

The Environmental Cleanup of Marine Corps Air Station El Toro

NOVEMBER 1991



BASE DESCRIPTION

MCAS El Toro (or Station) was commissioned in March 1943 as a Marine Corps pilots' fleet operation training facility. The Station consists of 4,741 acres and includes runways, aircraft maintenance and training facilities, housing, shopping facilities, and other support facilities. In 1950, MCAS El Toro was selected for development as a master jet air station and permanent center for Marine aviation on the west coast to support the operations and combat readiness of Pacific Fleet Marine Forces. Today, MCAS El Toro continues to provide materials and support for aviation activities of the U.S. Marine Corps (USMC). The Station provides housing for 5,250 Marines and 2,000 dependents. Approximately 2,800 military personnel and 1,900 civilians live off-Station but work at MCAS El Toro. The closest residential areas are the cities of Lake Forest, Irvine, and Laguna Hills.

MCAS El Toro is located in a semiurban agricultural area in Southern California. The Station is situated about 8 miles southeast of the City of Santa Ana and 12 miles northeast of the City of Laguna Beach. Most

This fact sheet describes the investigation of the possible hazardous waste contamination at Marine Corps Air Station (MCAS) El Toro under the Department of Defense's Installation Restoration Program. This is the first in a series of fact sheets that will be issued periodically throughout the investigative process. Future fact sheets will update you on site conditions, provide information on the proposed cleanup alternatives, and inform you of upcoming public involvement activities.

of the land northwest of MCAS El Toro is used to grow oranges and other agricultural crops. Land to the south, and northeast of the Station has been developed as commercial, light industrial, and residential. Figure 1 on page 2 is a site location map of MCAS El Toro.

The Station has been used for aviation activities for almost 50 years. Activities at the base have generated waste oils, paint residues, hydraulic fluid, used batteries and other wastes. In the past, there were few environmental rules and regulations and disposal technologies were limited. During those times, some wastes produced at the Station were disposed on the Station. Recent recognition that these waste products may be harmful to people and the environment has resulted in new laws and regulations governing their disposal.

PREVIOUS INVESTIGATIONS

From 1985 to 1986, an investigation was conducted under the Navy Assessment and Control of Installation Pollution program to locate sites potentially contaminated with hazardous materials from past operations. Seventeen sites were identified based on the results of record searches and employee interviews. While this study was being conducted, the Orange County Water District (OCWD) discovered volatile organic compounds (VOCs) in groundwater from an agricultural well about 3,000 feet west of MCAS El Toro. The VOCs are solvents that readily evaporate at room temperature and are commonly used in dry cleaning, metal plating, and metal degreasing. The OCWD launched its own investigation to determine the source and extent of VOC contamination.

In 1987, the California Regional Water Quality Control Board (RWQCB), Santa Ana Region required the Navy to conduct a Perimeter Study to investigate the possibility of VOC contamination along the southwestern boundary of MCAS El Toro. Results from the Perimeter Study indicated that VOCs were present in the shallow groundwater near the Station boundary. As a consequence of the findings of the Perimeter Study, an interim groundwater pump and treatment system was installed at the southwestern boundary of the Station. In

June 1989, the treatment system began operation. Contaminated groundwater is sent to an on-site Granular Activated Carbon unit where the VOCs are removed. Treated groundwater from the system is used to irrigate the Station's golf course.

In June 1988, the U.S. Environmental Protection Agency (EPA) recommended that MCAS El Toro be placed on the National Priorities List (NPL). The NPL is a list of the top-priority sites in the country contaminated with hazardous substances and eligible for investigation and cleanup under the Superfund program. MCAS El Toro was recommended for placement on the NPL due to the presence of two VOCs, trichloroethylene (TCE) and tetrachloroethylene (PCE), in groundwater at the Station boundary and in agricultural wells to the west of the Station. **Drinking water supply wells have not been affected by VOCs.** The TCE and PCE, known cancer-causing compounds, are a concern when found in drinking water supplies because of the potential for frequent exposure through drinking and bathing. MCAS El Toro was included on the NPL on February 15, 1990. In September 1990, the Navy signed a Federal Facilities Agreement (FFA) with the State of California Department of Health Services and EPA. The FFA includes specific schedules and milestones in the clean-up process, as

well as provides a plan for long-term maintenance and operation of the clean-up procedures.

