chromium, such as chromic oxide, that it seems more likely to us that any chromium detected in groundwater will be hexavalent. As mentioned above, the absence of data on speciation of chromium presents an important data gap, leading to significant uncertainties.
12. **Risk Characterization, Sec. 6.4, pp. 6-17 ff.:** This section is well written and complete. Figures 6-2 through 6-7 are especially enlightening. It would be useful to number the tables in Appendix P and to provide in Section 6 references to key tables in Appendix P. Risks and hazards are quantified adequately for risk managers.
13. **Off-Site Residents, Sec. 6.4.1.3, p. 6-25:** In addition to the possible misidentification of the valence state of chromium in groundwater, as discussed above, this section contains other errors and should be rewritten. California EPA

does not publish classifications of carcinogens; this is done by USEPA. Chromium is classified a Group A carcinogen only via the inhalation route. It would be useful to name the other contributors to estimated cancer risk in groundwater, because this section seems to read as though the estimated risk of 1.9E-04 should be dismissed by risk managers.

14. **Conclusions, Sec. 7:** Table 7-1 presents a very useful and informative summary of findings and recommendations in the framework of the data quality objectives which guided the investigation. We disagree with the third to last bullet on page 7-19, in which the Navy states that groundwater is not a significant pathway for fate and transport. Nearly all the estimated risk to potential off-site residents comes from groundwater and these estimates are higher than for any other group of receptors. Therefore, groundwater is a crucial transport medium, in our estimation. Section 7.1.4 should be strengthened with comparisons to the "background" risks and hazards calculated in Appendix P. Section 7.2.1 should mention the lack of data on speciation of chromium in groundwater, which creates a large uncertainty in the estimates of risk.

### **Conclusions and Recommendations**

The report is well organized and well presented. The risk assessment is quite good, but it can be made completely acceptable upon incorporation of our recommendations.

1. The Navy should address ecological risks at Site 3.
2. The Navy should present a complete characterization of ambient concentrations of metals, including cumulative frequency plots. The UTL should be discarded in favor of a simple estimate of a percentile, perhaps in conjunction with another statistical tool such as the Wilcoxon rank sum test.
3. Benzene should be addressed as a chemical of concern in groundwater.
4. When estimated risks are driven by the maximum concentrations detected instead of an estimate of central tendency, the uncertainty introduced should be clearly pointed out to risk managers in the risk characterization and conclusions.
5. Potential risks due to hexavalent chromium are dismissed with assertions about the low probability of finding hexavalent chromium in groundwater. We do not accept this. The Navy should perform the analysis and assess risks on the materials actually present.

Tayseer Mahmoud  
7 June 1996  
Page 6

Reviewer: James M. Polisini, Ph.D.  
Staff Toxicologist, HERS

A handwritten signature in black ink, consisting of a large circle followed by a stylized 'M' and 'P'.

cc: Dr. M. Wade, HERS  
Mr. J. Paull, USEPA Region IX

JUN 03 1996



Pete Wilson  
Governor

James M. Strock  
Secretary for  
Environmental  
Protection

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

Subject: Review of Draft Phase II Remedial Investigation Report for Operable  
Unit 2C - Site 3, Marine Corps Air Station, El Toro, California

Dear Mr. Mahmoud:

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

Generally, the environmental investigation appears to be fairly comprehensive and addresses all major issues which may be encountered at a waste disposal site. However, it should be pointed out that in order to provide a sound closure of the site, there are several concerns and limitations which should be noted. Specifically, we submit the following comments:

1. Since the landfill covers about 20 acres, it is recommended that differential settlement analyses be conducted. This may be accomplished by reviewing existing surveying records or by estimating based on the thickness, age and composition of wastes.
2. Surface and subsurface soil analyses indicated wide spread contamination with solvents, diesel fuels and other compounds. Because the text mentions relatively flat grades and ponding potential throughout the site, the issue of soil contamination and may be reevaluated depending on a proposed final grading plan if any earth material is to be moved around or off site.
3. While Figure 4-1 lists one of the map symbols as "1994 Blueprint Feature," the text refers to it as "the large rectangular area shown on the 1944 blueprint." Please explain this discrepancy. Also, please advise if more soil exploration information exists about that area.

Cal/EPA

California  
Environmental  
Protection  
Agency

Integrated  
Waste  
Management  
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Recycled Paper

Mr. Tayseer Mahmoud  
Page 2

4. Section 3.1.4.3, Flood Discharge Estimates, mentions a flood-retarding basin as a discharge reducing measure which is to be implemented in June 1996. We request that this feature be shown on appropriate drawings.
5. Since the site is to be closed under the presumptive remedy approach, the extent of field investigation is satisfactory. However, should this site be affected by closure activities at other sites on the base (clean closure and/or landfill consolidation) or other than open, non-irrigated postclosure land use is proposed, further field explorations may be advisable.

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

Sincerely,



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

## DEPARTMENT OF TOXIC SUBSTANCES CONTROL



Region 4  
245 West Broadway, Suite 425  
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June 18, 1996

Mr. Joseph Joyce  
BRAC Environmental Coordinator  
U.S. Marine Corps Air Station - El Toro  
P. O. Box 95001  
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**COMMENTS ON DRAFT PHASE II REMEDIAL INVESTIGATION REPORT FOR THE COMMUNICATION STATION LANDFILL, SITE 5, OPERABLE UNIT 2C, MARINE CORPS AIR STATION (MCAS) EL TORO**

Dear Mr. Joyce:

The California Environmental Protection Agency (Cal/EPA) has completed the review of the above subject document dated April 1996, prepared by Bechtel National, Inc. The report presents the results of Remedial Investigation (RI) conducted at Site 5, the Perimeter Road Landfill. Site 5 is one of two sites in Operable Unit 2C for the MCAS El Toro.

This letter is to transmit the enclosed Department of Toxic Substances Control (DTSC) comments, and the California Integrated Waste Management Board comments dated June 3, 1996 on the report. The Regional Water Quality Control Board comments will be submitted by DTSC before the end of the month. A few clarifications and modifications are needed as outlined in the enclosed comments. Please incorporate the agreed upon comments, where appropriate, and send us a response to comments along with a revised document. Thank you for your cooperation. If you have any questions, please call me at (310) 590-4891.

Sincerely,

A handwritten signature in cursive script that reads "Tayseer Mahmoud".

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

Enclosures

cc: See Next Page



*Mr. Joseph Joyce*  
*June 18, 1996*  
*Page 2*

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*Mr. Joseph Joyce*  
*June 18, 1996*  
*Page 3*

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**DEPARTMENT OF TOXIC SUBSTANCES CONTROL**  
**Comments on**  
**Draft Phase II Remedial Investigation Report For Site 5, OU-2C**  
**Marine Corps Air Station El Toro**  
**Dated April 1996**

**GENERAL COMMENTS:**

The report presents the results of the Remedial Investigation (RI) conducted at Site 5, the Perimeter Road Landfill, to support decisions regarding the need for and scope for future remediation at the site. Data to support the landfill extent includes visual mapping, surface geophysics, trenching, soil borings, topographic and base maps, aerial photograph review, and interviews with MCAS El Toro personnel. The report contains data and results from the Phase II RI. In addition, the report presented previous investigations such as the Phase I RI and Air SWAT. To determine the nature and extent of contamination, the report described the sampling activities performed in air, soil gas, soil, and groundwater as follows:

Air Sampling: Four types of air sampling were conducted: instantaneous surface sampling over the entire landfill; 25-minute integrated surface samples from the landfill surface; 24-hour ambient air samples at the landfill perimeter; and isolation flux chamber samples from the landfill surface. Fifteen air samples were collected during the Phase II RI, including three integrated air samples, six ambient air samples and six isolation flux chamber samples. In addition, instantaneous surface sampling for methane was conducted over the entire landfill. Air sampling indicated that volatile organic compounds (VOCs) and methane are being emitted from the surface of the landfill. VOCs and methane were also detected in air samples during an Air SWAT in 1990.

