

# THE FACTS

Information About  
Environmental Cleanup  
at McClellan AFB  
January 2000

Produced by McClellan AFB Environmental Management

Number 29

## Soil Vapor Extraction Systems proposed as remedy for investigative clusters 5, 25, 43 and sites SSA-2, PRL S-13, and PRL 66

The United States Air Force invites public comment on the proposed removal actions at Investigative Cluster (ICs) 5, 25, 43 and Sites SSA-2, PRL S-13, and PRL 66. (See map right.) There are three major points on which the Air Force invites public comment: The location and number of wells where the Air Force proposes to use Soil Vapor Extraction technology, and the type of soil vapor extraction technology selected for each location.

This fact sheet is an overview of a proposal to clean contaminated soils and will explain the causes and locations of the contamination, the proposed remedy for cleanup and how that remedy will work. Detailed information is available in the Engineering Evaluation/Cost Analysis (EE/CA) documents for each site.

During the public comment period January 4, 2000 through February 3, 2000 the public has the opportunity to comment on the proposed actions. Comments should be postmarked by February 3, 2000. Send your comments to:

~~SM-ALC/EM~~  
Attn: Merlaone Briggs  
5050 Dudley Blvd., Suite 3  
McClellan AFB CA 95652-1389

### The Sites

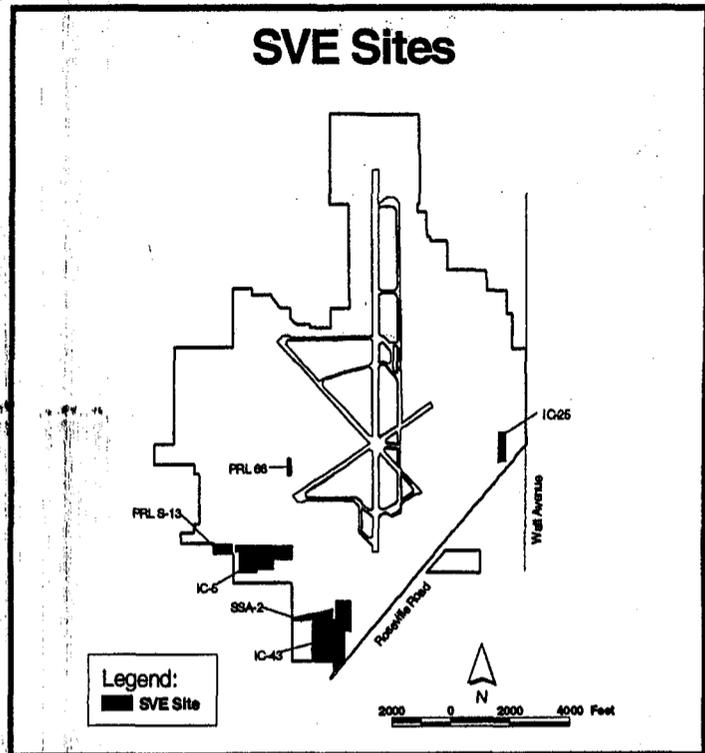
The areas involved in this cleanup action are in the east, south and western areas of the base. IC 25 is on the east side. PRL 66 is west of the runway. PRL S-13 and IC 5 are on the southwestern side of the base. SSA-2 and IC 43 are on the south end of the base.

The soil is contaminated with volatile organic compounds (VOCs). VOCs are carbon based compounds that evaporate readily at room temperature. Some are known or suspected carcinogens. The proposed removal action will use soil vapor extraction (SVE) technology. This technology is explained later in this fact sheet. More detailed information will be available in the SVE-EE/CA documents.

