Environmental Fact Sheet
Naval Auxiliary Landing Field
Crows Landing

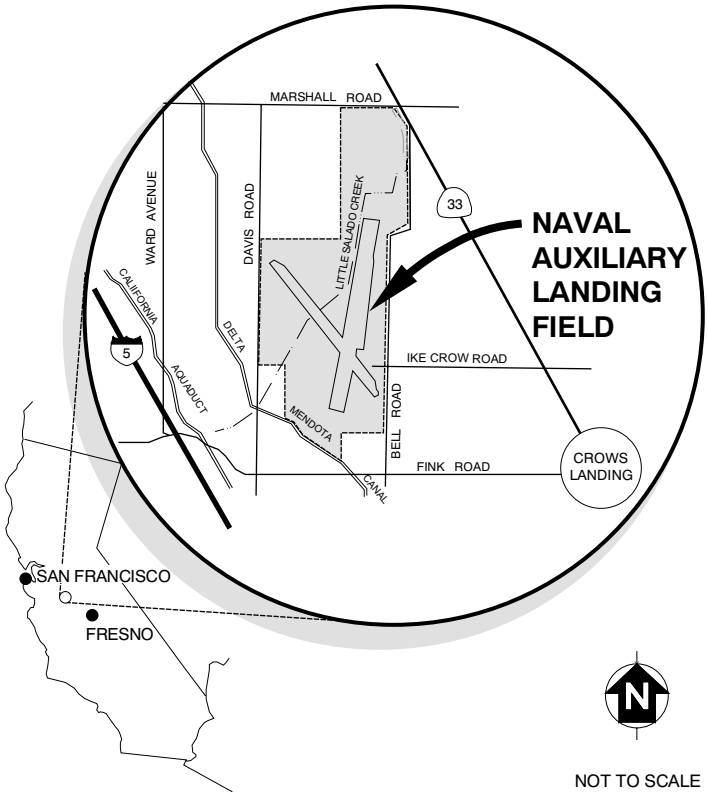
Crows Landing, California **August 1997**

INTRODUCTION

The U.S. Navy would like to inform the community about the results of recent environmental investigations at Naval Auxiliary Landing Field, or "NALF" Crows Landing. These investigations were used to evaluate the type and extent of contamination resulting from past practices and operations. The investigations included four underground storage tank or "UST" sites and eight Installation Restoration Program or "IRP" sites. In addition, the Navy has been monitoring groundwater contamination beneath the base. Groundwater samples have been collected every 3 months to track any changes in contamination.

Results from these investigations are documented in the UST sites problem assessment report, IRP sites remedial investigation report, and the annual groundwater monitoring report. These reports, and other documents describing previous environmental studies at the base, are available for review at the Patterson Public Library. The address and telephone number of the library are:

Patterson Public Library
Reference Desk
46 Salado Avenue at 3rd Street
Patterson, California 95363
(209) 892-6473



Location of NALF Crows Landing

INVESTIGATION RESULTS AT UST SITES

The four UST sites studied at NALF Crows Landing include UST Cluster 1, UST Cluster 2, UST 109, and UST 117. These UST sites were contaminated when fuel leaked from the tanks, pipelines, or associated equipment. These tanks were removed and some soil and groundwater contamination was found.

Aircraft fuel has been found in both soil and groundwater beneath UST Clusters 1 and 2. Gasoline has been detected in both soil and groundwater beneath UST 117. Only soil has been affected beneath UST 109. The fuel did not spread deep enough to impact groundwater beneath this site. The map in this fact sheet shows each of these UST sites and the extent of groundwater contamination beneath UST Clusters 1 and 2 and UST 117.