Soil Gas: During a 1990 Air SWAT, five soil gas samples were collected at depths from eight to fifteen feet below ground surface (bgs) and analyzed for ten specific VOCs. Four VOCs were detected: Methylene chloride, chloroform, tetrachloroethane (PCE), and trichloroethane (TCE). During Phase II RI, twenty-one shallow soil gas samples were collected at seventeen locations from depths ranging between eight and fifteen feet bgs. Three of the seventeen soil gas samples detected 1,1,2-Trichlorotrifluoroethane (F-113) at concentrations of 1, 1, and 2 µg/L and TCE at concentrations of 5, 7, and 10 µg/L. Ten deep soil gas samples were obtained from three locations at depths ranging from 81 to 95 feet bgs. TCE was detected at one of the three locations and toluene was detected at two of the three locations. The maximum TCE and toluene concentrations detected was 5 and 15 µg/L, respectively.

Perimeter Landfill Gas Migration Sampling: Three perimeter landfill gas migration samples were collected at three sampling stations inside the perimeter of the landfill during the Air SWAT. The air samples were analyzed for TOC as methane. No methane was detected in these samples. Eleven perimeter landfill soil gas samples were collected from three sampling locations during the Phase II RI. Samples were collected at depths ranging from 10 to 80 feet bgs. The samples were analyzed for VOCs and methane. The analyses of the samples detected methane in nine of the eleven samples. At one of the sample locations, TCE and Freon 113 were also detected.

Soil Sampling: Five surface soil samples were collected from five sampling locations during the Phase I RI. Two additional samples were collected at depths of five and ten feet bgs. The analyses

**Soil Sampling:** Five surface soil samples were collected from five sampling locations during the Phase I RI. Two additional samples were collected at depths of five and ten feet bgs. The analyses detected the VOC toluene, petroleum hydrocarbons, the pesticides 4,4'-DDT, and methoxychlor and the herbicides 2,4,5-TP (Silvex) and MCPP, and metals. Of the COPCs detected, MCPP exceeded the corresponding residential PRG and lead exceeded the MCAS El Toro background calculation.

Seventeen subsurface soil samples (samples greater than ten feet bgs) were collected from four locations during the Phase I RI. Eight additional subsurface soil samples were collected during the Phase II RI soil borings and installation of lysimeters and monitoring wells (four locations). The following COPCs were detected in one or more of the subsurface soil samples: acetone, TRPH, TPH as motor oil, TPH as diesel, bis(2-ethylhexyl)phthalate, butylbenzylphthalate, butylbenzylphthalate, MCPP, and thallium. Of the COPCs, MCPP exceeded the U.S. EPA residential PRGs and thallium exceeded MCAS El Toro background concentrations. TPH as diesel was detected at concentrations as high as 21,800 mg/kg at sample location 05\_DGMW67. The maximum detected activities for gross alpha and gross beta were 17.6 and 21.3 picocuries per gram (pCi/g), respectively.

**Leachate:** Three lysimeters were installed, however, due to technical difficulties, no samples were collected.

**Groundwater:** Groundwater contamination was identified during the Phase I RI based on samples collected from four monitoring wells. During the Phase II RI, one additional monitoring well was installed. VOCs, SVOCs, metals, petroleum hydrocarbons and gross alpha and beta activity have been detected in groundwater samples. The VOCs methylene chloride, benzene, chlorobenzene, chloromethane, PCE, toluene, and TCE were detected at concentrations below U.S. EPA MCLs. TPH as motor oil was detected at 0.22 mg/L from one sample collected from monitoring well 05\_UGMW27. The SVOCs bis(2-ethylhexyl)phthalate, diethylphthalate, and di-n-butylphthalate were detected. The herbicide 2,4,5-trichlorophenoxyacetic acid (2,4,5-T) was detected, however, it was also detected at the same concentration in the blank sample. The metals manganese, nickel, and thallium were detected in one or more samples at concentrations above U.S. EPA MCLs. The maximum detected activities for gross alpha and gross beta were 24.9 and 53 picocuries per liter (pCi/L), respectively.

### **SPECIFIC COMMENTS:**

#### **1. Executive Summary, Conclusions, page ES-7**

There is a discrepancy in the reported groundwater gradients. For example, page ES-7 and the middle of page 3-16 contain the statement that the gradient ranges from 0.005 to 0.0025 feet per foot. However, on the bottom of page 3-16, the report states that the overall gradient through the center of Site 5 is 0.05 feet per foot. Please clarify the discrepancy in the reported groundwater gradient.

**2. Executive Summary, Conclusions, page ES-9**

The Data Quality Objectives decision "Are landfill gases migrating out of the landfill at ground surface or in the subsurface" should include a discussion of the perimeter soil gas sample analyses. Six of eight perimeter soil gas samples detected methane and one sample detected F-113 and 1,1-DCE. Two of the samples that detected methane are listed in Table 12 of Appendix F as ambient air samples. Is there a possibility that the perimeter soil gas samples are actually within the boundary of the landfill?

**3. Section 1.1.1, Guidance and Agreement, Figure 1-3**

Revise Figure 1-3 to add the Remedial Design step before Remedial Action. Also, add the Certification step after Operation and Maintenance.

Reference to Department of Health Services now being California Environmental Protection Agency (Cal/EPA) is not accurate. The correct reference is Department of Toxic Substances Control (DTSC). Both DTSC and California Regional Water Quality Control Board (RWQCB) are under the umbrella of CAL/EPA.

Rewrite the sentence regarding FAA signatory agencies as follows: "The BCT consists of representatives from SWDIV, U.S. EPA, and Cal/EPA (DTSC & RWQCB)."

**4. Section 1.1.2, Remedial Investigation Approach**

Reference to Cal/EPA should be changed to DTSC.

**5. Section 1.2.2.2, Recent Station Operations, page 1-17**

Revise the first sentence in the second paragraph to read as follows: Currently, hazardous materials/wastes are managed under appropriate Federal, State, local, and DoN requirements.

Also, reference to on-Station RCRA-Interim-Status Storage Facility is not accurate because the term Interim-Status refers to temporary authorization until a final permit is received from the regulatory agencies. Please note that MCAS El Toro was issued a RCRA Hazardous Waste Storage Permit in August 1993. DTSC terminated the permit on March 8, 1996 after we accepted the closure certification for Building 673-T3. MCAS El Toro is allowed to store hazardous waste at generator accumulation areas for periods less than ninety (90) days.

**6. Section 1.2.3.1, PHASE I REMEDIAL INVESTIGATION RESULTS, page 1-21**

Please clarify whether the metal concentrations were compared to residential or industrial PRGs.

**7. Section 1.2.3.1, PHASE I REMEDIAL INVESTIGATION RESULTS, page 1-23**

The fourth bulleted item under the subsection titled "Subsurface Soil," states that the concentration of TPH-diesel is less than 12.7 to 21.8 mg/kg. However, on page 4-51, the report states that "TPH as diesel was reported in one sample at concentrations of 17,800 mg/kg and 21,800 mg/kg in two samples collected at sample location 05\_DGMW67." Please explain this discrepancy.

**8. Section 4.4.1, Shallow Soil, page 4-42**

- a. In the first paragraph of page 4-42, the report states that the detected concentration of TRPH at sampling location 05\_UGS was 877 mg/kg. Sample location 05\_UGS is located outside the Phase II study area and represents an "upgradient" sampling site for soil and groundwater (05\_UGMW27) samples. The report should discuss the possible origin of the petroleum hydrocarbon. The detected TRPH may indicate a newly discovered release or that the boundary of Site 5 extends out to the sampling point.
- b. Also in the first paragraph is the statement, "TPH-gasoline was detected using a different analytical method in one of the eight samples ...." Please explain why a different analytical method was used for that one sample.