IC 25 is in the eastern side of the base and is 8 acres. It has four study areas: SA 35, SA 37, SA 38, and SA 39. Previous activities included an automotive service station, quartermaster's warehouse, diesel underground storage tank, base commissary and several office buildings. The remedial investigation confirmed the existence of fuels and trichloroethane (TCE) which is a solvent used in electronics and manufacturing. The groundwater below this site was found to have carbon tetrachloride, 1,2-dichloroethane, and TCE above the maximum contaminant levels (MCLs). The term "MCL" is a federal drinking water standard used for developing cleanup standards for groundwater. A system of relatively shallow (40 feet or less below ground surface) wells were installed at SA 38, the site of the former service station, to remediate the fuels contamination by bioventing. That is, air is forced into the soil through wells of slotted PVC pipe by a blower. This promotes biological activity in the soil which consumes hydrocarbons, but is not considered entirely effective against solvents such as TCE.

IC 43 is in the south area of the base and is 53 acres. It has two potential release locations (PRLs), PRL T-6 and PRL T-7, and five study areas, SA 88, SA 90, SA 91, SA 92 and SA 104. Previous activities included many underground storage tanks, the communications-electronic repair facility with wire board manufacturing, electronics repair, and painting operations, hazardous materials staging, a portion of the industrial waste line, a steam generation facility, parking lots, and open grassland. The remedial investigation confirmed the existence of toluene, acetone, benzene, ethylbenzene, methyl-ethyl-ketone, tetrachloroethene, m,p-xylenes, Freon-113, 1,1-dichloroethene, hexane, cyclohexane, heptane, and trichloroethene in the soil. The groundwater below IC 43 was found to have the following compounds above MCL levels: trichloroethene, 1,1-dichloroethene, 1,1-dichloroethane, 1,2-dichloroethane, cis-1,2-dichloroethene, and carbon tetrachloride. However, no toluene, which was found in significant concentrations in the soil, has reached the groundwater.

IC 5 is in the south western area of the base and is 29 acres. It has one confirmed site: CS31, two potential release locations: PRL P-2 and PRL 29, and four study areas: SA 12A, SA 12B, SA 12C, and SA 13. Previous activities included a refuse incinerator, a refuse pit, storage yard, disposal pit, and a precious metals recovery facility. The remedial investigation confirmed the existence of 1,1-dichloroethene and trichloroethene in the soil. The groundwater below this site was found to have 1,1-dichloroethene, cis-1,2-dichloroethene, methylene chloride, and trichloroethene above the MCL levels.



Site SSA-2 is in the southern area of the base and is 17.4 acres. Previous activities included warehouses (most since demolished), software and computer microprocessor support facilities and hazardous wastes storage. The remedial investigation confirmed the existence of tetrachloroethene (PCE), trichloroethene (TCE), and Freon-113 in the soil. The groundwater below SSA-2 was found to have both TCE and carbon tetrachloride above MCL levels.

Site PRL S-13 is in the southwest area of the base and is 4 acres. Previous activities have been principally the staging of hazardous and non-hazardous materials. The remedial investigation confirmed the existence of tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), and Freon-113 in the soil. The groundwater below PRL S-13 was found to have TCE at levels above MCLs.

PRL 66 is west of the runway in the center of the base near the Groundwater Treatment Plant. The area to be treated by this proposed action is specifically PRL 66B; however, PRL 66A and PRL 66C were investigated and are discussed in this SVE-EE/CA document. Previous activities have included test stands for testing jet engines, hush houses (test stands that have noise suppression equipment), and an industrial waste line. The remedial investigation confirmed the existence of trichloroethene (TCE) in the soil. The groundwater was also found to have TCE above MCL levels.

### The Proposed Remedy for Cleanup

Installation and operation of a soil vapor extraction (SVE) system has been evaluated and recommended as the remedy for the removal of volatile organic compounds from fuels and solvent soil gases in the vadose zone at ICs 5, 25, and 43, and sites SSA-2, PRL S-13, and PRL 66. These recommendations were documented in the *McClellan Basewide Engineering Evaluation and Cost Analysis for Soil Vapor Extraction* for each IC and/or site. Regulatory agencies have recognized that at times site conditions are well suited to a particular technology and that technology can be presumed to be appropriate, called a *presumptive remedy*, without conducting an exhaustive evaluation. Criteria that were evaluated included contaminant volatility, soil permeability, depth of contamination, and the threat of further groundwater contamination. Based on the conditions at McClellan AFB the presumptive remedy for vadose zone soil contamination by VOCs is SVE.

