OPERABLE UNIT 4 PROPOSED PLAN

Preferred Alternatives for Final Cleanup of the Former March Air Force Base

Purpose

The Air Force Real Property Agency is issuing this ***Proposed Plan*** for ***Operable Unit 4*** to seek public comments on the Air Force's environmental investigation and cleanup efforts at the former March Air Force Base (AFB). The Proposed Plan summarizes past investigations and environmental cleanup activities at sites associated with the former base and the March Air Reserve Base. It also identifies the alternatives the Air Force believes are the best solutions for protection of human health and the environment.

You have an opportunity to review and comment on the Proposed Plan during the public comment period (see details below).

In order to facilitate reuse of the former March AFB and transfer the property to the community, cleanup of most of the environmental contamination was completed under an accelerated program, legally termed ***removal action*** provisions of the ***Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).*** This federal law directs cleanup of contaminated sites at March. The cleanup actions involved removal of contaminated

Note: *Key terms in* ***bold italics*** *are defined on pages 8 and 9.*

How You Can Be Involved

The two ways you can be involved to tell us what you think of this Proposed Plan are: (1) send us comments in writing during the comment period, or (2) tell us in person at the meeting.

Public Comment Period

August 31, 2004, through September 29, 2004

Public Meeting

September 15, 2004, 6:30 p.m.
3430 Bundy Avenue, Building 3409 (Auditorium)
Riverside, California 92518

The Air Force will present a summary of the Proposed Plan. You will be able to ask questions and comment on the cleanup alternatives. The Air Force will record oral comments and respond to them in the final decision document. A final cleanup decision will not be made until all comments are considered.

Mail (or E-mail) your written comments to:
Philip H. Mook, Jr.
Air Force Real Property Agency
3411 Olson Street, McClellan, CA 95652-1003
philip.mook@afrpa.pentagon.af.mil

Or

Eric Lehto
610 Meyer Drive, Building 2403
March Air Reserve Base, California 92518
eric.lehto@march.af.mil

For documents supporting this Proposed Plan and other cleanup program documents, please contact:

Eric Lehto at 951-655-5060
610 Meyer Drive, Building 2403
March Air Reserve Base, California 92518
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soil to levels protective of human health and the environment. The Air Force evaluated the site based on residential standards even though none of the property is zoned for residential use. This evaluation is presented in the *Operable Unit 4 Focused* ***Remedial Investigation/Feasibility Study***.

Section 117 of CERCLA requires public involvement in decisions related to the cleanup and closure of sites. This Proposed Plan addresses the community involvement requirements of CERCLA. The Air Force is seeking public comment on the decisions described in this Proposed Plan (see box on page 1). Based on comments provided by the public, the Air Force may consider other actions if they are deemed necessary to provide additional protection to human health and the environment at the former March AFB. The CERCLA process is illustrated in Figure 1.

For environmental documents describing the Air Force's investigation and cleanup activities, you may contact Eric Lehto at 951-655-5060 at March Air Reserve Base (see box on page 1).

Site Background

Early investigations identified numerous sites where environmental issues were confirmed or suspected. These sites are grouped into four Operable Units. Organization of the sites into Operable Units was based on geographical proximity and similarities in contaminant types and distribution. Operable Units 1 and 3 are on the Main Base, whereas Operable Units 2 and 4 encompass sites on both the Main Base and West March, as well as one remote site, 100 miles to the north (see Figure 2).

Contents

Brief History of Former March Air Force Base

The former March AFB is in the northern end of Perris Valley, east of the City of Riverside and south of the City of Moreno Valley in Riverside County, California. The base is approximately 60 miles east of Los Angeles (see Figure 2). Interstate 215 (I-215) divides the former base into two areas; the Main Base is east of I-215, and West March is west of I-215.

Historically, March AFB was a 640-acre facility called the Alessandro Aviation Field and was officially opened on March 1, 1918. During its 86-year history, March AFB has had a variety of missions, including training, air refueling, and air cargo mobility operations. In September 1993, March AFB was designated for realignment by Congress to March Air Reserve Base and was reduced in size from 6,700 acres to approximately 2,000 acres. The former base closed as an active duty base on April 15, 1996, and active duty personnel and aircraft were transferred to Travis AFB, California. The Air Force Real Property agency is in the process of transferring the property that was once part of March AFB. One of the steps in the transfer of property is this Proposed Plan.

- Operable Unit 1 sites are located along the former southeastern base boundary and include the off-site, solvent, or ***trichloroethylene***, groundwater plume.
- Operable Unit 2 includes sites within the main ***cantonment*** area (Main Base) and sites along the western portion of the base west of I-215 (West March).
- Operable Unit 3 includes only Site 33, the Panero Refueling System located in the center of the airfield parking apron in the central part of the current cantonment (March Air Reserve Base).
- Operable Unit 4 includes all remaining sites that were not included in the other operable units or sites that were removed from previous operable units for various reasons.