**9. Section 4.4.2, Subsurface Soil, page 4-51**

In the fourth paragraph on page 4-51 is the statement that TPH as diesel was reported at concentrations of 17,800 mg/kg and 21,800 mg/kg in two soil samples collected in 1992 from 05\_DGMW67 at a depth of 185 feet bgs. Figure 3-7 on page 3-22 shows that the groundwater level has been rising during the last three years. On page ES-7, the report mentions that the depth to groundwater is currently 160 to 170 feet bgs. This indicates that the soil samples collected at 185 feet bgs are now beneath the groundwater table. Table 4-19 and 4-20 indicate that groundwater samples were analyzed for TPH-motor oil. Did the 8015-M analysis detect diesel in the groundwater sample, or was the analysis speciated only for motor oil?

**10. Section 4.5.2, Total Petroleum Hydrocarbons, page 4-68**

- a. The report states that TPH as motor oil was detected in a groundwater sample at a concentration of .22 mg/L in monitoring well 05\_UGMW27, which is upgradient of Site 5. The report speculated that the source of the TPH in the groundwater may have originated in the agricultural area northeast of the site. Please elaborate on the type of activity that may have contributed to the petroleum hydrocarbon.

- b. As noted in comment number 9 above, soils that had detectable concentrations of diesel are now in the saturated zone. According to Table 4-20, all the groundwater samples, including 05\_DGMW67 were analyzed for TPH as motor oil. Since gasoline and diesel were detected in soil samples, were the groundwater samples also analyzed for gasoline and diesel?

**11. Section 4.5.7, Radionuclides, page 4-83**

The total gross alpha measured in four of the eleven downgradient groundwater samples collected during the RI exceeded the U.S. EPA MCL of 15 pCi/L. The maximum gross alpha activity reported was 27 pCi/L. The total gross alpha does not provide sufficient information for determining whether or not there is an actual release from the landfill. I suggest that you conduct isotopic analysis for Radium-226, Radium-228, etc. Compare the numbers to background to determine what is responsible for the higher reading. When you generate the information, please send an additional copy of the findings to:

Ms. Darice Bailey  
California Department of Health Services  
Environmental Management Branch  
601 North 7th Street, MS 396  
P.O. Box 942732  
Sacramento, California 94234-7320  
(916) 324-2209

**12. Section 5, FATE AND TRANSPORT**

The report fails to mention the potential for TPH to leach into the groundwater. As mentioned in comment number 9, subsurface soil samples (05\_DGMW67) that contained measurable concentrations of TPH are now in the saturated zone. TPH is leaching into the groundwater as been migrating downward and the groundwater table has been rising. The fate and transport of TPH leaching into the groundwater should be discussed.

**13. Section 6, HUMAN HEALTH RISK ASSESSMENT**

Please see attached memo from Mr. John Christopher regarding the human health risk assessment.

**DEPARTMENT OF TOXIC SUBSTANCES CONTROL**301 Capitol Mall, 3rd Floor  
Sacramento, CA 95814Mail: P. O. Box 806  
Sacramento, CA 95812-0806

Voice: (916) 327-2491

Fax: (916) 327-2509

**MEMORANDUM**

**TO:** Tayseer Mahmoud  
Office of Military Facilities (OMF)  
Southern California, Long Beach

**FROM:** John P. Christopher, Ph.D., D.A.B.T.  
Staff Toxicologist  
Office of Scientific Affairs (OSA)  
Human and Ecological Risk Section (HERS)

**DATE:** 12 June 1996

**SUBJECT:** MCAS El Toro: Draft Remedial Investigation Report for Site 5  
PCA: 14740 Site: 400055-45

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

**Background**

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

Site 5 is a landfill located near the southeast border of the base. During its years of operation, this landfill received industrial waste, including 55 gallon drums of solvents. Frequent burning of wastes occurred at Site 5. Future development for Site 3 is expected to be industrial in nature, but residential development could be located nearby.

**Document Reviewed**

We reviewed "Draft Phase II Remedial Investigation Report, Operable Unit 2C - Site 3, Marine Corps Air Station El Toro, California, CTO 0076/0135". This report, dated 12 April 1996, was prepared by Bechtel National, Inc., contractors to SWDIV. The request for OSA to review this report is dated 22 April 1996.

## Scope of Review

The document was reviewed for scientific content. Minor grammatical or typographical errors that do not affect the interpretation have not been noted. However, these should be corrected in any future version of the document. We assume that sampling of environmental media, analytical chemistry data, and quality assurance procedures have been examined by regional personnel. If inadequacies in this regard for the purposes of risk assessment were encountered, they are noted. Any future changes or additions to the document should be clearly identified.

## General Comments

The report is well organized and well presented. The risk assessment is quite good. The risk assessment can be made acceptable upon adequate response to the specific comments below.

## Specific Comments

- 1. Use of Upper Tolerance Limits for Selecting Chemicals of Potential Concern (COPC), Appendix N, Sec. N.2.1:** The Navy selected the 95% upper tolerance limit on the 95th percentile ( $UTL_{95,95}$ ) to represent the upper range of ambient concentrations of those metals found to be either normally or lognormally distributed. The maximum concentration detected ( $C_{MAX}$ ) was selected for the remaining metals. We do not accept the UTL as a comparator for the purposes of identifying COPC, because the method can be defeated with small sample sizes. With adequate sample populations, we favor the use of a simple estimate of a percentile for this purpose. We have expressed this to the Navy on numerous previous occasions.

At a meeting in San Francisco on 22-23 May 1996, the Navy presented convincing evidence that comparison of a simple estimate of a percentile to the highest detected concentrations at a site suffers from increasing probability of Type I error (*i.e.* wrongly deciding a metal is present above background concentrations) as the number of samples from the site and the number of comparisons against the percentile both increase. The Navy proposed that the "percentile test" be used in conjunction with other statistical tests of hypotheses, such as the Wilcoxon rank sum test, to permit formal estimates of Type I and Type II errors. We believe this approach is a good one and we recommend it for MCAS El Toro and other Navy bases.

2. **Background Concentrations of Metals, Appendix N:** We find it surprising that metals found at high frequencies of detection failed tests for either normality or lognormality (Table N-4). In particular, we are surprised at the results for As, Ca, Cd, Mn, Ni, and possibly Th. High frequencies of detection usually lead to easily recognizable distributions, unless multiple populations and/or contamination are present. Because the Navy did not provide plots of cumulative probability vs. concentration, we are unable to determine what these distributions look like. Please supply these plots for all 23 metals analyzed, as described on page L-2, to aid in performing the task in Figure N-1 labeled "Remove outliers or possibly contaminated data". For instance, the highest detected value of cadmium, 11.4 mg/kg is approximately ten times higher than we would expect to see for soils in Orange County. If this value does not belong with the background data set, exclusion of this bioaccumulative and very highly toxic metal as a COPC could be made in error.
3. **Table 4-14:** Toluene in shallow soil is reported at concentrations of 4 mg/kg, whereas in Table 4-13 this is given as 4 µ/kg. Please correct this discrepancy.
4. **Hexavalent Chromium, Sec. 4.4:** Were analyses for hexavalent chromium performed? If so, where are the results? If analyses were not performed, please explain. In the absence of such analyses, chromium must remain a COPC in both soil and groundwater and be considered to be 100% in the hexavalent state.
5. **Table 4-17:** Acetone is reported as being detected 3 times in 20 analyses. This is a 15% frequency of detection, but it is reported as 25%. Please correct this.
6. **Groundwater, Table 4-21:** Very few samples of groundwater were analyzed for Site 5. Just one sample was analyzed for some compounds, including benzene, a known human carcinogen. Benzene was detected in that single sample, but this is not an adequate amount of data to characterize potential exposures and risks due to benzene. How will the Navy rectify this problem?
7. **Ecological Risk Assessment:** We do not find any mention of risks to non-human receptors. At the very least, a screening assessment is required to determine if any ecologically important habitat or chemicals of potential ecological concern are present.
8. **Benzene in Groundwater, Table 6-1:** Benzene is reported as a detected analyte in groundwater in Table 4-21, but it does not appear as a chemical to be considered in Table 6-1. Please correct this error and include benzene as a COPC. This will affect estimates of risk for potential future off-site receptors.