Following the completion of studies conducted in the late 1980s, 22 sites were identified as posing a potential threat to human health or the environment. Currently, two of the 22 sites have undergone sampling and analysis programs. Sampling and analysis of soil, sediment, surface water and groundwater from the remaining 20 sites will begin in December 1991. Figure 2 is a site map showing the approximate locations of the 22 sites.

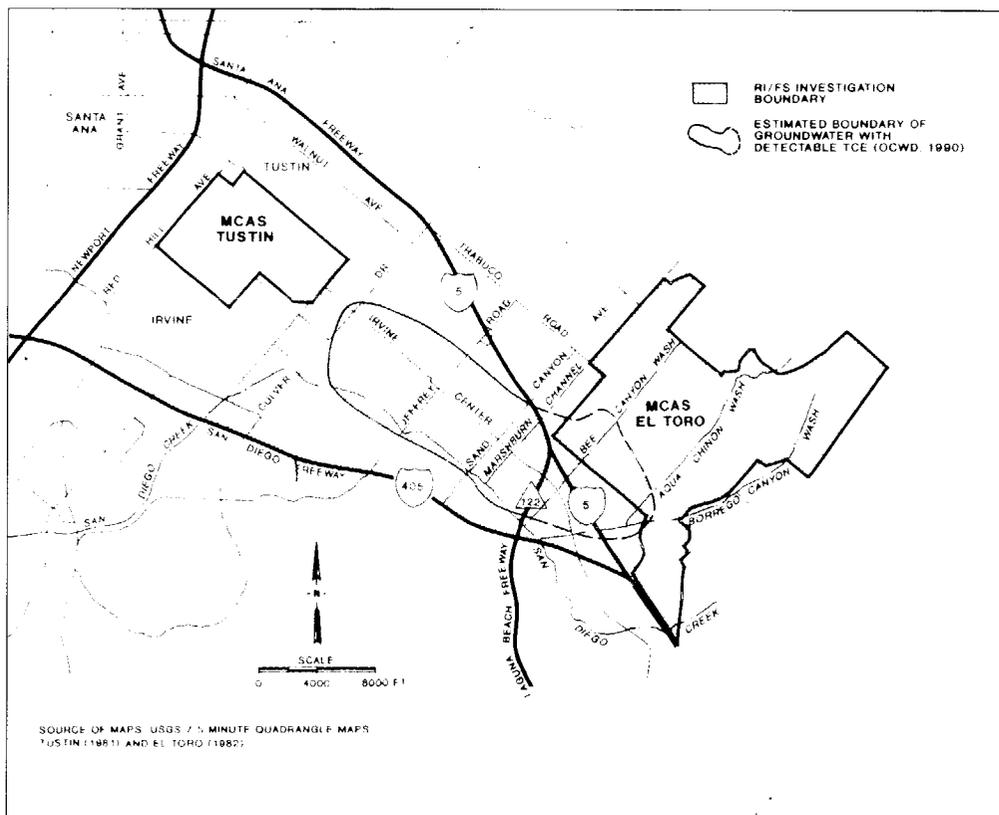


Figure 1: MCAS El Toro Site Location and Surrounding Areas

EL TORO RI/FS - PHASES I and II

MCAS El Toro Remedial Investigation/Feasibility Study (RI/FS) has been divided into two phases, Phase I and Phase II. The primary objectives of Phase I are to locate the source of VOCs observed in the groundwater west of MCAS El Toro, to identify the nature and extent of contamination, if present, at the 22 sites on the Station, and to evaluate whether contaminants are moving off of the Station from each of the sites. Phase I includes surface soil and sediment sampling; surface water sampling; and the installation, testing, and sampling of groundwater monitoring wells. Over 100 monitoring wells will be installed during Phase I. Field work for Phase I RI/FS will begin in December 1991 and is planned for completion in August 1992.

Based on the results of the Phase I investigation, additional soil, surface water, and groundwater samples will be taken and additional monitoring wells will be installed during Phase II to further define the extent of contamination, if present, at each site and to provide additional data needed to clean up the sites.