Figure 1
CERCLA Process

CERCLA is a federal law passed in 1980, which established procedures for the investigation and cleanup of hazardous sites. CERCLA was amended in 1986 by the Superfund Amendments and Reauthorization Act (SARA). The sequence of primary milestones during site investigation and cleanup are shown below.

NPL Listing	Remedial Investigation	Removal Action	Feasibility Study	**Proposed Plan**	Record of Decision	Remedial Design	Remedial Action
March AFB listed November 1989	Characterize site Evaluate risk to human health and the environment	Eliminate immediate threats to human health and the environment	Develop cleanup options Present and recommend preferred options	**Identify preferred cleanup options** **Solicit public review and comment**	Select and document the chosen remedy Respond to public comments	Develop engineering and/or administrative plans	Implement the selected remedies

The most recent investigations at Operable Unit 4 sites were performed between 1998 and 2004. All sites were evaluated in the Focused Remedial Investigation/Feasibility Study prepared in 2004 and are summarized in the next section, "Scope and Role of Operable Unit 4."

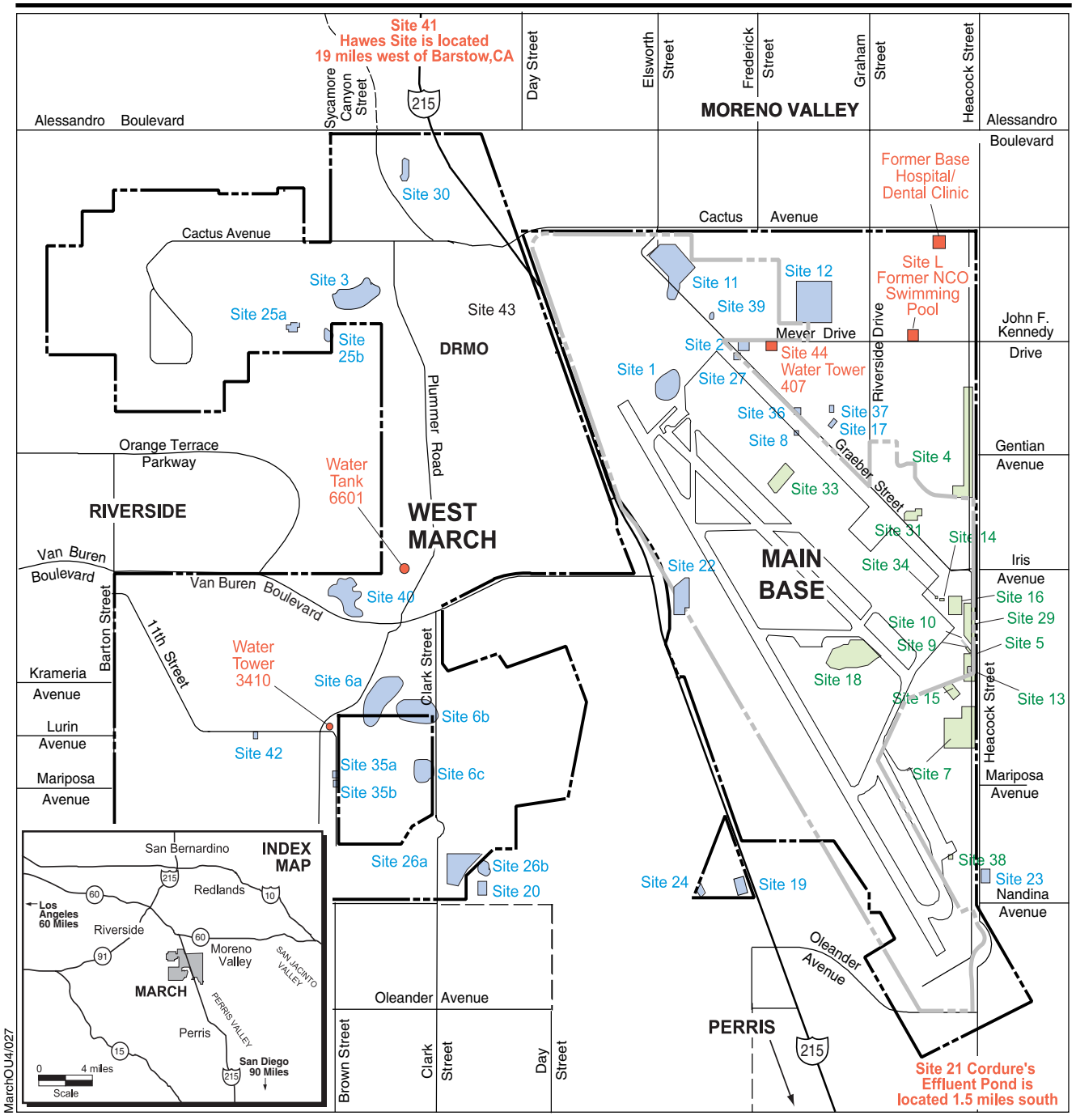
Scope and Role of Operable Unit 4

Operable Unit 4 contains seven sites, shown on Figure 2.

