

Travis AFB Announces Plan for Interim Cleanup of Contaminated Groundwater in NEWIOU



Prepared by Travis AFB Civil Engineering/Environmental Restoration

Introduction

This Proposed Plan describes and seeks your comments on the **interim actions**¹ the Air Force proposes to use to **remediate groundwater** contamination at Travis Air Force Base (AFB), California. A public meeting to discuss this Proposed Plan will be held at Vanden High School in Fairfield, 7:00 p.m., 17 October 1996 (see map on back cover).

This Proposed Plan addresses groundwater contamination in three of four areas known as **Operable Units (OUs)** of Travis AFB. These OUs are the North, East Industrial, and West Industrial OUs, together known as the **NEWIOU** (see Figure 1). The Air Force has also identified areas of soil contamination in the **NEWIOU**; proposed remediation of the soil contamination will be described in a separate Proposed Plan. **Sites** in the fourth OU, the West/Annexes/Basewide OU (WABOU), will also be addressed in a separate Proposed Plan.

The Air Force, together with the U.S. Environmental Protection Agency (U.S. EPA) and the State of California, requests public review and comment on this Proposed Plan. The Air Force seeks your comments not only on the proposed actions (the preferred alternatives) for each site, but on all of the alternatives discussed in this Proposed Plan.

¹Words highlighted in **boldface** are defined in the Glossary on Page 14 of this Proposed Plan.

The proposed actions described in this Proposed Plan are interim actions. Once these or other interim actions are selected, an **Interim Record of Decision (IROD)** will be prepared to document the selected interim remedies. The IROD will then be formally approved and signed by the regulatory agencies. These proposed cleanup actions will be evaluated for performance once systems have been implemented. The IROD is discussed more fully below.

This Proposed Plan provides a recap of the **Remedial Investigation/Feasibility Study (RI/FS)** reports, but is not intended as a substitute for the reports, which include technical information not discussed here. You are encouraged to review the RI reports for the three individual OUs, the FS for the **NEWIOU**, and other site-related documents in the Travis AFB **Information Repository**. (See the back page of this Plan for the address of the Information Repository.)

The Department of Defense (DoD), as represented by the Air Force, is the lead agency for the Travis AFB Site. The Air Force's activities are reviewed by the U.S. EPA, California Department of Toxic Substances Control, and Regional Water Quality Control Board, San Francisco Bay Region.

Site Background

Travis AFB occupies approximately 5,025 acres in Solano County, California, midway between San Francisco and Sacramento (Figure 2). It is located