9. **Exposure Point Concentrations, Appendix R, Tables:**  $C_{MAX}$  is selected as the exposure point concentration for nearly every organic COPC at Site 3. We do not fault the reasoning which led to these selections. However, USEPA guidance (RAGS Part A, 1989) recommends a measure of central tendency for the exposure point concentration as part of its definition of a reasonable maximum exposure. We believe the systematic overuse of  $C_{MAX}$  might be misleading to risk managers. While we do not have a ready overall solution for this problem, we recommend that the Navy identify for risk managers those instances where estimates of risks are driven by  $C_{MAX}$  and thus could be overestimated.
10. **Toxicity Criteria for Dermal Exposure, Sec. 6.3.6, p. 6-16, and Table PII-3:** "Dermal Reference Doses" in Table PII-3 should be altered to reflect the values for dermal absorption recommended in Table 2 of Appendix A of *Preliminary Endangerment Assessment Guidance Manual* (DTSC, 1994). This will affect the values shown for arsenic (3% dermal absorption), cadmium (0.1%), chlorinated dioxins and furans (3%), chlorinated insecticides (5%), polycyclic aromatic hydrocarbons (15%), and polychlorinated biphenyls (15%). Employing these recommended values will lead to changes in some of the estimated risks and hazards for all the receptor groups.
11. **Risk Characterization, Sec. 6.4, pp. 6-14 ff.:** This section is well written and complete. Figures 6-2 through 6-7 are especially good. Risks and hazards are quantified adequately for risk managers, except for benzene. Please number the tables in Appendix R and refer to key tables in Section 6.

Risks drivers in groundwater requires more complete coverage. If the total risk is on the order of  $1E-03$  and 90% is due to hexavalent chromium, then risks in excess of  $1E-04$  must be present due to other chemicals. Risk managers would benefit from discussion of such risks at greater length.

12. **Conclusions, Sec. 7:** Table 7-1 presents a very useful and informative summary of findings and recommendations in the framework of the data quality objectives which guided the investigation. Section 7.1.4 should be strengthened with comparisons to the "background" risks and hazards calculated in Appendix R. Section 7.1.4 should include discussion of total risks across pathways.

### **Conclusions and Recommendations**

The report is well organized and well presented. The risk assessment is quite good. It can be made acceptable upon incorporation of the following recommendations:

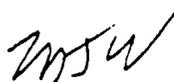
Tayseer Mahmoud

12 June 1996

Page 5

1. The Navy should address ecological risks at Site 5.
2. The Navy should present a complete characterization of ambient concentrations of metals, including cumulative frequency plots. The UTL should be discarded in favor of a simple estimate of a percentile, perhaps in conjunction with another statistical tool such as the Wilcoxon rank sum test.
3. Benzene should be addressed as a chemical of concern in groundwater.
4. When estimated risks are driven by the maximum concentrations detected instead of an estimate of central tendency, the uncertainty introduced should be clearly pointed out to risk managers in the risk characterization and conclusions.

Reviewer: Michael J. Wade, Ph.D., D.A.B.T.  
Senior Toxicologist, HERS



cc: Mr. J. Paull, USEPA Region IX



Cal/EPA

California  
Environmental  
Protection  
Agency

Integrated  
Waste  
Management  
Board

8800 Cal Center Dr.  
Sacramento CA 95826  
(916) 255-2200

JUN 03 1996



Pete Wilson  
Governor

James M. Strock  
Secretary for  
Environmental  
Protection

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

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

Dear Mr. Mahmoud:

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

Based on our review we are providing the following comments:

1. The text mentions an area of disturbed ground in the southwestern portion of the landfill and surface impoundments in the northwestern area. Neither of these features are indicated on the subsequent site drawings. Also, the text does not make a reference to any site exploration data relevant to these areas.

Depending on the location of these terrain features relative to the landfill, these areas may be potentially affected by closure activities on the landfill (grading, drainage system construction, final cover borrow areas, etc.). Thus, we recommend that these terrain features be shown on the site drawings. Also, any existing field exploration information relevant to these areas should be made available for review, if requested.

2. Section 2, Study Area Investigation lists surface geophysical survey and trenching as the field methods which were used to determine both the lateral and vertical extent of the landfilling area. However, it appears, as shown on the subsequent site drawings, that a portion of the landfill indicated as a "previously identified disposal trench" had been excluded from both the trenching and geophysical survey.



Recycled Paper

It is unclear if this excluded area and the area mentioned in the text as part of the Phase I Site Investigation area are equivalent. If this is the case, please unify the terminology or, otherwise, provide additional information.

Also, it appears that the previously conducted investigation lacks a sufficient vertical landfill extent investigation component. Thus, we strongly recommend that the mentioned area be included in the geophysical survey. If a more complete site investigation exists, a less rigorous survey may be conducted in order to validate the existing survey interpretative methods.

3. Section 2.5.2, Perimeter Gas Migration Samples makes a reference to 14 CCR, Section 17783.5, as a guide for conducting a subsurface gas survey. The section provides the survey depths (10, 25, and 40-feet).

It should be pointed out that the mentioned section 17783.5 provides regulatory guidelines for installing permanent landfill gas migration probes and specifies construction requirements. Neither the text nor the subsequent appendices provide a justification for the depths of the probes (needed are waste depth analyses for the specific probe locations) or construction details or construction quality for the well construction (design details should include screen lengths, materials used, etc.).

4. Based on the limited size of the landfill and information about negative impacts of the landfill on the environment (ground water contamination, gas migration, and soil contamination), an alternative addressing clean closure and/or waste consolidation should be considered for the purpose of the feasibility study. We have previously included a copy of Board's Advisory discussing the subject of clean closure which may be used as a guidance document in this matter. Please refer to our letter of April 30, 1996, regarding Unit 2B, Site 2.

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

Sincerely,



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



*Pete Wilson  
Governor*

*James M. Strock  
Secretary for  
Environmental  
Protection*

July 10, 1996

al/EPA

Department of  
Toxic Substances  
Control

45 West Broadway,  
Suite 425  
Long Beach, CA  
0802-4444

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

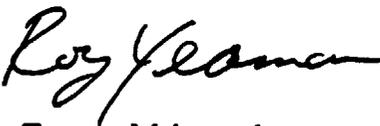
**COMMENTS ON DRAFT PHASE II REMEDIAL INVESTIGATION REPORT FOR THE ORIGINAL LANDFILL, SITE 3, OPERABLE UNIT 2C, AND THE COMMUNICATION STATION LANDFILL, SITE 5, OPERABLE UNIT 2C, MARINE CORPS AIR STATION (MCAS) EL TORO**

Dear Mr. Joyce:

This letter is to transmit the enclosed Regional Water Quality Control Board comments, which the Department of Toxic Substances Control stated it would do in its letters of June 18, 1996 and June 19, 1996. A few clarifications and modifications are needed as outlined in the enclosed comments. Please incorporate the agreed upon comments, where appropriate, and send us a response to comments along with a revised document.

Thank you for your cooperation. If you have any questions, please call me at (310) 590-4891.