- Site 21 – Cordure's Effluent Pond (1.5 miles south of the airfield). No contamination above unrestricted levels was found during investigation, and the site meets standards for unrestricted use of the property.
- Site 41 – Hawes Site, former Radio Relay Facility in the Central Mojave Desert (100 miles north of the former base, west of Barstow). Contaminated soil was removed from the site, and the site meets standards for unrestricted use of the property.
- Site 44 – Water Tower 407 (Main Base). Contaminated soil was removed from the site, and the site meets standards for unrestricted use of the property.
- Water Tower 3410 (West March). No contamination above unrestricted levels was found during investigation, and the site meets standards for unrestricted use of the property.
- Water Tank 6601 (West March). Contaminated soil was removed from the site, and the site meets standards for unrestricted use of the property.
- Former Base Hospital and Dental Clinic, near Cactus Avenue and Heacock Street. No contamination above unrestricted levels was found during investigation, and the site meets standards for unrestricted use of the property.
- Site L – Former Non-Commissioned Officers' (NCO) Club Swimming Pool (northeast corner of former base on the north side of Meyer Drive between Riverside Drive and Heacock Street). The site is recommended for restricted use to protect human health and the environment from low levels of ***polychlorinated biphenyls*** in the soil, which are covered with 1/2 foot of clean soil and asphalt pavement. This remedy will be reviewed at 5-year intervals to ensure that it remains protective of human health and the environment.

Six of the seven Operable Unit 4 sites will be transferred, and Site 44 will remain part of March Air Reserve Base. The sites are further described in the tables on pages 10-12.

The Operable Unit 4 Focused Remedial Investigation/Feasibility Study includes a description of all ***Installation Restoration Program (IRP)*** and non-IRP sites, their historical practices, results of remedial investigations, cleanup efforts completed to date, and any remaining residual contamination. During the remedial investigation phase, six of the sites (three



EXPLANATION

- March AFB Boundary
- March ARB Boundary

Site 28 is a group of monitoring wells spread across the main base

Site 32 is composed of several construction material landfills not currently located

- Site in Operable Unit 1
- Site in Operable Unit 2
- Site in Operable Unit 3
- Site in Operable Unit 4

0 900 1800 3600 Feet

Operable Units and Installation Restoration Program Sites Former March AFB

"Seven sites are addressed in this Operable Unit 4 Proposed Plan. These are the final sites requiring cleanup."

Figure 2

IRP Sites and three non-IRP sites) were determined to have either no contamination or contamination at levels that were acceptable for unrestricted reuse. Thus, they were not evaluated for potential remedial action. Site L (the former NCO Swimming Pool) is the only site with residual contamination above unrestricted levels. Alternatives for Site L were evaluated in an ***Engineering Evaluation/Cost Analysis*** that was conducted in 1996.

After completion of site investigations and removal actions, two sites (Water Tank 6601 and Site L) were evaluated for risk to human health and the environment during the Operable Unit 4 Focused Remedial Investigation/Feasibility Study.

Summary of Site Characteristics

Land use for the seven sites is summarized below.

- Site 21 (1.5 miles south) is part of a warehouse distribution facility that consists of a landscaped berm and a paved truck parking area that was constructed below the surrounding grade. The surrounding land use includes agricultural and commercial/ industrial property.
- Site 41 (approximately 100 miles north) is in the Mojave Desert, surrounded by open space land.
- Site 44 is part of March Air Reserve Base, which is considered industrial/commercial land use. The site is surrounded by industrial shops, offices, and the March Inn.
- Water Tower 3410 on West March is surrounded by open space and office buildings. The planned land use and zoning in the area is open space/recreational.
- Water Tank 6601 on West March is surrounded by open space and office buildings. The planned land use and zoning in the area is open space/recreational.
- The former Base Hospital and Dental Clinic (northeast corner) is surrounded by and zoned for industrial/commercial and open space.
- Site L (northeast corner) is also surrounded by and zoned for industrial/commercial use.

No Current Risk to Public Health

The Air Force believes that currently there is no significant risk to human health or the environment from the planned reuse of the sites for industrial purposes. The values calculated for human health indicate whether the contaminants would cause cancer or noncancer effects (illness) due to exposure. The ***U.S. Environmental Protection Agency (EPA)*** has established acceptable criteria for these values, which are presented as excess cancer risk values for cancer-causing chemicals (carcinogens) and ***hazard index*** values for noncancer-causing chemicals (noncarcinogens).