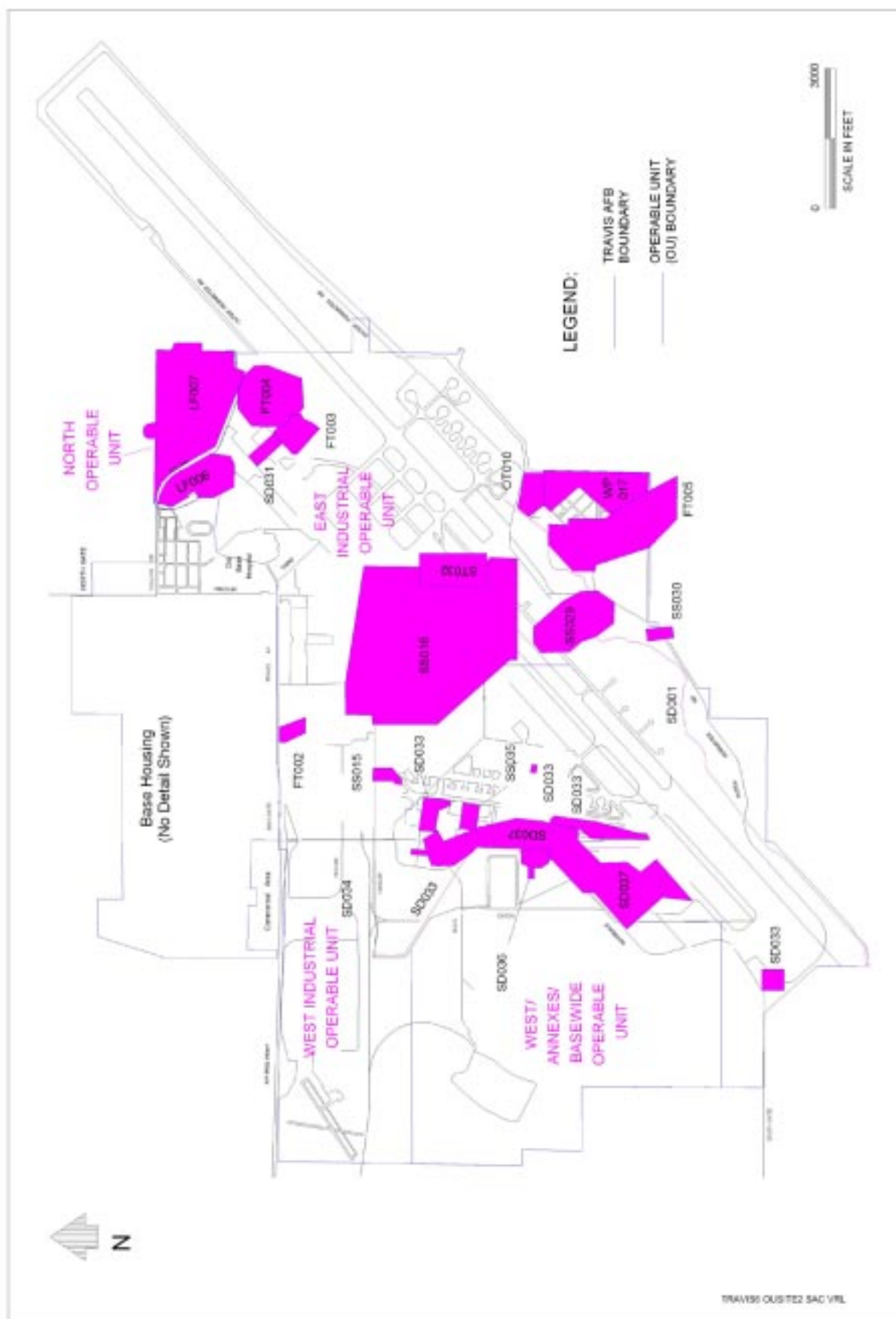




Figure 2. Regional Location Map, Travis AFB

in primarily agricultural or range land, although recent years have seen residential development to the southwest and commercial development to the north and west. Travis AFB has provided strategic airlift support to military forces worldwide since it was established in 1943. It is home to the largest mobility organization in the Air Force. As other Air Force bases have closed across the country, some missions from those bases have relocated to Travis AFB, including a new wing of KC-10 aerial refueling aircraft. To support these missions, various hazardous materials, such as oils, fuels, and solvents, are used to maintain the aircraft (and in associated industrial processes).

In 1983, the Travis AFB **Installation Restoration Program (IRP)** was initiated to investigate soil and groundwater contamination resulting from past base operations. Releases of hazardous waste had occurred as a result of leaking pipelines, spills, or disposal of wastes to landfills. The materials handling and disposal practices that resulted in the contamination have been stopped. Travis AFB now follows environmentally safe guidelines for the management and disposal of all hazardous materials and waste. In 1989, after evaluating initial IRP data, the U.S. EPA placed

Removal Actions

To date, three expedited cleanups, called "Removal Actions," have been taken within the NEWIOU. These actions address contaminated groundwater that poses a potential threat to human health and the environment. These Removal Actions address only a selective cleanup of a portion of a site; remedial actions may still be required for final cleanup of the site.

The Tower Area Removal Action (TARA)

To remove high concentrations of VOCs and protect workers from contaminated groundwater during construction of a hydrant system near the tower, the TARA system has been pumping and treating groundwater since May 1995. As of 30 June 1996, the system has removed 189 pounds of contaminants.