Sincerely,

  
for Tayseer Mahmoud  
Remedial Project Manager  
Base Closure Unit  
Office of Military Facilities

Enclosure

cc: See Next Page



cc: Ms. Bonnie Arthur  
U. S. Environmental Protection Agency  
Region IX  
Hazardous Waste Management Division, H-9-2  
75 Hawthorne Street  
San Francisco, California 94105-3901

Mr. Lawrence Vitale  
Remedial Project Manager  
California Regional Water Quality Control Board  
Santa Ana Region  
3737 Main Street, Suite 500  
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 E. Edinger Avenue  
Santa Ana, California 92705

Ms. Sherrill Beard  
Engineering Geologist  
Department of Toxic Substances Control  
245 West Broadway, Suite 350  
Long Beach, California 90802

Lt. Hope Katcharian  
Director, Environmental Engineering Division (1AU)  
Marine Corps Air Station-El Toro  
P. O. Box 95001  
Santa Ana, California 92709-5001

JUL 03 1996

# Memorandum

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

**Date:** July 2, 1996

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

**Subject:** DRAFT REMEDIAL INVESTIGATION REPORTS, LANDFILL SITES 3, AND  
5, EL TORO MARINE CORPS AIR STATION

We have reviewed the subject reports dated April 12, 1996 and received by us on April 22, 1996. Based on the data in the reports, we have the following comments:

## SITE 3

1. A final closure cover must be provided (some hazardous wastes were disposed of at the site) and the stabilization of the banks of Auga Chinon Wash should be implemented as proposed to prevent waste exposure and erosion which may impact surface water and sediment. A closure and postclosure maintenance plan, for the cover in accordance with Chapter 15 requirements, shall be submitted for our approval.
2. Monitoring programs for groundwater, surface water, and landfill gas should be developed, approved and implemented to assess the changes in quality of these media.
3. Benzene was found in groundwater, downgradient of the landfill site, at concentrations exceeding the drinking water standards (MCLs). A potential source of the benzene is Tank Farm No. 5. but additional investigations should be conducted for confirmation. Once the source of the groundwater contamination is identified remedial measures should be taken to prevent further groundwater degradation.

In the future, if additional downgradient monitoring wells are to be installed for the landfill, it is recommended that the new wells be placed immediately downgradient of the landfill to minimize impacts from other pollutant sources.

*Mr. Joseph Joyce*  
*July 10, 1996*  
*Page 3*

cc: Mr. Tim Latas  
Bechtel National, Inc.  
401 West A street, Suite 1000  
San Diego, California 92101-7905

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

Dr. Dante Tedaldi  
Bechtel National, Inc.  
401 West A street, Suite 1000  
San Diego, California 92101- 7905

Dr. John Christopher, Ph.D., D.A.B.T.  
Office of Scientific Affairs  
Department of Toxic Substances Control  
P.O. Box 806  
Sacramento, California 95812-0806

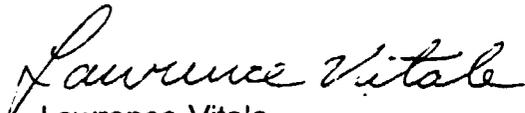
July 2, 1996

**SITE 5**

1. A final closure cover must be constructed (designated wastes were disposed of at the site) for the site to minimize water infiltration. A closure and postclosure maintenance plan must be submitted to us for approval.
2. Groundwater and gas monitoring programs should be implemented to assess the potential changes in quality of the groundwater and potential landfill gas generation.

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

Sincerely

  
Lawrence Vitale  
DoD Section



Pete Wilson  
Governor

James M. Strock  
Secretary for  
Environmental  
Protection

July 10, 1996

al/EPA

Department of  
Toxic Substances  
Control

45 West Broadway,  
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0802-4444

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

**COMMENTS ON DRAFT PHASE II REMEDIAL INVESTIGATION REPORT FOR THE ORIGINAL LANDFILL, SITE 3, OPERABLE UNIT 2C, AND THE COMMUNICATION STATION LANDFILL, SITE 5, OPERABLE UNIT 2C, MARINE CORPS AIR STATION (MCAS) EL TORO**

Dear Mr. Joyce:

This letter is to transmit the enclosed Regional Water Quality Control Board comments, which the Department of Toxic Substances Control stated it would do in its letters of June 18, 1996 and June 19, 1996. A few clarifications and modifications are needed as outlined in the enclosed comments. Please incorporate the agreed upon comments, where appropriate, and send us a response to comments along with a revised document.

Thank you for your cooperation. If you have any questions, please call me at (310) 590-4891.

Sincerely,

for Tayseer Mahmoud  
Remedial Project Manager  
Base Closure Unit  
Office of Military Facilities

Enclosure

cc: See Next Page



cc: Ms. Bonnie Arthur  
U. S. Environmental Protection Agency  
Region IX  
Hazardous Waste Management Division, H-9-2  
75 Hawthorne Street  
San Francisco, California 94105-3901

Mr. Lawrence Vitale  
Remedial Project Manager  
California Regional Water Quality Control Board  
Santa Ana Region  
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Riverside, California 92501-3339

Mr. Peter Janicki  
California Integrated Waste Management Board  
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Mr. Steven Sharp  
County of Orange  
Environmental Health Division  
Solid Waste Local Enforcement Agency  
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Ms. Sherrill Beard  
Engineering Geologist  
Department of Toxic Substances Control  
245 West Broadway, Suite 350  
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Lt. Hope Katcharian  
Director, Environmental Engineering Division (1AU)  
Marine Corps Air Station-El Toro  
P. O. Box 95001  
Santa Ana, California 92709-5001

JUL 03 1996

# Memorandum

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

**Date:** July 2, 1996

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

**Subject:** DRAFT REMEDIAL INVESTIGATION REPORTS, LANDFILL SITES 3, AND  
5, EL TORO MARINE CORPS AIR STATION

We have reviewed the subject reports dated April 12, 1996 and received by us on April 22, 1996. Based on the data in the reports, we have the following comments:

## SITE 3

1. A final closure cover must be provided (some hazardous wastes were disposed of at the site) and the stabilization of the banks of Auga Chinon Wash should be implemented as proposed to prevent waste exposure and erosion which may impact surface water and sediment. A closure and postclosure maintenance plan, for the cover in accordance with Chapter 15 requirements, shall be submitted for our approval.
2. Monitoring programs for groundwater, surface water, and landfill gas should be developed, approved and implemented to assess the changes in quality of these media.
3. Benzene was found in groundwater, downgradient of the landfill site, at concentrations exceeding the drinking water standards (MCLs). A potential source of the benzene is Tank Farm No. 5. but additional investigations should be conducted for confirmation. Once the source of the groundwater contamination is identified remedial measures should be taken to prevent further groundwater degradation.

In the future, if additional downgradient monitoring wells are to be installed for the landfill, it is recommended that the new wells be placed immediately downgradient of the landfill to minimize impacts from other pollutant sources.

cc: Mr. Tim Latas  
Bechtel National, Inc.  
401 West A street, Suite 1000  
San Diego, California 92101-7905

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

Mr. Bernie Lindsey  
Remedial Project Manager  
Naval Facilities Engineering Command  
Southwest Division  
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1220 Pacific Highway  
San Diego, California 92132-5187

Dr. Dante Tedaldi  
Bechtel National, Inc.  
401 West A street, Suite 1000  
San Diego, California 92101-7905

Dr. John Christopher, Ph.D., D.A.B.T.  
Office of Scientific Affairs  
Department of Toxic Substances Control  
P.O. Box 806  
Sacramento, California 95812-0806

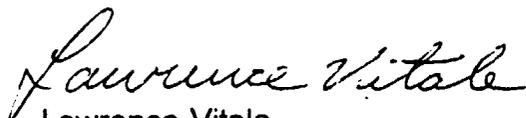
July 2, 1996

**SITE 5**

1. A final closure cover must be constructed (designated wastes were disposed of at the site) for the site to minimize water infiltration. A closure and postclosure maintenance plan must be submitted to us for approval.
2. Groundwater and gas monitoring programs should be implemented to assess the potential changes in quality of the groundwater and potential landfill gas generation.

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

Sincerely

  
Lawrence Vitale  
DoD Section



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

July 22, 1996

Joseph Joyce  
BRAC Environmental Coordinator  
Environment and Safety (Code 1AU)  
MCAS El Toro  
P.O. Box 95001  
Santa Ana, CA 92709-5001

Dear Mr. Joyce:

EPA has reviewed the "Draft Final Phase II Remedial Investigation [RI] Report, Operable Unit 2A - Site 24," for MCAS El Toro, received on June 20, 1996. The following comments have been separated into two categories-comments which require revision in the Final OU 2A RI Report and comments which may be addressed in the Draft and Draft Final OU 2A Feasibility Study (FS) Reports:

**Comments to be addressed in the Final OU 2A RI Report**

1) We appreciate the addition of the groundwater inorganics tables to Chapter 6. However, further discussion should be added in the Executive Summary and Chapter 6 clarifying that the OU 1 RI Report included the risk assessment for base and off-base inorganics, which appear to be naturally occurring. Specifically, the following pages should include greater detail: page ES-1, paragraph 4; page ES-6, paragraph 3; page 6-2, paragraph 1. Additionally, please provide a footnote for "Regulatory Level" in Table 4-16.