Carcinogenic risk is expressed in terms of the increased chance of contracting cancer from exposure to site chemicals. For protection of human health, the U.S. EPA uses a range of 10^{-6} (one in one million) to 10^{-4} (one in ten thousand) as an acceptable target for carcinogens. The noncarcinogenic risk is expressed in terms of the ratio of the actual or potential level of exposure to a chemical compared with an acceptable level of exposure for that chemical. The U.S. EPA considers a hazard index value of 1.0 or less for noncarcinogens to be protective of human health.

Human Health. The Air Force performed a ***risk assessment*** to evaluate the potential noncancer- and cancer-causing risks from direct exposure to contaminated soils and groundwater. Risks were measured in terms of the probability of an individual developing cancer. The expected cancer risk rate for California is 250,000 cancers in a 1,000,000 population. An increase in this rate of 1 in 1,000,000 is considered a potential risk that needs evaluation. Potential noncancer effects were evaluated by comparing an exposure level with a certain dose called "toxicological reference dose." This ratio is a level of exposure below which it is unlikely for even sensitive populations to experience adverse health effects.

In accordance with the ***National Oil and Hazardous Substances Contingency Plan***, site cleanup is generally required for sites with an excess cancer risk of 10^{-4} or greater. If contaminants present an excess cancer risk between 10^{-6} and 10^{-4} and/or a hazard index greater than 1.0, cleanup is evaluated by the risk managers on a site-specific basis. No actions are

required for excess cancer risk values less than 10^{-6} or hazard index values less than 1.0.

The commercial/industrial reuse scenario was within the risk management range for all sites evaluated, which means these can be used for commercial/industrial purposes. The residential reuse scenario was within the acceptable risk range for all sites except Site L, which means that all sites except Site L require no further cleanup.

In summary, the risk assessment results indicate that under current conditions, residual chemicals do not pose an adverse health risk to current or future workers at the base. However, if Site L was converted for residential purposes, the potential exists for adverse risk to human health.

Remedial Action Objectives

The ***Remedial Action Objectives*** serve as cleanup goals for Operable Unit 4. The purpose of remedial action objectives is to ensure that human health and the environment will be protected when the subject property is transferred to a non-federal entity. This objective will be achieved by:

- Removing contaminated soil.
- Preventing residential reuse of the property at Site L and notification of the Air Force if digging is planned (deed restriction).

Summary of Cleanup Alternatives

Based on the results of the risk assessment, the Air Force evaluated several alternatives to address the remaining contamination. These alternatives are summarized below.

Alternative 1: No Action/No Further Action. The Air Force is required to evaluate a no action alternative as the basis for comparing other alternatives and for the assessment of risk reduction or risk acceptability. In addition, because the Air Force has completed many cleanup and removal actions at the base, the no action alternative may also be termed a ***No Further Action*** alternative, because the prior remedial actions reduced the risk sufficiently.

Alternative 2: Institutional Controls. ***Institutional controls*** are non-engineering, legal measures intended to limit exposure to hazardous substances by restricting land use or access to the contaminants. Institutional Controls can either be government controls, such as zoning rules, or deed restrictions. Restrictions, where necessary, would be placed in the deed(s) to prohibit construction, excavation, or other activity that might expose the contamination or damage the integrity of the site. Institutional Controls primarily ensure protection of the remedy. For example, deed restrictions are legally binding on all existing and subsequent property owners. As part of the cleanup decisions for the March Air Reserve Base and the former March AFB, where long-term land use is for commercial and industrial purposes, cleanup to industrial land use standards would protect all current and future workers, but the residual chemical concentrations may pose risk if Site L were to be redeveloped for residential purposes. Therefore, a deed restriction will be placed on Site L to prohibit development of the site for residential use. This remedy will be reviewed at 5-year intervals to ensure that it remains protective of human health and the environment.

The Institutional Control alternative would require the Air Force, with assistance from the regulatory agencies, to monitor site conditions over time. To implement the deed restrictions, the Air Force and regulatory agencies would periodically visit the locations to ensure compliance. If problems were observed, the Air Force and the regulatory agencies would work with the landowner to correct the situation.

Alternative 3: Containment. This alternative involves using an existing barrier or the construction of a new barrier to prevent contact with contaminants and reduce infiltration of rain or irrigation water into the zone where contaminated soils remain. This would protect groundwater resources. The containment barrier could be constructed of specifically formulated soil, concrete, asphalt, or a similar relatively impermeable cover. Containment by covering could be used for other sites posing a direct contact or groundwater threat risk. Included in this alternative is the option to use institutional controls to ensure long-term maintenance of the cover and monitoring of site conditions.

Alternative 4: Removal. This alternative involves removing shallow, contaminated soil by excavation and off-site disposal at an agency-approved facility.