Jet Fuel Spill Area

In the southern part of the WIOU in an area called the Jet Fuel Spill Area (JFSA), a treatment system removed fuel floating on top of groundwater near two storage tanks. More than 4,800 gallons of fuel were recovered and recycled.

SS016

To expand TARA's extraction efforts, the SS016 groundwater extraction and treatment system is being constructed at Building 16 in the EIOU, an area formerly called the Oil Spill Area (OSA). This system will extract groundwater with high concentrations of contamination near Building 16 for treatment.

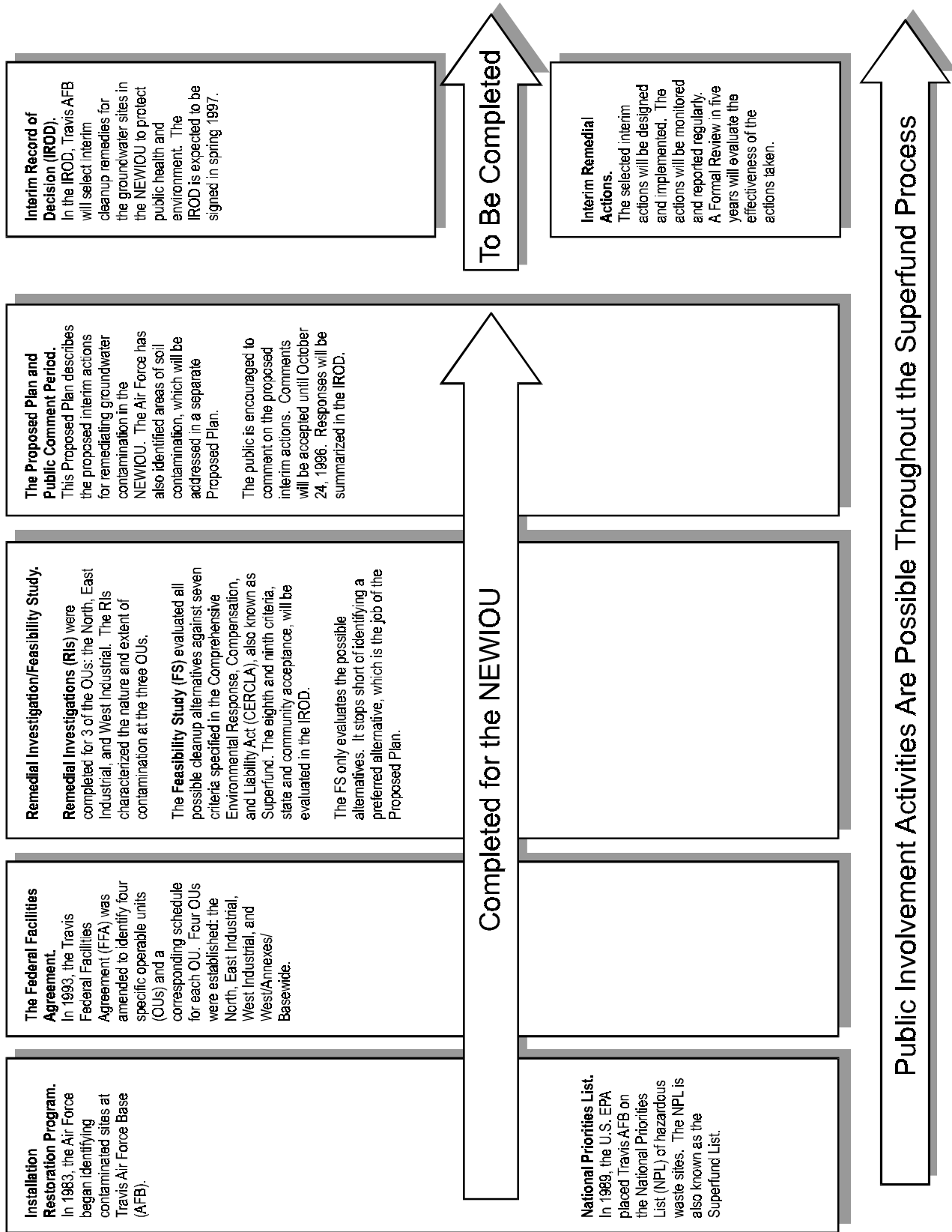


Figure 3. The Superfund Process at Travis AFB

Travis AFB on the **National Priorities List (NPL)** also known as the Superfund list. Inclusion on the Superfund list means the contaminants must be cleaned up according to certain federal and state standards and that the cleanup must follow certain procedures outlined in the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**, also known as Superfund) and supporting regulations, including this request for public comment. Figure 3 shows the CERCLA process and where Travis AFB is in that process.

Upon being placed on the Superfund list, the Air Force entered into a binding agreement with the U.S. EPA and the State of California, called the Federal Facilities Agreement (FFA). The FFA determines schedules and timelines for completing the investigation and beginning remediation of contamination at Travis AFB.

To make it easier to manage cleanup programs, Travis AFB has been divided into four OUs: the North OU (NOU), the West Industrial OU (WIOU), the East Industrial OU (EIOU), and the WABOU. **Remedial Investigations (RIs)** completed for three of the OUs (the NOU, EIOU, and WIOU) found similar types of soil and groundwater contamination in each. This similarity prompted Travis AFB to combine the schedules for the three OUs into one. This combination has allowed Travis AFB to save money and time by preparing only one FS report for the NEWIOU sites instead of three, one Proposed Plan for groundwater sites in the NEWIOU, and one IROD for groundwater.