2) Section 4.2.4.2. Vertical Characterization, page 4-78, fourth paragraph; EPA does not agree with the bolded phrase in the following sentence: "Beneath the **fairly uniform** TCE concentrations in the upper 40 feet of the shallow groundwater unit are silt and clay beds." Please delete.

**Comments to be addressed in the Draft and Draft Final OU 2A FS Reports**

1) The BCT has discussed some further areas of delineation which can occur in the remedial design phase. Please carry forward the following three areas in the Draft and Draft Final OU 2A FS Reports: a) additional borings which assess the groundwater approximately 180 feet bgs, under Building 297, b)

Mr. Joseph Joyce  
July 22, 1995  
Page 2

horizontal delineation upgradient of the main VOC source area near Buildings 296, and c) additional monitoring wells upgradient of 18\_PS3.

2) The isoconcentration contours should be modified as discussed in BCT meetings. The text should continue to discuss concentrations below the regulatory level, the Maximum Contaminant Level (MCL); however, the plume maps should contour starting with the MCLs. Additionally, a few of the contours do not appear correct. Please recheck the monitoring well concentrations within each concentration contour. For example, monitoring location Well 18\_MCAS02- is included incorrectly in the 15-25 ppb concentration contour (Figure 4-13).

3) Section 4.2.3. Regional Groundwater Conditions, page 4-61; For the record, EPA does not agree that the data presented supports the hypotheses discussed with regard to Bee Canyon Wash. The text requires no revision, however, as these hypotheses are not presented as fully supportable.

4) Section 4.2.4.2; The new combined cross-sections are useful for the RI, however, for the Draft and Draft Final FS Reports, please increase the number of groundwater contour intervals on each cross-section. It is acceptable to use data from hydropunch data as well as groundwater monitoring data from different sampling events.

If you have any questions, I can be reached at 415/744-2368.

Sincerely,



Bonnie Arthur  
Remedial Project Manager  
Federal Facilities Cleanup Office

cc: Mr. Tayseer Mahmoud, DTSC  
Mr. Larry Vitale, RWQCB  
Mr. Dante Tedaldi, Bechtel  
Mr. Andy Piszkin, Southwest Div.

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# **TRANSFER AND CLEANUP OF CONTAMINATED PROPERTY IN THE PRIVATE SECTOR**

**Diane Smith  
Robert J. Gibson  
Snell & Wilmer  
Irvine, California**

# **Issues: Frequently Raised by Prospective Purchasers/Lessees**

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- ◆ Perceived Liability/Interference with Future Use
- ◆ Required Agency Action
- ◆ Responsibility for Cleanup Costs
- ◆ Time Required for Cleanup
- ◆ Cleanup Standards

**Issues:**  
**Frequently Raised by**  
**Prospective Purchasers/Lessees**  
**(Continued)**

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- ◆ Subsurface Conditions/Development of Parcel
- ◆ Intrusive or Alarming Site Cleanup/Space Requirements
- ◆ Third Party Suits

# “Financial” Issues

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- ◆ Initial Financing on Sale (OWNER?)
- ◆ Future Marketability
- ◆ Refinancing
- ◆ Potential Problems With Leasing
- ◆ Value
- ◆ Financial Disclosures (Contingent Liabilities)

# **“Financial” Issues**

## **(Continued)**

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- ◆ **Impact on Potential Business and Asset Sales of Owner**
- ◆ **Availability of Credit in General (Perception of Liability)**

# Health and Safety Concerns

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- ◆ As a Result of Existing Site Conditions
- ◆ During Remediation
- ◆ Employee Perceptions and Fears

# Solutions

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- ◆ Federal “Brownfields” Initiative: Help Communities Revitalize Where Development Complicated by Environmental Impacts, Perceived Risks and Liabilities
- ◆ Status, Current Philosophy, Regulatory Agenda (EPA)
- ◆ Recent Developments, U.S. EPA Region IX

# Solutions

## Recent Developments, U.S. EPA Region IX

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- ◆ Policy on Liability of Non-Contributing Parties Above Contaminated Groundwater
- ◆ No Further Action Letters
- ◆ De Minimis Settlements
- ◆ Agreements In Principle
- ◆ “Mixed Funding”

# **Solutions**

## **Recent Developments, U.S. EPA Region IX (Continued)**

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- ◆ Clarify Liability of Lenders (CERCLA and USTs)
- ◆ New Model Consent Agreement

# State Initiatives

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- ◆ Revised Approach To UST Cleanups (State Water Board)
- ◆ Containment Zones
- ◆ State Expedited Remedial Action Program (SB923) (1994)
- ◆ Private Deed Restrictions
- ◆ Risk Based Cleanups

# Responsible Party Initiatives

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- ◆ Special Testing Programs By Owners (i.e. Interior Air)
- ◆ Indemnities: Cleanup Costs/Tort Suits
- ◆ Site Access Agreements
- ◆ Continuing Monitoring
- ◆ Use of State Expedited Remedial Action Program
- ◆ Assistance to Owners Re: Testing, Lenders

# Responsible Party Initiatives

## (Continued)

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- ◆ Employee Information Programs
- ◆ Limitation on Times for On Site Work
- ◆ Early Risk Assessments
- ◆ Tenant Information Programs
- ◆ PRP “Support Groups”

# Other Possibilities and Options

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- ◆ Promptly Remove Sites From Lists Where Appropriate
- ◆ Minimize Affected Acreage and Parcels
- ◆ Standardize Remedies Where Possible
- ◆ Expedite Prospective Purchaser, Tenant and Lender Agreements
- ◆ Expedite De Minimis Settlements

# Other Possibilities and Options

## (Continued)

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- ◆ Limit Future Impacts on Property Where Issue of Potential Liability Must be Kept Open, i.e., No Wells Inside Buildings, No Open Ended, Uncontrolled Access
- ◆ Focus on Minimizing Uncertainties
- ◆ Implement Only Reasonable Deed Restrictions
- ◆ Meaningful Steps to Determine Risks Early, Reduce Effect of Perceived Risks on Surrounding Area

# **Other Possibilities and Options**

## **(Continued)**

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- ◆ **Set Definitive No Significant Risk Levels for Residual Contamination**

**COURSE CORRECTION:  
MAKING THE SHIFT FROM CONTAMINATED  
PROPERTY TO PRODUCTIVE USE**

Diane R. Smith  
Robert J. Gibson  
Snell & Wilmer, Irvine, California

Aircraft engaged in lengthy flights are frequently, if not almost always, off course, according to airline pilots. Constant course adjustments must be made to assure that the desired destination will be reached. This startling statement could also describe our environmental regulatory system. We have been slightly off course, and corrections are underway.

Governmental initiatives to facilitate the return of "environmentally challenged" properties to productive use is just one of such course corrections, and for once, it's a correction which benefits everyone--present and prospective property owners, and the general public. And it can be, and is being, accomplished without repeal of our environmental laws. Environmental issues haunt any real estate transaction involving contaminated property. Overcoming obstacles and making a transaction work well for the parties is one of the most rewarding activities in environmental law today.