Evaluation of Alternatives

The Air Force evaluated and compared these alternatives against Nine Criteria (see inset). These nine evaluation criteria are part of the CERCLA process established to provide a format for selecting appropriate remedial alternatives. The first two, *overall protection of human health and the environment* and *compliance with state and federal environmental requirements,* are called threshold criteria. These requirements must be met in order for the alternative to be eligible for selection. The remaining seven criteria, called modifying and balancing criteria, are used to compare the eligible alternatives and help in the selection of the ***Preferred Alternative***. The table on page 10 presents the preferred alternative for Site L (the former NCO Swimming Pool).

Nine Criteria used to evaluate Alternatives

1. ***Overall Protection of Human Health and the Environment.*** The degree to which each alternative eliminates, reduces, or controls threats to human health and the environment is assessed. Strategies can include treatment, engineering methods, or institutional controls.
2. ***Compliance with Applicable or Relevant and Appropriate Requirements.*** The alternatives are evaluated for compliance with environmental protection requirements.
3. ***Long-term Effectiveness.*** The alternatives are evaluated based on their ability to maintain reliable protection of human health and the environment after implementation.
4. ***Reduction of Contaminant Toxicity, Mobility, and Volume.*** Each alternative is evaluated based on how it reduces the harmfulness of contaminants and their ability to move through the environment.
5. ***Short-term Effectiveness.*** The length of time needed to implement each alternative is considered. The risks that a particular alternative may pose to workers and nearby residents are assessed, as well as risks to the environment.
6. ***Implementability.*** The technical feasibility and administrative ease of a remedy, including the availability of goods and services, are considered.
7. ***Cost.*** The benefits of a particular alternative are weighed against the cost of implementation.
8. ***State Acceptance.*** The Air Force requests State comments on the Proposed Plan. Then, the Air Force considers whether the State agrees with, has reservations about, or opposes the Preferred Alternative.
9. ***Community Acceptance.*** The Air Force assesses community acceptance of the Preferred Alternative through community outreach and comment on the selected process. A 30-day public comment period is held. The Air Force considers and responds to public comments, including revising the remedy, before the final decision.

The Air Force will evaluate community acceptance of the preferred cleanup alternative after the public meeting and public comment period. The Air Force will describe community acceptance in a section of the ***Record of Decision***, called the ***Responsiveness Summary***.

Preferred Alternatives

Based upon the results of the Operable Unit 4 Remedial Investigation/Feasibility Study, the Air Force, U.S. EPA, and ***California Department of Toxic Substances Control*** and the ***Regional Water Quality Control Board, Santa Ana Region***, believe that the ***preferred alternatives*** presented in this Proposed Plan meet all nine evaluation criteria and provide the best balance among the other alternatives considered with respect to balancing and modifying criteria.

The Air Force, U.S. EPA, and California Department of Toxic Substances Control and Regional Water Quality Control Board must agree that the preferred alternatives are protective of human health and the environment, will comply with applicable or relevant and appropriate requirements, are cost-effective, and utilize permanent solutions to the maximum extent possible. However, institutional controls will not satisfy the preference for treatment as a principal element. The preferred alternatives are subject to change based upon response to public comments.

This Proposed Plan presents the preferred alternatives for the seven Operable Unit 4 sites at the March Air Reserve Base and former March AFB, including three IRP sites and four non-IRP sites. The preferred alternatives are listed in the tables beginning on page 10. The ***selected remedy*** will be established in the Operable Unit 4 Record of Decision.

Community Participation

In 1989, a citizen's Technical Review Committee was established at March AFB before the creation of the Restoration Advisory Board and development of the first Community Relations Plan. The committee provided community involvement early in the cleanup process and two-way communication between the base and local residents, including property owners affected by the cleanup. In 1994, the Restoration Advisory Board was formed in response to public participation requirements of President Clinton's "Five-Point Plan" for speeding up the cleanup and reuse of closing bases. The Restoration Advisory Board is composed of representatives from the Air Force, U.S. EPA, California Department of Toxic Substances Control, and the California Regional Water Quality Control Board, as well as community leaders, representatives from concerned environmental groups, and all interested citizens. The Restoration Advisory Board meets semi-annually and when a special need arises (i.e., new projects or projects that require public review). The Air Force Reserves have the lead responsibility for the Board.

For this effort, you are invited to review and comment on the Operable Unit 4 Proposed Plan. The comment period begins on **August 31, 2004**, and ends on **September 29, 2004**. Written comments should be sent to Mr. Phil Mook or Mr. Eric Lehto at the address listed in the box on page 1. A public meeting will be held **September 15, 2004**, and representatives from the Air Force will be present to answer questions about the former March AFB and the remedial alternatives under consideration. Public comments can be submitted either in writing or orally at the public meeting. Written comments must be postmarked no later than September 29, 2004, for consideration and official response. The public may use the pre-addressed form attached to this document to submit written comments. Written comments sent by mail and oral comments presented at the public meeting will be equally considered.