In the NEWIOU, 15 groundwater sites were identified and targeted for possible remediation. Among these sites are areas that were used for fire training, aircraft maintenance, painting, aircraft washdowns, landfills, sewage treatment, jet fuel distribution, and sludge disposal. The primary contaminants of concern found throughout the 15 sites are **volatile organic compounds (VOCs)**, primarily a solvent known as trichloroethene (TCE); jet fuels (called “total petroleum hydrocarbons” or TPH); and nickel. A site-by-site description is shown in Table 1.

Summary of Site Risks

Currently, no **health or ecological risks** are associated with contaminated groundwater at Travis AFB because there are no exposure routes for contamination. That is, people and animals are not exposed to the contaminated groundwater because it is not used for drinking, cooking, or bathing. However, this does not mean that cleanup is unnecessary. The RI reports evaluated *potential* risks if someone were to be exposed to the groundwater, for example, if someone were to use it for drinking water or if construction work were to expose employees to contaminants in the groundwater. (In some places at Travis AFB, the groundwater table is only 5 feet below the surface.) In cases where such an exposure has been a possibility, the Air Force has taken action to prevent such an exposure from happening (see Sidebar on page 3).

Scope and Role of Response Actions

The proposed actions in this Proposed Plan are interim remedial actions for groundwater in the NEWIOU at Travis AFB. These actions will not result in increased exposure to the contamination. They will reduce the amount of contamination present in the groundwater. They will be undertaken while discussions proceed with the regulatory agencies about final cleanup levels.

For Travis AFB to proceed with a remedial action, two things are necessary: **Record of Decision (ROD)**, and funding. A ROD is signed by the Air Force and the regulatory agencies. A ROD documents how the contamination will be remediated and how clean the groundwater must be before the problem is considered resolved. To obtain funding, Travis AFB must have a legal driver, such as a ROD. But coming to agreement with the regulatory agencies on all of the details for a ROD may take a long time. In order to accelerate remedial actions while these details are worked out, Travis AFB and the agencies have agreed to proceed with an IROD at this time. An IROD will allow Travis AFB to proceed with remedial actions to address contamination and