*Pervasive Issues: Buyers and tenants--the more different they are, they more they are the same.*

With respect to prospective buyers or tenants, perceived, and perhaps actual, potential liability for cleanup or responding to enforcement actions by, or demands of, regulatory agencies must always be addressed. Employee concerns regarding potential exposures and employer's concerns about the possibility of additional worker's compensation or third party "toxic tort" claims pose additional issues, as do the possibilities of business interruption or site disruption due to remediation activities. Tenants or potential purchasers may be apprehensive about when and how certain on site activities are conducted, and employees' perceptions of risks at the property, such as the presence of remediation workers requiring personal protective equipment such as respirators or protective clothing. Possible purchasers or tenants may worry that required

remediation will interfere with intended use, or result in adverse public relations. Potential buyers may be wary of the potential impact of "stigma" on value, future sales or financing. The scope of indemnities to buyers and potential tenants is always a subject for negotiation.

### *Sellers and landlords*

Similarly, sellers and landlords focus on the effect of the transaction on their business interests. Will they have continuing and future remediation, enforcement, or toxic tort exposure after the sale or lease? What responsibility will the purchaser or tenant assume? How will the purchaser or tenant's performance be assured? What future site impacts by purchasers or tenants may impact the landlord's or the owner's liability, or make remediation more difficult or expensive? Who will have control over remediation methods and timing, and what cleanup standards will be utilized? What requirements does the buyer or prospective tenant have with respect to indemnity?

*It's possible to address all concerns and get deals done.*

*Addressing all of the concerns of buyers, sellers and tenants is not only possible, its happening. We not only believe it, we've done it.*

### *Innovative programs: State and federal*

There are new and useful approaches, and new programs and policies at both the state and federal level which have proven to be of real assistance in connection with recent property transactions, and which hold great promise as tools for making contaminated property less of a problem and more of an asset.

Many very useful initiatives exist at the state level, which, in many instances, prove to be of more value than the federal programs, which are of less sweeping applicability. The California Expedited Remedial Action legislation, which was passed in 1994, is a good example of a new program which offers substantial benefits to purchasers and sellers with respect to both cost savings and liability protection. This recently implemented legislation is designed to coordinate agency requirements, speed up remediation, provide a site specific cleanup focus, and expedite projects while providing significant incentives in terms of liability protection for responsible parties as well as future purchasers of contaminated real estate. Use of this program in connection with a local and substantially impacted parcel was a real plus in connection with a recent transaction.

The State Water Resource Control Board's proposed Non-Attainment Zone Policy should improve the logical and technical underpinnings of groundwater cleanups and reduce expenses because it will allow "non-attainment" of certain water quality standards where "attainment" is not reasonable, feasible, or, frankly, sensible. Recent policy statements by the Water Board

regarding changes in direction with respect to both the necessity and nature of cleaning up contamination which results from leaking underground petroleum storage tanks cannot help but reduce the cost of managing some sites, as no cleanup, but rather only monitoring, will be required. Though both the non-attainment and petroleum site policies are very new, we are currently handling a number of matters which will likely be very favorably affected by these policies and by the state's new attitude towards the necessity and extent of groundwater cleanups. The State of California's new policy on prospective purchaser agreements and the voluntary cleanup program are also good examples of what government can do to make things easier and more sensible.

At the federal level, EPA's revised model consent agreement addresses some of the criticism of users of the former model agreement. The revised model agreement should make settlements less controversial and tedious to negotiate, and therefore easier and less costly to achieve. This should expedite cleanups, and, therefore, resolution of site conditions. Cleanup levels will be tempered by the expected future uses of property as a result of EPA's recent directive regarding future land use considerations. "Comfort" letters indicating EPA's decision not to pursue certain parties with respect to a particular environmental issue, as well as prospective purchaser agreements resolving liability for buyers of contaminated property, will provide additional layers of comfort to parties involved in sites with substantial federal government involvement. Expedited *de minimis* settlements with current landowners who have not contributed to the environmental problem at their properties should resolve some potential liability issues, and agreements in principle regarding EPA's intent with respect to particular transactions will likely be catalysts to further consideration of some projects. Statements of policy regarding such matters as property located over contaminated groundwater will provide clarifications for some property owners.

***Responsible parties are also acting more "responsibly"--that is, more proactively:***

Attitudes of responsible parties have also changed significantly, in many cases, particularly where the responsible party has substantial experience in handling environmental issues. Our largest clients seek to reduce their transaction costs by taking appropriate responsibility and reaching settlements with other interested parties so as to avoid the costs of litigation. For example, we have been able to expeditiously negotiate settlements involving multiple parties, negotiate indemnities to lenders so as to facilitate refinancing, obtain indemnities from, or provide indemnities to tenants and, at times, owners, with respect to conditions which would otherwise have created problems in transactions, and reached agreements for access, cleanups and continued monitoring--both when representing responsible parties and when representing those seeking such assurances or arrangements from responsible parties. There has been a marked improvement in the willingness of all interested parties to seek cost effective solutions and work together to reach agreements which meet goals and resolve issues without litigation. This is good and gratifying work.

*More needs to be done to provide more tools and more certainty:*

Further changes would provide more relief to the regulated community with no real downside in terms of environmental quality. Regulatory agencies should seek to:

- Minimize affected acreage and parcels where environmental conditions require remediation. Why characterize an entire area based on a few troublesome parcels?
- Standardize remedies and approaches where possible for practicality, and to provide predictability. We do not need to reinvent the wheel on every case.
- Limit future impacts on property where issues of potential liability must be kept open. For example, do not demand wells inside buildings, and do not require open ended, uncontrolled access, especially where the site is well understood.
- Focus on minimizing uncertainties so that transactions do not fall apart because parties cannot get sufficient assurance of the status of a particular parcel, or a firm grip on the nature or potential cost of future actions which may be required.
- Implement only reasonable deed restrictions, for reasonable times, using non prejudicial, reasonable language.
- Take meaningful steps to determine health and safety risks at early stages of site assessment, to reduce the effect of perceived risks on surrounding areas and populations, where possible.
- Set definitive "no significant risk levels" for residual contamination to provide cleanup guidance and assurance regarding health and safety concerns.
- Approve, without lengthy delays and expensive revisions, reasonable, practical solutions and agreements proposed by responsible parties. Focus on substance and cleanup rather than formalities and paperwork. Utilize mediation to reach settlements.
- Expand use of mixed funding at the federal level so that the "Superfund" pays part of the cleanup costs.
- Use peer review panels for cleanup strategies and to set cleanup levels, to promote better solutions, speed up the review process, and involve the community in deciding what needs to occur at a particular parcel.

*In the future:*

We expect to see even more changes and options as environmental issues are addressed by a regulatory system, which, finally, seems to be trying to "do the right thing" and make decisions which are more logical and cost effective and, frankly, politically viable. Hopefully, this change in attitude and direction is not too late to save some of our environmental legislation which has been under attack recently as unworkable, impractical, ill conceived and ineffective. The environmental laws have resulted in substantial improvements in air and water quality, and produced a system of waste management which, for all its faults, is likely to prevent, or at least alleviate problems in the future.

This is not the time to take revenge on a system which, though imperfect, is necessary, and has, for all its problems, reversed a trend which we all knew needed reversing--the destruction of our environment. Politicians would do well to remember the Chinese proverb regarding revenge: "Before seeking revenge, dig two graves."

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Diane Smith heads Snell & Wilmer's California environmental law practice from the firm's Irvine office. She may be reached at (714) 253-2720.

# **REAL ESTATE TRANSACTIONS DESPITE ENVIRONMENTAL ISSUES**

## **Real Estate Markets: Some Background**

Where they've been, where they're going.

Why environmental issues are getting attention from real estate owners/buyers.

## **Some Success Stories**

The Leasing Tour.

The Office Building that Leaked (Tenants).

Contaminated Property Wins Popularity Contest!

An Explosive Development.

## **A Look to the Future**

John P. Monahan  
Vice President  
ARES Realty Capital

July 31, 1996

# **MAKING REAL ESTATE TRANSACTIONS HAPPEN DESPITE ENVIRONMENTAL ISSUES: A STRATEGIC APPROACH**

by John P. Monahan

Given the calamitous drop in commercial real estate values at the end of the 1980's when transaction volumes were at all time highs, it's probably fair to say that risk in real estate has not been well understood. And among the least understood are properties impacted by environmental issues. These properties have, added to the shopping list of "usual" real estate risks (market, tenant credit, property damage, liability, lack of liquidity, etc.), risks that governmental authorities, tenants, buyers, adjacent landowners or residents may sue for clean-up or for alleged impacts on health or ability to conduct business. No wonder, then, that owners of such properties may no longer view them as assets, but only liabilities.