The Air Force will prepare written responses to all substantive comments pertaining to this Proposed Plan. Responses to the public comments will be included in the Responsiveness Summary of the Operable Unit 4 Record of Decision. The Record of Decision will be available in the ***Administrative Record*** upon publication. For documents supporting the Proposed Plan and other cleanup program documents, please contact Eric Lehto at 951-655-5060 or send E-mail to eric.lehto@march.af.mil.

Preferred alternatives presented in this Proposed Plan may be modified or other alternatives may be selected based upon public comments. Final remedies will not be selected until the public comment period has ended and all comments received have been considered and responded to appropriately.

Definition of Key Terms

Administrative Record: A collection of information, including reports, records, and correspondence, which is used by the Air Force to make decisions regarding response actions under CERCLA. This information is available to the public.

Applicable or Relevant and Appropriate Requirements: The set of federal and state laws and regulations that govern remedial actions and associated activities. Selected remedies must comply with these laws and regulations, although some may be waived in certain instances.

California Department of Toxic Substances Control: The agency responsible for implementing California laws and regulations pertaining to remediation of hazardous waste sites.

California Regional Water Quality Control Board: Agency responsible for protecting the waters of the State of California.

Cantonment: Former Main Base Area, now March Air Reserve Base.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA): Federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act that governs the investigation and cleanup of certain hazardous waste sites and includes requirements for community involvement.

Engineering Evaluation/Cost Analysis: A comprehensive study conducted to evaluate, propose, and recommend alternatives, which are presented in an official document to clean up any contamination that may be found. Part of a streamlined approach to remove contamination to protect human health and the environment.

Feasibility Study: An evaluation of engineering and institutional measures for reducing the chemical risks

at a site. Alternatives for reducing risk due to potential exposure to the contaminants are considered and compared to Nine Criteria (see page 7). The feasibility study forms the basis for identifying and selecting the preferred remedial alternative.

Hazard Index: This is used to calculate health risk. The sum of more than one hazard quotient for multiple substances and/or multiple exposure pathways. The hazard quotient is the ratio of single substance exposure level over a specified time period to a reference dose for that substance derived for a similar exposure period.

Installation Restoration Program (IRP): The environmental investigation and cleanup process implemented at Air Force bases. The IRP process parallels EPA guidance for investigation and cleanup of industrial sites.

Institutional Control: Legal or administrative controls or restrictions used to eliminate or reduce exposure to contaminants and protect operation of cleanup remedies.

National Oil and Hazardous Substances Contingency Plan: The federal regulation that guides determination of the sites to be corrected under the CERCLA program.

National Priorities List (NPL): A nationwide list of priority hazardous substance sites identified under the National Oil and Hazardous Substances Pollution Plan.

No Further Action: A determination made by the Air Force, U.S. EPA, the California Department of Toxic Substances Control, and the California Regional Water Quality Control Board, Santa Ana Region, that a site does not pose a significant risk to human health and the environment and thus does not require any further remedial action.

Operable Unit: Sites with similar contaminants and conditions that are grouped together for investigation, evaluation, and remedial action.

Polychlorinated Biphenyls. Any of a family of industrial compounds produced by chlorination of biphenyl (white crystalline hydrocarbon used especially as heat transfer medium). These compounds are used in electrical transformers and decompose very slowly.

Preferred Alternative: The remedial action recommended by the lead agency, developed during the remedial investigation/feasibility study process, and presented in the Proposed Plan.

Preliminary Remediation Goal: Preliminary remediation goals are tools for evaluating and cleaning up contaminated sites. They are risk-based concentrations that are intended to assist risk assessors and others in initial screening level evaluations of environmental measurements. They are used for site screening and as initial cleanup goals if applicable.

Proposed Plan: The document prepared for public review and comment that describes preferred remedial alternatives.

Record of Decision: Legal document describing and formalizing the selected remedy. For March AFB, Records of Decision are reviewed and signed by the Air Force, U.S. EPA, the California Environmental Protection Agency Department of Toxic Substances Control, and the California Regional Water Quality Control Board, Santa Ana Region. The Record of Decision includes responses to public comments on the Proposed Plan.

Remedial Action Objectives: Cleanup goals or limits determined to be protective of human health and the environment.

Remedial Investigation/Expanded Source Investigation: A follow-on investigation when the records and preliminary site investigation indicate the presence of environmental contamination. The remedial investigation is a more extensive sampling program involving collection of numerous soil, air, and/or groundwater samples to define the nature (the types of chemical concentrations) and extent (area and volume) of contamination. During the remedial investigation, a risk assessment is performed to evaluate the potential health threats due to exposure to soil, air, and water.