Site	Site Name	Description	Preferred Interim Action
North Operable Unit			
LF006	Landfill 1	“Trench and burn” landfill used for disposal of base refuse, including wood, paper, glass debris, unspecified industrial waste, fuel sludges.	Alternative 2
LF007	Landfill 2	Landfill used for disposal of base refuse, including wood, paper, glass debris, unspecified industrial waste, fuel sludges.	Alternatives 2 & 3
East Industrial Operable Unit			
FT004	Fire Training Area 3	Area used for fire training exercises.	Alternative 3
FT005	Fire Training Area 4	Area used for fire training exercises.	Alternative 3
SS015	Solvent spill area and Facilities 808, 1832, and 552	Grassy area used for stripping paint from aircraft nose pieces.	Alternative 2
SS016	Oil spill area and Facilities 11, 13/14, 20, 42/1941, 139/144, and storm sewer right of way	Washrack, oil/water separator, and a cleaning and degreasing shop.	Alternative 3
SS029	Monitoring well 329 area	TCE plume of unknown origin.	Alternative 3
SS030	Monitoring well 269 area	TCE plume probably originating from TCE disposed at Building 1125.	Alternative 3
SD031	Facility 1205	Maintenance and repair of diesel-powered generators.	Alternative 3
ST032	Monitoring wells 246 and 107 areas.	Area of underground fuel line leak moved with VOC contamination from SS016.	Alternative 3
West Industrial Operable Unit			
SD033	Storm Sewer II, South Gate area, Facilities 810 and 1917, and the West Branch of Union Creek	Underground storm sewer, aircraft refurbishing area, and channelized portion of Union Creek.	Alternatives 2 & 3
SD034	Facility 811	Washrack.	Alternative 3
SS035	Facility 818/819	Aircraft repair, washing and painting facilities.	Alternative 2
SD036	Facility 872/873/876	Civil Engineering area.	Alternative 3
SD037	Sanitary sewer system, Facilities 837/838, 919, 977, 981, Ragsdale/V area, Area G ramp	Sanitary sewer, aircraft maintenance, equipment maintenance, and area near jet fuel distribution lines.	Alternative 3
<i>Alternative 2: Natural Attenuation and Monitoring</i> <i>Alternative 3: Extraction, Treatment, and Discharge</i>			

Table 1. NEWIOU Sites with Groundwater Contamination

protect human health before all of the details—such as final cleanup levels—are agreed to. The IROD will also include a five-year review for the Air Force, the agencies, and the **Restoration Advisory Board (RAB)** to evaluate how well the remedial actions are working and for the final remedial alternatives for each site to be determined.

Interim Remediation Goals

Although the final levels to which the groundwater will be cleaned up have not yet been set, certain interim goals were proposed in the NEWIOU Feasibility Study. These **Interim Remediation Goals (IRGs)** are the primary **Maximum Contaminant Level (MCL)** for each compound reported in the groundwater. The MCLs are referred to as “drinking water standards.” They have been adopted both by the California Department of Health Services, Office of Drinking Water, and by the U.S. EPA under the Safe Drinking Water Act. The primary MCLs are derived from health-based criteria and technological considerations. Drinking water MCLs are enforceable standards on water supply systems.

The interim actions for groundwater, then, will work to extract groundwater containing concentrations of contaminants that exceed their MCLs.