With many commercial properties, it doesn't have to be that way. The key is to bring real estate expertise together with environmental expertise in a comprehensive, strategic approach. Our firm's experience with environmentally troubled properties tells us that a such an approach can turn a non-performing liability into a performing asset. Generally, this type of approach involves four major steps: (1) Understanding the real estate; (2) Understanding the environmental issues; (3) Developing the investigation/remediation, lease-up, and/or sale strategy based on the above, in concert with the owner's objectives; and (4) Managing the property pro-actively and systematically so as to minimize potential liability during the remediation/lease-up/disposition period.

## **Understanding the Real Estate**

The key factor determining the success of the investment strategy is a thorough understanding of real estate markets in the area surrounding the property. A property with a bad location and poorly designed improvements is not going to turn into a great investment after clean-up standards are negotiated and environmental remediation is completed. The property may need to be renovated and re-positioned within its market, or perhaps the use may need to change. Maybe nothing needs to be done. In order to be able to reach such a conclusion, however, the property owner must analyze the market carefully, and understand trends in absorption and construction, the economic factors behind those trends, and the strengths and weaknesses of competitive properties. Most importantly, the owner must

understand the key issues and deal points for tenants and buyers and be ready to address them either proactively or immediately in response to a question, as appropriate.

## **Understanding the Environmental Issues**

In addition to a market strategy, the property owner needs legal and technical expertise to fully develop the strategic approach. The bad news, of course, is that this costs money. The good news is that, with the right team of real estate professional, environmental attorney and consultant, costs can be strictly controlled. Today, the environmental industry has grown to be very large, sophisticated and competitive. As a result, the best and most experienced professionals have found ways to deliver excellent service at the lowest possible cost. And, if the owner's team is properly managed, and focused on the strategy or strategies most likely to bring success, unnecessary technical work and billable hours can be avoided, saving the property owner additional dollars.

## **Developing the Strategy**

Often, the real estate and environmental industries have not worked closely enough together to resolve property contamination issues. The relationships tended to work as attorney-client, consultant-client, property manager-client and real estate broker-client and it was rare that one firm knew very much about what the others were doing. This was a recipe for unnecessary work, unfocused efforts and limited success. The most successful approach involves a team which understands the owner's goals, communicates among the members, and focuses on the strategy developed to achieve success as quickly as possible.

## **Some Key Decision Points**

Extent of Investigation- It is imperative here to involve all members of the team. The property manager and broker can identify the issues of concern to tenants or buyers, the attorney deals with compliance and transactional issues and the environmental consultant knows the state of the art, the reliability of the results and the cost of the work. If each team member understands the issues of the others, benefits to the leasing/sales effort can be weighed against the investigation cost, and unnecessary work is not performed. For example, if a prospective tenant's concern is indoor air quality, and there is no direct exposure to soil or groundwater, it may well not be necessary to perform other tests.

Interpretation of Results- There are three kinds of environmental reports: those that are worthless, those that are less-than-worthless, and those that are worth the money spent on them. Worthless reports, those that contain unreliable or incomplete information, happily are much less common than 10 years ago due to the increasing sophistication of the environmental industry. Owners still need to be careful to select a quality consultant, however. Less-than-worthless reports, those that raise unnecessary alarms or present complex information without interpreting it, are still alive and well in the industry. It is extremely detrimental to tell a prospective tenant or buyer that the indoor air has a concentration of .00001 mg/cubic meter of Toxic Substance X if there's nothing to tell them whether the health risk is significant. Owners should consult carefully with the consultant/sales/leasing team as test results are produced. Generally, the interpretation portion of the report is money well spent.

Understanding the Risk- Often, after the environmental report is completed, even if the interpretative part of the report paints a positive picture, the prospective buyer/tenant may indicate resistance to the transaction, still perceiving that there is unacceptable risk involved, whether health risk, loss of business or clean-up liability. It is imperative that the owner anticipate these objections and be prepared to respond quickly and knowledgably. There are two kinds of risk: perceived and actual. With respect to perceived risk, is often possible to allay a potential tenant or buyer's concern by putting the technical results in context. For example, a tenant concerned about the health effects of electric and magnetic fields (EMF) from nearby transmission lines would probably be less concerned if it was the case that her employees' exposure from the transmission lines was lower than that from the typical desktop PC monitor, and that was explained to her. Similarly, a potential buyer/tenant worried about exposure to lawsuits from employees, the government and third parties may benefit from a legal update.

Despite best efforts to clarify issues and allay fears with respect to perceived risk, however, there often are actual risks that cannot be explained away. With the exception of certain buyers who specialize in buying contaminated properties and taking on the liabilities, the typical buyer or tenant is looking for a "deep pocket" to assume the risks. The first place for the seller/landlord to look is to the responsible parties (RP's) to provide an indemnification of the buyer or tenant, the value of which depends on the financial strength of the RP. If you can't find a deep pocket, it may be possible to create one with environmental risk insurance, which is much more widely available than in the past.

Other ways to reduce risk for the buyer or tenant are to negotiate with government agencies, parcelize the property, or restrict the land use. It is possible to negotiate Prospective Purchaser Agreements with clean-up agencies, whereby they agree not to sue the buyer for contamination introduced prior to purchase. It is also possible to get a comfort letter from an agency, indicating to a prospect that the agency does not currently believe that remediation is necessary at a site. Sometimes it is possible to parcelize a property into contaminated and non-contaminated portions and achieve market prices and rents on the non-contaminated portion. In one notable example, a property was vertically subdivided and the contaminated below-grade parcel was deeded to the responsible party, while the property owner retained a “clean” above-grade parcel. In the real estate business, it is thought that the greatest value can be achieved with the “highest and best use”. However, when environmental issues are introduced, sometimes the “next highest and best” may be the preferred use. If it is possible to negotiate a reduced cleanup level with an agency in return for restricting the land use to something less intense, the reduction in remediation costs and environmental liability may well exceed the reduced return from the real estate.

## **Conclusion**

All of the factors discussed above should be considered when making the property owner’s most important decision: whether to hold (vacant or leased), hold and remediate (vacant or leased), hold and develop, or sell. It is also essential to have a property management team that understands environmental issues and ensures that the owner is not exposed to greater liability through the decision and holding period. The good news is that sale, lease and financing transactions are occurring on contaminated properties at a pace that could not have been imagined a few years ago. The real estate and environmental industries are beginning to understand each other, and have gotten much more sophisticated in their ability to reduce risk where possible and quantify the risk that can’t be eliminated. This is a trend that should bring a great deal of success to owners and operators of real estate.

## **BIOGRAPHY**

### **JOHN P. MONAHAN**

John Monahan is Vice President of ARES Realty Capital, Inc., a full-service real estate organization providing investment, asset management, property management, leasing, construction and consulting services to real estate owners, developers and investors. ARES manages in excess of 25 million square feet for The Mutual Life Insurance Company of New York (MONY), its parent company, and other real estate clients. John joined Mutual of New York in 1983 after graduating from Harvard University with a Master's degree in City and Regional Planning, and has worked in the firm's real estate investment offices from coast to coast. John joined ARES when the company was created, and has hands-on experience in all areas of the firm's work. John is a licensed California Real Estate Broker.

ARES personnel have extensive experience handling commercial properties impacted by environmental conditions, with a proven track record of success. ARES draws from a wide variety of disciplines to implement the most effective solutions for its clients. The ARES team works together to manage properties and portfolios in a pro-active manner to minimize losses and liability, and substantially increase the financial performance of the client's real estate. Recent environmental assignments have ranged from development feasibility consulting on unimproved land, to management, leasing and sales assignments on substantially impacted commercial property.