Removal Action: A short-term action implemented to clean up a site that poses an immediate threat to human health or the environment.

Responsiveness Summary: A summary of oral or written comments received during a public comment period and lead agency responses to the comments.

Risk Assessment: An evaluation of risks to human health due to potential exposure to contaminants.

Selected Remedy: The action selected by the lead agency to protect human health and the environment at a site.

Trichloroethylene (TCE): A volatile solvent used in industrial applications and dry cleaning.

U.S. Environmental Protection Agency (EPA): The agency responsible for implementing federal environmental laws and regulations pertaining to remediation of hazardous waste sites and other environmental risks.

How the Alternatives Meet the Evaluation Criteria
Former March Air Force Base Operable Unit 4 Proposed Plan
August 2004

Site Name and Description	Description of Alternative[2]	Evaluation Criteria[1]						
		Overall Protectiveness of Human Health and the Environment	Compliance with State and Federal Environmental Requirements	Long-Term Effectiveness and Permanence	Reduction in Toxicity, Mobility, or Volume through Transport	Short-Term Effectiveness (Time to Cleanup)	Implementability	Total Cost/ Annual Operation & Maintenance
Site L - Former Non-Commissioned Officers' Club Swimming Pool. Construction debris and contaminated soil was removed from the pool and properly disposed. Low levels of polychlorinated biphenyls in the soil beneath the pool and in surface soil surrounding the pool were identified. Concentrations ranged from 0.065 to 5.8 milligrams per kilogram, above EPA's 1998 ***preliminary remediation goal*** for residential use (0.2) and industrial use (1.3). Using analytical results from all depths, residual risk is $2.2x10^{-6}$ based on average concentrations, and industrial reuse does not exceed 1×10^{-6}. The final removal action was completed in 1997, and final confirmation sampling was completed in 1999. Based on an Action Memorandum, the site was backfilled with a minimum of 6 inches of clean backfill, and an asphalt cap was installed to prevent exposure to the contaminated soil.	Alternative 1 No Further Action	No	No	The No Further Action alternatives does not meet the required threshold evaluation criteria for Site L.				
	Alternative 2 Institutional Controls: • Prohibit residential use (hospitals for human care, public or private schools for persons under 18 years of age, or day-care centers for children) • Prohibit activities that limit access to the site for inspections	Yes	Yes	Yes	No	No	Yes	$72,100
	Alternative 3 Containment with Cap	Yes	Yes	Yes	Yes	Yes	Yes	$600,000[a]
	Alternative 4 Removal and Off-Site Disposal	Yes	Yes	Yes	Yes	Yes	Yes	$1,002,800[b]

Notes: a. Assumes $20,000 per year monitoring for 30 years.
b. Assumes removal of 9,200 yards of polychlorinated biphenyl contaminated soil and asphalt (1.9 acres by 3 feet deep), disposal at Class I/II facility, confirmation sampling, and preparation of

[1] The first two criteria, "Overall Protectiveness of Human Health and the Environment" and "Compliance with State and Federal Environmental Requirements," are called threshold criteria. Threshold criteria are requirements that each alternative must meet in order to be eligible for selection. The remaining criteria, called modifying and balancing criteria, are used to compare the eligible alternatives and help in the selection of the Preferred Alternative.

[2] The shaded alternative is the preferred alternative.

closure report.

No Further Action Sites
Former March Air Force Base Operable Unit 4 Proposed Plan
August 2004

Site Name	Site Description and Former Use	Site Activities and Status	Preferred Alternative (Remedy)	Rationale for Selected Remedy
IRP Site 21	Cordure's Effluent Pond	In the 10 years of investigation associated with the site, the site has been modified considerably. Originally, the site contained the bermed pond, which was filled with trash and miscellaneous debris due to illegal dumping by the public. The landowner leveled the site to prevent the public from using it as an illegal dumping site. Once the site was leveled, the site became part of the surrounding sod farm until the property was sold. Currently the site is part of a landscaped berm and sub-grade paved parking area for a warehouse distribution facility. Soil and groundwater samples collected from the site were below action levels, which means the site is within safe limits.	**Alternative 1 No Further Action**	The selected remedy allows unrestricted use of the property. In addition, the site has been significantly modified since the site was an effluent pond used by the Air Force. In the last 10 years the site has been leveled to be part of a sod farm and then completely graded to become a landscaped berm and paved parking area for a warehouse distribution facility. The site is not a threat to human health or the environment.
IRP Site 41	Hawes Site, Former Radio Relay Facility in the Central Mojave Desert	No contamination above unacceptable levels was detected during several investigations. Minor fuel-related compounds were detected at 30 to 40 feet below the ground surface but were determined not to be an impact to human health or ecological receptors due to the depth of the contamination. It was also determined not to be a threat to groundwater because: (1) depth to groundwater was in excess of 300 feet below the ground surface, (2) lack of significant rainfall at the site, and, (3) a hard layer of soil exists below 35 feet below the ground surface.	**Alternative 1 No Further Action**	The selected remedy allows unrestricted use of the property.
IRP Site 44	Water Tower 407, Mercury Contamination	The Air Force removed mercury from the soils at the site. Groundwater sampling around the site showed that the mercury release had not impacted groundwater in the area.	**Alternative 1 No Further Action**	The selected remedy allows unrestricted use of the property.
Water Tower 3410	Water Tower 3410, Potential Mercury Spill Site	No mercury contamination above residential levels was detected during site investigations.	**Alternative 1 No Further Action**	The selected remedy allows unrestricted use of the property.
Water Tank 6601	Water Tank 6601, Potential Mercury Spill Site	The Air Force removed mercury from the soils at the site. Confirmation samples collected from the excavation area showed that residual mercury contamination was present but at concentrations well below action levels; therefore, the site is within safe limits for residential use.	**Alternative 1 No Further Action**	The selected remedy allows unrestricted use of the property.