INSTALLATION RESTORATION PROGRAM (IRP) and UNDERGROUND STORAGE TANK (UST) PROGRAM

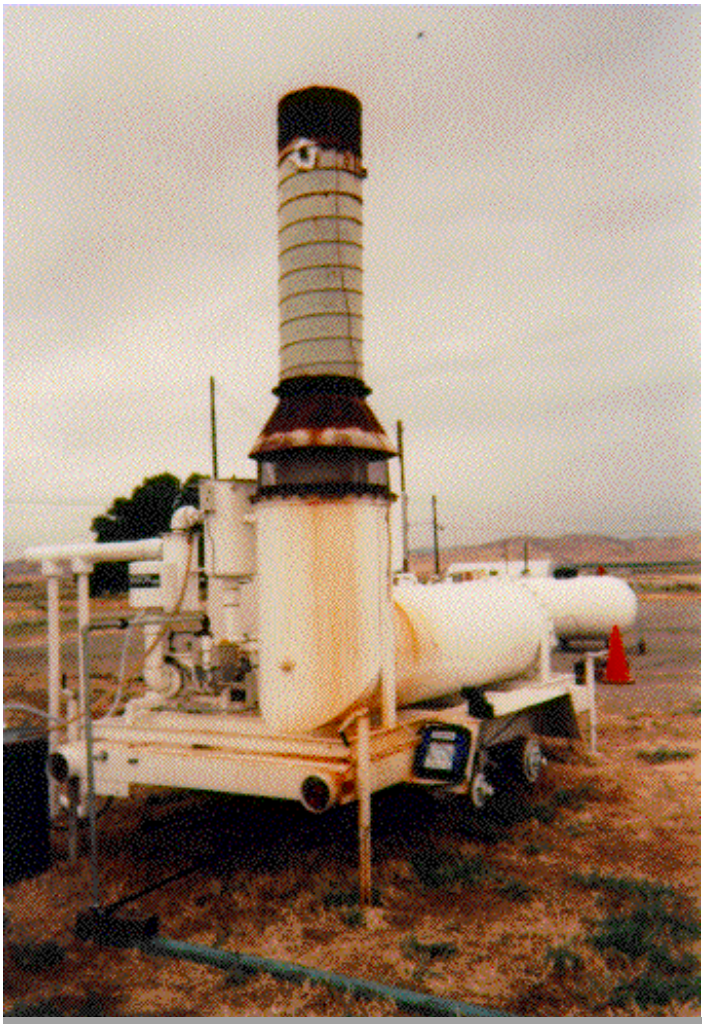
The U.S. Department of Defense uses the IRP and UST programs to identify, investigate, and clean up environmental contamination at military facilities. The IRP addresses a wide variety of sites from maintenance areas to landfills. The UST program involves only underground fuel storage tanks.

INVESTIGATION RESULTS AT INSTALLATION RESTORATION PROGRAM SITES

The eight Installation Restoration Program sites studied at NALF Crows Landing include the following:

Rubble Disposal Area
Disposal Pits Area
Auto Maintenance Shop Area
TACAN Transformer Oil Spill Area
Fire Fighting Training Area
Pesticide Rinse Area
Demolished Hangars Area
Firing Range Area

The map in this fact sheet shows where each of these sites is located.



Soil Vapor Extraction System at UST 117

Contamination had already been removed from the Fire Fighting Training Area by the Navy in 1991. Also, minor contamination at several sites was removed during recent investigations and properly disposed of off site. The only sites with contamination remaining include the Disposal Pits Area and the Demolished Hangars Area.

Contamination at the Disposal Pits Area includes petroleum, found in groundwater samples. The petroleum is at very low levels and is only occasionally detected in groundwater samples. Most of the buried debris found in the disposal pits appeared to be building demolition material.

Groundwater beneath the Demolished Hangars Area was found to be contaminated with carbon tetrachloride. Carbon tetrachloride was used as a cleaning solvent for aircraft maintenance. The map in this fact sheet shows the extent of this solvent found in groundwater beneath the Demolished Hangars Area.

GROUNDWATER MONITORING RESULTS

Groundwater samples were collected every 3 months during the past year. These results were used to track changes in contamination discovered from former investigations. The monitoring results showed that the areas of groundwater contamination, called the contaminant "plumes," are stable. None of the plumes extend beyond the base boundaries. In addition, none of these plumes are expected to move beyond the base boundaries in the near future. The map in this fact sheet shows each of the plumes.