These EE/CAs are available for review at McClellan Air Force Base's information repository and on McClellan AFB Environmental Management's web site.

**What is next?** Following the public comment period, the Air Force will prepare a written response to comments and make it available to the public in the Information Repository and to those who provided comments.

Department of the Air Force  
 SM-ALC/EM  
 5050 Dudley Blvd., Suite 3  
 McClellan AFB, CA 95652-1389

OFFICIAL BUSINESS

PRESORTED  
 FIRST-CLASS MAIL  
 US POSTAGE PAID  
 SACRAMENTO, CA  
 Permit No. 2260

*A public comment period will be held from January 4 through February 3, 2000. All comments should be postmarked by February 3, 2000, and sent to:*  
 Melanne Briggs  
 SM-ALC/EM  
 5050 Dudley Blvd., Suite 3  
 McClellan AFB, CA 95652-1389  
 (916) 643-1742 ext. 457 or 354

better observe the cleanup progress, several monitoring wells are also installed. The typical construction is of one, two, or three one-inch PVC tubes, with two-foot screen intervals. Placement of the tubes is dependent on soil gas results and the particular soil type in the area. Additionally, a monitoring unit is used to observe the vacuum influence of the nearby SVE well.

### Soil Vapor Extraction Systems proposed as remedy for cleanup

Soil Vapor Extraction, or SVE, is the process of literally vacuuming soil gas from the vadose zone of the soil. The vadose zone is the area from the ground surface to the water table. At McClellan AFB, this usually extends to about 110 feet below ground surface.

A four inch diameter well, usually made of PVC pipe, will be installed. This pipe has small screens in the casing to allow passage of soil gas. The typical screen begins 20 feet below ground surface, extending to 100 feet. The type of contaminants and the type of soil dictates other screening intervals. The SVE well is installed where the investigation reveals the highest localized concentration of contamination in the plume.

Once vacuum is applied, the soil gas is swept into the well from distances of usually 300 to 500 feet at McClellan SVE sites. The soil gas contaminants are routed into a treatment plant. There are two types of treatment systems. One treatment uses heat to destroy the contaminants and the other uses granular activated carbon to capture them. Once the carbon can no longer effectively absorb more contaminants, it is taken to a licensed facility where the carbon is regenerated and the contaminants are destroyed. The soil gas is routinely monitored in the extraction wells at SVE sites. To

*McClellan AFB  
 Information Repository  
 5050 Dudley Blvd., Suite 3  
 McClellan AFB, CA 95652-1389  
 Hours: Mon-Fri 8:00 am - 3:30 pm  
 Contact: Danny Dukes at  
 (916) 643-1742 ext. 347*

The Web Site is bookmarked  
 on the computers at the  
 North Highlands  
 and  
 Rio Linda Libraries

McClellan AFB Environmental  
 Management Web Site

~~<http://www.mcclellan.af.mil/EM/>~~



*For more information on this  
 project or any other  
 McClellan Air Force Base  
 Environmental project contact:  
 Melanne Briggs  
 Environmental Community Relations  
 5050 Dudley Blvd., Suite 3  
 McClellan AFB, CA 95652-1389  
 (916) 643-1742 ext. 457 or 354*

*Nathan Schumacher  
 Public Participation Specialist  
 CAL/EPA Department of  
 Toxic Substances Control  
 (916) 255-3650*

*David Cooper  
 U.S. EPA  
 Community Relations Specialist  
 (415) 744-2129 or  
 (800) 291-3075*

# McClellan Air Force Base Environmental Management