Summary of Alternatives

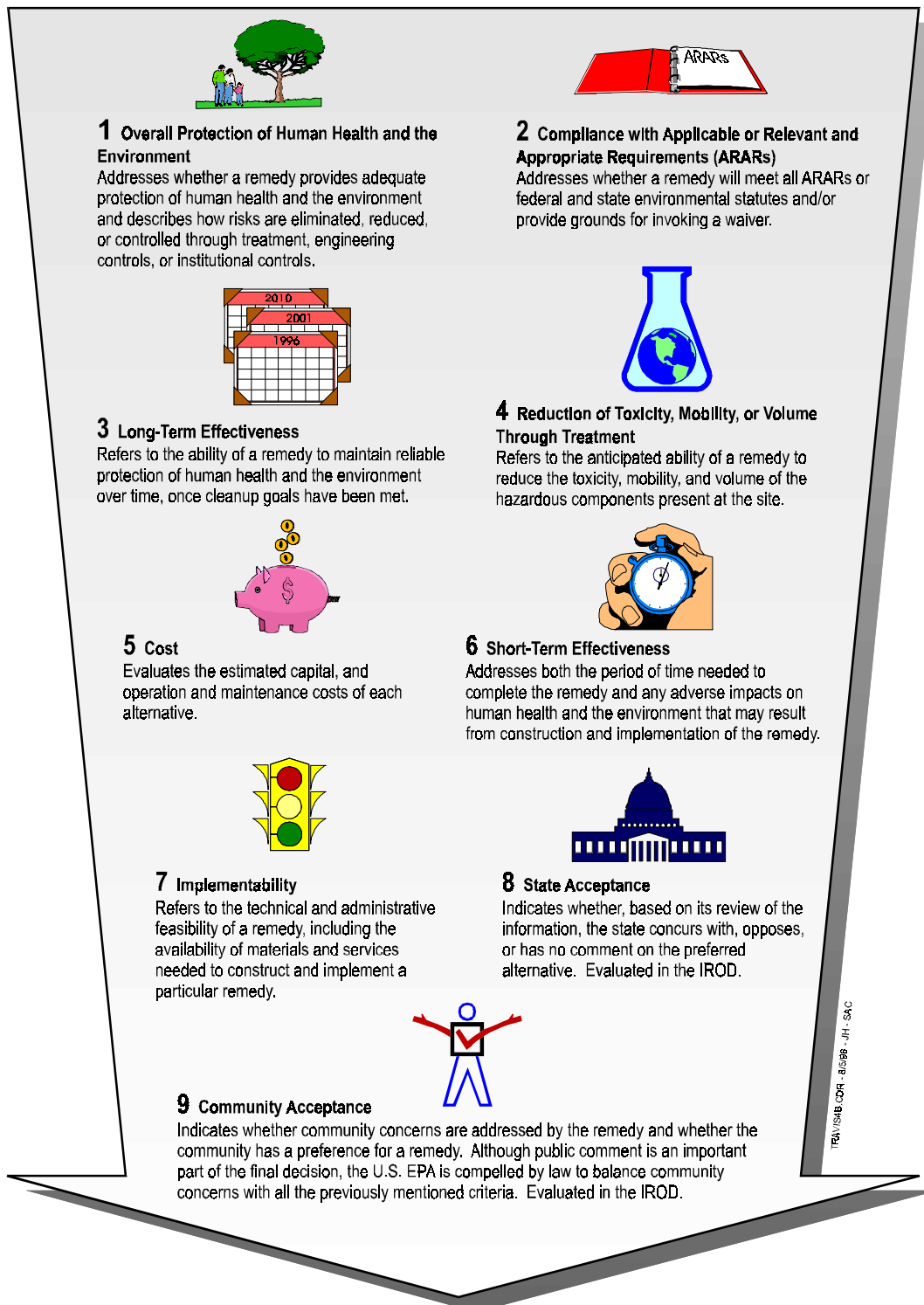
The NEWIOU FS considered the results of the RIs and evaluated all alternatives that could potentially remediate each site. For each of the 15 groundwater sites, a two-step approach was used: all possible alternatives were reviewed, and all but the most relevant were screened out. Three general groundwater interim **remedial action alternatives** were then evaluated in detail: No Action (Alternative 1), Natural Attenuation and Monitoring (Alternative 2), and Groundwater Extraction and Treatment (Alternative 3)(see Table 2).