The 22 MCAS El Toro sites identified as requiring further investigation and cleanup have been grouped into three operable units (OUs). An OU is a clean-up activity that focuses on a specific aspect of the overall hazardous waste problem and contributes to permanent site cleanup. Operable Unit-1 (Site 18) consists of the Regional Groundwater VOC Investigation. Operable Unit-2 includes Sites 2, 3, 5, 10, and 17 which are suspected VOC source areas on the

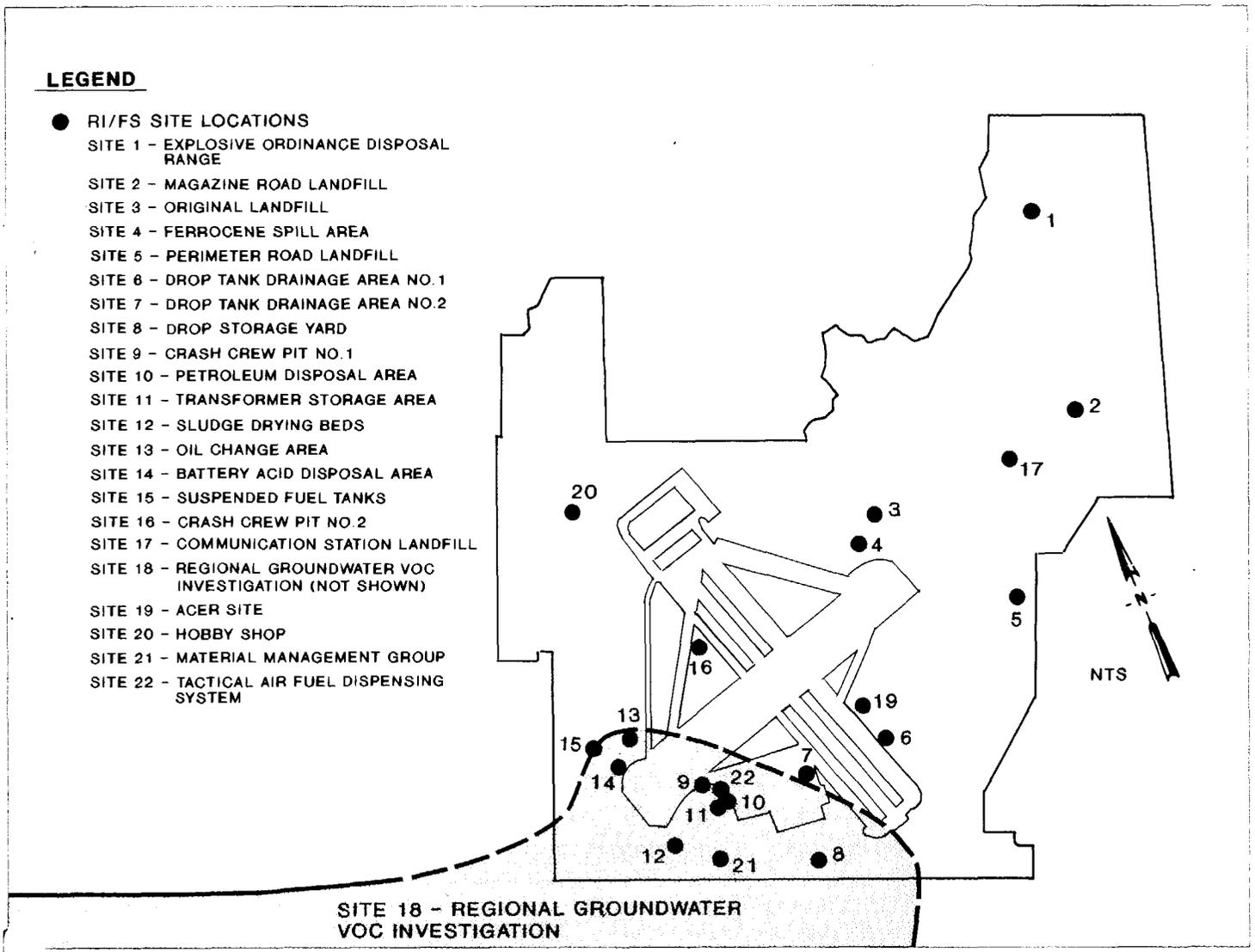


Figure 2: RI/FS Sites

Station. Operable Unit-3 consists of the remaining 16 sites not addressed in OU-1 and OU-2. The OU-3 sites generally address the VOC groundwater contamination as a secondary issue. The primary concerns at these sites involve soil and sediment contamination.