No Further Action Sites
Former March Air Force Base Operable Unit 4 Proposed Plan
August 2004

Site Name	Site Description and Former Use	Site Activities and Status	Preferred Alternative (Remedy)	Rationale for Selected Remedy
Former Base Hospital and Dental Clinic	Former Base Hospital and Dental Clinic, Potential Mercury Release to Sanitary Sewer System	A site investigation revealed that low levels of mercury contamination are present within the sewer line. Based on the site investigation, the sewer line is in excellent shape, and soil samples collected adjacent to the sewer line showed that mercury was only present in trace amounts and that levels of mercury in the soil adjacent to the sewer line are well below residential levels. Ambient air samples collected inside the hospital and dental clinic showed that mercury vapor also is present but well below residential reuse levels.	**Alternative 1 No Further Action**	The selected remedy allows unrestricted use of the property.

Administrative Record

The Air Force maintains documents related to the environmental cleanup of former March Air Force Base/Air Reserve Base. To see the related environmental cleanup documents, please contact Eric Lehto at 951-655-5060 or eric.lehto@march.af.mil.

The Air Force encourages you to use this information resource during your review of this Proposed Plan, which will facilitate your participation in the decision process regarding the Operable Unit 4 Proposed Plan.

FOR MORE INFORMATION

For more information about the public involvement process or if you have questions or comments about environmental activities at the former March AFB/Air Reserve Base, please contact:

Philip H. Mook, Jr., PE
Regional Environmental Coordinator
Air Force Real Property Agency
3411 Olson Street
McClellan, CA 95652-1003
800-655-7200, ext. 209

Or

Eric Lehto
Remedial Project Manager
452 CES/CEV
610 Meyer Drive, Building 2403
March Air Reserve Base, CA 92518-2166
951-655-5060

Sheryl Lauth
Remedial Project Manager
U.S. EPA
75 Hawthorne Street
San Francisco, CA 94105
800-231-3075

Stephen Niou, Remedial Project Manager
California EPA, Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90802
714-484-5458

John Broderick, Remedial Project Manager
California Regional Water Quality Control Board, Santa Ana Region
3737 Main St., Suite 500
Riverside, CA 92501
951-782-4494

Linda Geissinger, Regional Public Affairs Manager
Air Force Real Property Agency
3411 Olson Street
McClellan, CA 95652-1003
800-655-7200, ext. 109

Viola Cooper, Community Involvement Coordinator
U.S. EPA
75 Hawthorne Street
San Francisco, CA 94105
415-972-3243

Leticia Hernandez, Public Participation Specialist
California EPA/Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90802
714-484-5488

USE THIS SPACE TO WRITE YOUR COMMENTS

Your input on the Operable Unit 4 Proposed Plan for the Former March Air Force Base is important to the Air Force. Comments provided by the public are valuable in helping the Air Force select a final cleanup remedy for the sites.

You may use the space below to write your comments, then fold and mail. Comments must be postmarked by September 29, 2004. Use one of the addresses below to mail your comments.

Phil Mook
AFRPA/DD-McClellan
3411 Olson Street,
McClellan, CA 95652
philip.mook@afrpa.pentagon.af.mil

Eric Lehto
452 CES/CEV
610 Meyer Drive, Building 2403
March Air Reserve Base, California 92518-2166
eric.lehto@march.af.mil

If you have any questions about the comment period, please contact Mr. Philip Mook at 1-800-655-7200, extension 209. To submit an electronic communication with your comments via the Internet, use one of the E-mail addresses given above.

Please complete the Name and Address section below. If you would like to be on the mailing list to receive information about environmental restoration activities at the former base, check "Yes" below. Please mail this page to the address above.

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Name _____ _____Yes, add me to the mailing list.

Address _____

City_____ State _____ Zip _____