The alternatives were evaluated using the first seven of the nine criteria established by the U.S. EPA (Figure 4). The seven EPA criteria evaluate a remedial alternative’s Overall Protection; Compliance with **Applicable or Relevant and Appropriate Requirements (ARARs)**; Long-Term Effectiveness; Reduction of Toxicity, Mobility, or Volume; Cost; Short-Term Effectiveness; and Implementability. Criteria 8 and 9, State Acceptance and Community Acceptance, have not been evaluated yet. The State of California (as represented by DTSC and the Regional Water Board) have been reviewing the preferred alternatives, along with the U.S. EPA. Comments from community members, by way of this Proposed Plan, will also be used to determine community acceptance. The U.S. EPA

Alternative	Description
1. No Action	Leaving the site as it is.
2. Natural Attenuation and Monitoring (also called Institutional Actions)	Restricting the access of groundwater and allowing contaminant concentrations to decrease naturally. Includes monitoring the site to ensure natural attenuation is taking place.
3. Extraction, Treatment, and Discharge	Extracting the contaminated groundwater with wells, treating it aboveground, and disposing of the treated water by beneficial use (such as by the on-base landscape irrigation system) or by the storm sewer or Union Creek. Includes monitoring.

Table 2. Interim Remedial Action Alternatives for NEWIOU Groundwater Sites

All remedial action alternatives are weighed against the following criteria.



Alternative 1: No Action
Alternative 2: Natural Attenuation and Monitoring.
Alternative 3: Extraction, Treatment, and Disposal for Off-Base Remediation, Source Control, and Migration Control.

Figure 4. The Nine CERCLA Criteria

is compelled by law to balance Criterion 9 with the other eight criteria, which evaluate an alternative's effectiveness and implementability. Criteria 8 and 9 will be evaluated in the IROD. Because Alternative 3 has more components to it than the other alternatives, it is explained in some detail below. A general description of all three alternatives and how they ranked follows.

Treatment Process Evaluation for Alternative 3

Alternative 3 cleans the contaminated groundwater plume by extracting (pumping out) the contaminated portion of the groundwater. The term "treatment" used in this Proposed Plan does not refer to the cleanup of the contaminated groundwater **plume**, but to the treating of contaminants so that once the contaminated groundwater is extracted, it can be properly disposed of. Overall, five types of treatment processes were evaluated as part of Alternative 3. Three treatment trains—that is, different combinations of the five processes—were evaluated to treat the primary contaminants in groundwater (VOCs and TPH). These treatment

trains include air stripping/catalytic oxidation with activated carbon, ultraviolet oxidation with activated carbon, and activated carbon alone (see Table 3). Because treatment of metals (specifically, nickel) may be needed at some sites, another process, ion exchange, was also evaluated in the FS.

At two groundwater sites (ST032 and SD034), pure fuel product is floating on the groundwater surface. The floating product will be extracted and recycled (Bioslurping, Recovered Product Recycling, and Offgas Catalytic Oxidation).

For all 15 sites, the evaluation of Alternative 3 included an evaluation of the different combinations of the five processes. All of the treatment trains ranked equally in terms of U.S. EPA Criteria 1, 2, 3, 4, 6, and 7 (Table 4). Only the ranking for the fifth criterion, costs, varies for each treatment train (Table 5). The costs vary among sites because each site has different combinations of contaminants, different concentrations of contaminants, and different amounts of affected groundwater. Actual costs may be less.

Treatment Process	Description
Air stripping	Contaminated water is aerated to transfer VOCs from the water to the air. The contaminated air is then treated by another process, such as catalytic oxidation.
Catalytic oxidation (catox)	A process that uses a special patented catalyst to convert VOCs in air to carbon dioxide, water, and hydrochloric acid. The off-gases from catox must also be treated to remove the hydrochloric acid.
Ultraviolet oxidation	A process that uses ultraviolet light and hydrogen peroxide to destroy VOCs in water.
Ion Exchange	A process that uses resins to remove metals from water. Can be used before or after air stripping but must be used before carbon treatment.
Activated carbon	Contaminated water is passed through charcoal filters. The contaminants stick to the charcoal, which can later be regenerated to remove the contaminants. Can be used alone or to "polish" water from other treatment processes. Also called "GAC" for granular activated carbon.