An Operable Unit-4 has been designated for sites identified for future inclusion in the RI/FS by a Resource Conservation and Recovery Act (RCRA) Facility Assessment currently in progress for MCAS El Toro. Abandoned sewer lines for the former sewage treatment plant, sites previously identified by RWQCB, waste underground storage tanks, and other solid waste management units identified through records review and an inspection of the Station will be evaluated in the RCRA Facility Assessment. Appropriate sites will be included in the RI/FS Program as OU-4.

AGENCIES CONSULTED IN SITE STUDY AND CLEANUP PROCESS

- U.S. Environmental Protection Agency
- California Department of Health Services
- California Regional Water Quality Control Board, Santa Ana Region
- South Coast Air Quality Management District
- Orange County Health Care Agency, Environmental Health Division
- Orange County Water District
- Irvine Ranch Water District
- City of Irvine
- City of Lake Forest
- Natural Resources Trustees
 - Department of Defense
 - Department of Fish and Wildlife
 - Department of Commerce

THE COMMUNITY RELATIONS PROGRAM

The goals of the Community Relations Program are to inform the community about the environmental cleanup and to provide the community with opportunities to voice its concerns. To accomplish these goals, community meetings and public comment periods will be held at critical decision points in the process. During public comment periods, concerns voiced by the community will be considered and responded to in the Responsiveness Summary. Public notices about upcoming public comment periods and meetings will be published in the *Orange County Register*, *Los Angeles Times - Orange County Edition*, and the Station newspaper, *The Flight Jacket*. Fact sheets will also be issued periodically about the progress of clean-up activities.

A Technical Review Committee (TRC) has been established to review and comment on proposed actions for cleaning up MCAS El Toro. The TRC includes representatives from the USMC, local and base communities, the City of Irvine, and local, state and federal regulatory agencies. The TRC will meet as needed to discuss project progress, review reports, and comment on investigation and clean-up activities. After each TRC meeting, summaries of the meeting minutes will be mailed to those individuals on the mailing list and to the designated information repository.

TECHNICAL ASSISTANCE GRANTS (TAGs)

Technical Assistance Grants (TAGs) are available for all federal Superfund and NPL sites. The TAG Program provides funds for community groups to hire a technical advisor to assist in interpreting technical information. Under this program, one eligible community group at each Superfund site may obtain a grant of up to \$50,000.

To be eligible, a group must be legally incorporated, meet a 20 percent matching funds requirement, and prepare a plan for how the technical assistance grant will be used. For more information on the TAG Program, contact:

Andy Bain, Community Relations Coordinator

U.S. Environmental Protection Agency
75 Hawthorne Street (H-1-1)
San Francisco, CA 94105
1/800/231-3075.

HOW THE INSTALLATION RESTORATION PROGRAM WORKS

The Marine Corps is cleaning up MCAS El Toro through the Navy's Installation Restoration (IR) Program. The IR Program is the Navy's equivalent to the process used by EPA, commonly known as the "Superfund" program. Each Step of the IR Program is carefully coordinated with federal, state, and local agencies. In addition, the Marine Corps will work closely with the public through the Community Relations Program described on page four.

Goals

The goals of the IR Program include identifying, investigating, and cleaning up contamination from hazardous substances. The IR Program addresses cleanup of contamination resulting from past, not current, waste management and disposal operations. The Marine Corps has taken steps to ensure that its existing hazardous materials operations are in compliance with all applicable federal and state environmental regulations.

The Process

The IR Program begins with a Preliminary Assessment/Site Inspection (PA/SI) of individual sites (within the confines of an overall site) that have been identified as potentially hazardous to the public's health and the environment. This step includes collecting and reviewing all available information and may include off-site surveys to evaluate the source and nature of hazardous substances present. Site inspections routinely include collecting surface water, groundwater, and soil samples to determine if contamination is present.