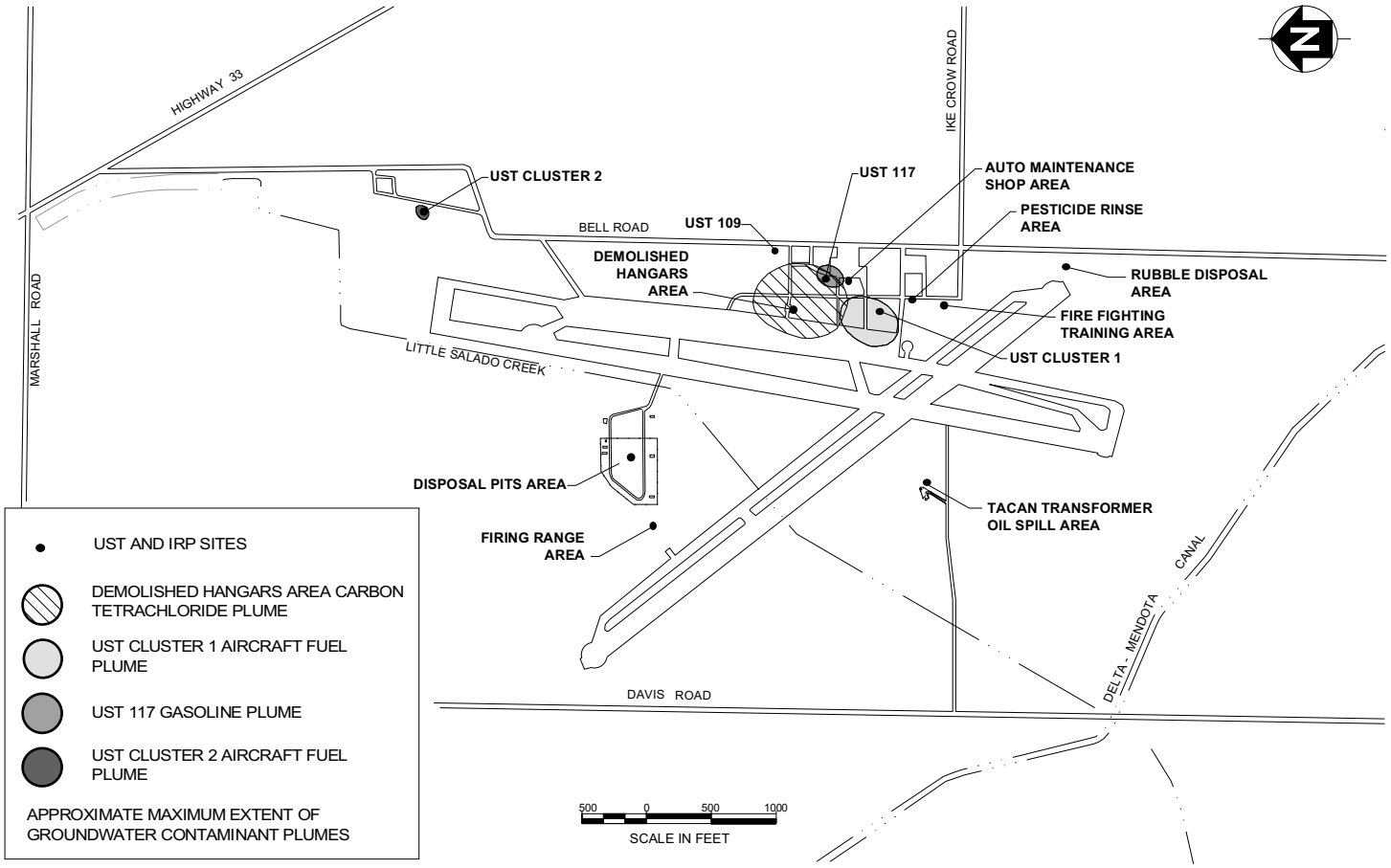
THE NEXT STEP

GROUNDWATER MONITORING

Periodic groundwater monitoring is important to track changes in the shape, concentration, or movement of contaminant plumes. At NALF Crows Landing, this periodic groundwater monitoring (completed every 3 months) has shown that the plumes are stable, for several reasons. First, there is no strong, consistent groundwater flow direction beneath the base that would move the plumes. Instead, groundwater flow tends to reverse from one direction to another throughout the year in response to the pumping of nearby irrigation wells. In addition, significant contaminant sources no longer exist on base. For example, all USTs have been removed. Some soil contamination remains at several tank sites, still, the contaminated soil does not contribute as much contamination to groundwater as a tank that continues to leak fuel.

THE NEXT STEP

Information from the recent environmental investigations will now be used to select the best methods for cleanup. Most cleanup methods being considered will actually be tested at the base before decisions are made. Groundwater monitoring will continue to track any changes in plumes until cleanup is complete.



Location of IRP Sites and Contaminant Plumes at NALF Crows Landing

Cleanup methods for the UST sites include "vacuuming" easily evaporated fuel, such as gasoline, through holes drilled through contaminated soil. This method is called soil vapor extraction. The Navy has already successfully tested soil vapor extraction at UST 117. This soil vapor extraction system is currently operating to continue removing gasoline from this site (see the photograph in this fact sheet).

Another method for cleaning up fuel at the UST sites involves enhancing the natural degradation process. Normally, naturally occurring bacteria will eventually degrade most fuel. The fuel is a food source for the bacteria. This natural "biodegradation" process can be accelerated by supplying oxygen to help the bacteria. The Navy has already constructed several systems to help supply oxygen to both contaminated soil and groundwater areas. These systems will be tested during the summer of 1997.

At the IRP sites, a soil cap is being considered for the Disposal Pits Area. The soil cap will help control precipitation runoff and keep water from going down through the buried debris.

Several methods will be tested to remove the solvent carbon tetrachloride from groundwater at the Demolished Hangars Area. One method involves blowing air through the groundwater. Carbon tetrachloride easily evaporated in air, is "stripped" from groundwater by the air bubbles. Another cleanup method is to pump out contaminated groundwater through water wells for treatment. The Navy has already constructed systems to test both of these cleanup methods at the Demolished Hangars Area. These systems will be tested during the summer of 1997.

For each site, the Navy will propose a cleanup method after testing is complete and all alternatives have been carefully considered. The cleanup proposal will be ready by mid-1998. Public input will be solicited on the proposed cleanup. After the Navy reviews and responds to comments provided by the public, an action plan will be prepared outlining the chosen cleanup method.

FOR MORE INFORMATION

For more information about environmental cleanup efforts at NALF Crows Landing, please contact:

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