Once a site or sites have been identified, the Remedial Investigation (RI) is started. This investigation involves taking numerous soil and water samples and drilling monitoring wells. Each sample of soil and water is carefully packaged, placed in ice, and rushed to a laboratory certified by the State of

California and EPA. Each sample is then subjected to a number of different tests to determine if contaminants are present. All field work is performed according to sampling plans approved by the regulatory agencies.

The field work produces thousands of individual "datapoints." These datapoints are stored in a computer data base that is used to develop a picture of the site and the extent of contamination. This conceptual picture and the data are then evaluated in the Feasibility Study (FS). The FS looks at the possible clean-up alternatives for each site, and evaluates the suitability of these alternatives. Basically, it helps the investigators determine the most effective way to clean up each individual site. Results from the FS are used to develop the proposed clean-up plan; i.e., soil removal, groundwater treatment, etc. After formal public review, during which the public can give oral and written comments that will be responded to in a document called a Responsiveness Summary, a clean-up plan is selected in the Record of Decision (ROD). Work plans are then developed and the clean-up plan is implemented. The final step in the process is operations and maintenance, which involves continual testing and monitoring to ensure that the cleanup was successful.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, requires that a RI/FS begin within 6 months of inclusion of the NPL. After completion of the RI/FS, the law requires that the Marine Corps enter into an inter-agency agreement (IAG) with EPA to implement remedial design and remedial action. In order to expedite the cumbersome CERCLA process and enhance its working relationship with EPA and the State of California, the USMC entered into a Federal

Facility Agreement (FFA) earlier in the process than is required by law. The FFA was signed in October 1990. This agreement will later fulfill the IAG requirement between the USMC, EPA, and the State of California, at the commencement of the RI/FS.

THE INSTALLATION RESTORATION (IR) PROGRAM

Each of the following steps will be conducted for each operable unit at MCAS El Toro.

PRELIMINARY ASSESSMENT/ SITE INSPECTION

Discovery and Verification of
Potential Hazardous Waste Site



STUDY PLAN

Prepare Plan to Sample,
Investigate, and Analyze the Sites



REMEDIAL INVESTIGATION (RI)/ FEASIBILITY STUDIES (FS)

Conduct Site Studies (RI)
and Develop Possible
Clean-Up Solution(s) (FS)



PROPOSED CLEAN-UP PLAN

Propose Clean-Up Solution(s)
for Sites (subject to 30-day
public comment period)



RECORD OF DECISION (ROD)

Select Clean-Up Solution(s)
for Sites



REMEDIAL ACTION (RA)

Construct the Clean-Up
Solution(s)



OPERATION AND MAINTENANCE

Operate and Maintain the
Cleanup Technology; Measure
How Well the Clean-Up
Solution(s) Perform Over Time

810

MAILING LIST COUPON

If you would like to be on the permanent mailing list to receive future information about environmental cleanup activities at MCAS EL TORO, please fill out the coupon below and mail it to Chrisa Mitchell, MCAS EL TORO, Facilities Management Department/1JG.30, Santa Ana, CA 92709-5001.

Name _____
Address _____
Telephone number _____
Organization/Affiliation _____

Where Can You Get More Information

Copies of all documents and correspondence relating to the environmental cleanup are on file and can be reviewed at the following information repositories listed below. The Administrative Record is on file at the Heritage Park Regional Library.

Heritage Park Regional Library

14361 Yale Avenue
Irvine, California 92714
714/551-7151

MCAS El Toro

Library
Building 280
Santa Ana, California 92709-5001
714/726-2569

If you have any questions or comments, would like to be put on the mailing list to receive fact sheets and other information, or would like someone to make a presentation to your group, please contact:

Chrisa Mitchell

Facilities Management Department/1JG.30
MCAS El Toro
Santa Ana, California 92709-5001
714/726-6607

or

John Hamill

Remedial Project Manager
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105
415/744-2391

Facilities Management Department
U.S. Marine Corps Air Station
El Toro (Santa Ana), CA 92709-5001
Attn: Chrisa Mitchell

Official Business
Penalty for Private Use,
\$300

**FIRST CLASS
MAIL**
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TITLE: FACT SHEET DESCRIBING INVESTIGATION
OF POSSIBLE HAZARDOUS WASTE
CONTAMINATION

AUTHOR: SWDIV

DATE: 11/01/91
CATEGORY: 10.6