Note: These treatment processes are being evaluated for Alternative 3

Table 3. Treatment Processes Evaluated in the Feasibility Study

	Criterion 1	Criterion 2	Criterion 3	Criterion 4	Criterion 6	Criterion 7
Alternative	Overall Protection of Human Health and the Environment	Compliance with Laws and Regulations (ARARs)	Long-term Effectiveness and Permanence	Reduction of Toxicity, Mobility, and Volume through Treatment	Short-term Effectiveness	Implementability
No Action (Alternative 1)	Does not protect human health or the environment	Does not comply with ARARs	No long-term effectiveness	No reduction from action	No short-term effectiveness	Easily implemented; no equipment needed
Natural Attenuation and Monitoring (Alternative 2)	Provides some protection of human health	Will meet ARARs in long term	Will have long-term effectiveness from natural attenuation	No reduction from action	No short-term effectiveness	Easily implemented; Minor equipment needed
Extraction, Treatment, and Disposal (Alternative 3)	Protects human health and environment in the long term	Will meet ARARs in the long term (sooner than Alternative 2)	Most effective at removing contamination	Will reduce contaminant (volume)	Short-term effectiveness depends on removal rate	Technology is implementable but does require effort to maintain system and will have some effect on base operations

Table 4. CERCLA Evaluation for All Groundwater Sites

Site	Alternative 1 No Action	Alternative 2 Natural Attenuation and Monitoring	Alternative 3 Extraction, Treatment, and Discharge
FT004	0	90	1,200 (910 + 280)
FT005	0	90	2,100 (1,800 + 260)
LF006	0	90	700 (640 + 61)
LF007B	0	90	620 (550 + 72)
LF007C	0	90	510 (450 + 58)
LF007D	0	90	2,000 (1,800 + 220)
SS015	0	90	870 (750 + 120)
SS016	0	90	10,000 (9,300 + 900)
SS029	0	90	1,800 (1,600 + 170)
SS030	0	90	570 (490 + 78)
SD031	0	90	750 (620 + 130)
ST032	0	90	2,300 (2,000 + 280)
SD033	0	90	2,400 (2,300 + 140)
SD034	0	90	460 (380 + 79)
SS035	0	90	240 (190 + 54)
SD036	0	90	910 (800 + 110)
SD037	0	90	2,800 (2,600 + 210)

Notes: Costs for the Extraction alternative include the cost to build the system and one year of operating the system.

**Table 5. Cost by Treatment Alternative
(in Thousands of Dollars)**

There are no costs associated with Alternative 1, No Action. For purposes of comparison, a constant level of monitoring was assumed for Alternative 2, **Natural Attenuation and Monitoring**, and for all of the treatment options evaluated as part of Alternative 3, Groundwater Extraction and Treatment.

Because each of the treatment options ranked as equally effective in treating the extracted groundwater, no one treatment option has been selected. Rather, the selection of a treatment option for each specific site will depend on the costs, which will, in turn, depend on the volume and contaminant concentration of the extracted groundwater. The selection of treatment plant

locations will be made during the remedial design stage following the signing of the IROD. Also, as concentrations change over time, a different treatment technology may become more appropriate or cost-effective. For example, catox may be more cost-effective in treating groundwater with higher concentrations of contaminants, but as the concentrations decrease over time, activated carbon may become more cost-effective for treating the same contaminants. By keeping all the treatment options or tools available, the most appropriate process for the changing conditions can be selected from this “toolbox” of treatment options.

Selection of the Preferred Interim Alternatives

Rather than selecting one preferred interim alternative for all 15 sites, Travis AFB proposes to select different preferred interim alternatives to individual sites as shown on Figure 5 and Table 1. To select the preferred interim alternative for each site, the risk assessment from the RI, the site’s proximity to a potential route of exposure to human or animals, and the

FS evaluation criteria were considered. Because the preferred alternative is an interim action, selection depends heavily on balancing the cost of an alternative (U.S. EPA Criterion 5) against the presence of an actual or potential exposure route. None of the groundwater beneath the base is pumped for water supply, thus there is currently no exposure from drinking or using the groundwater on base.

Alternative 1: No Action

The No Action alternative is not proposed for any site because it does not meet any of the criteria for reducing contamination or protecting human health or the environment.

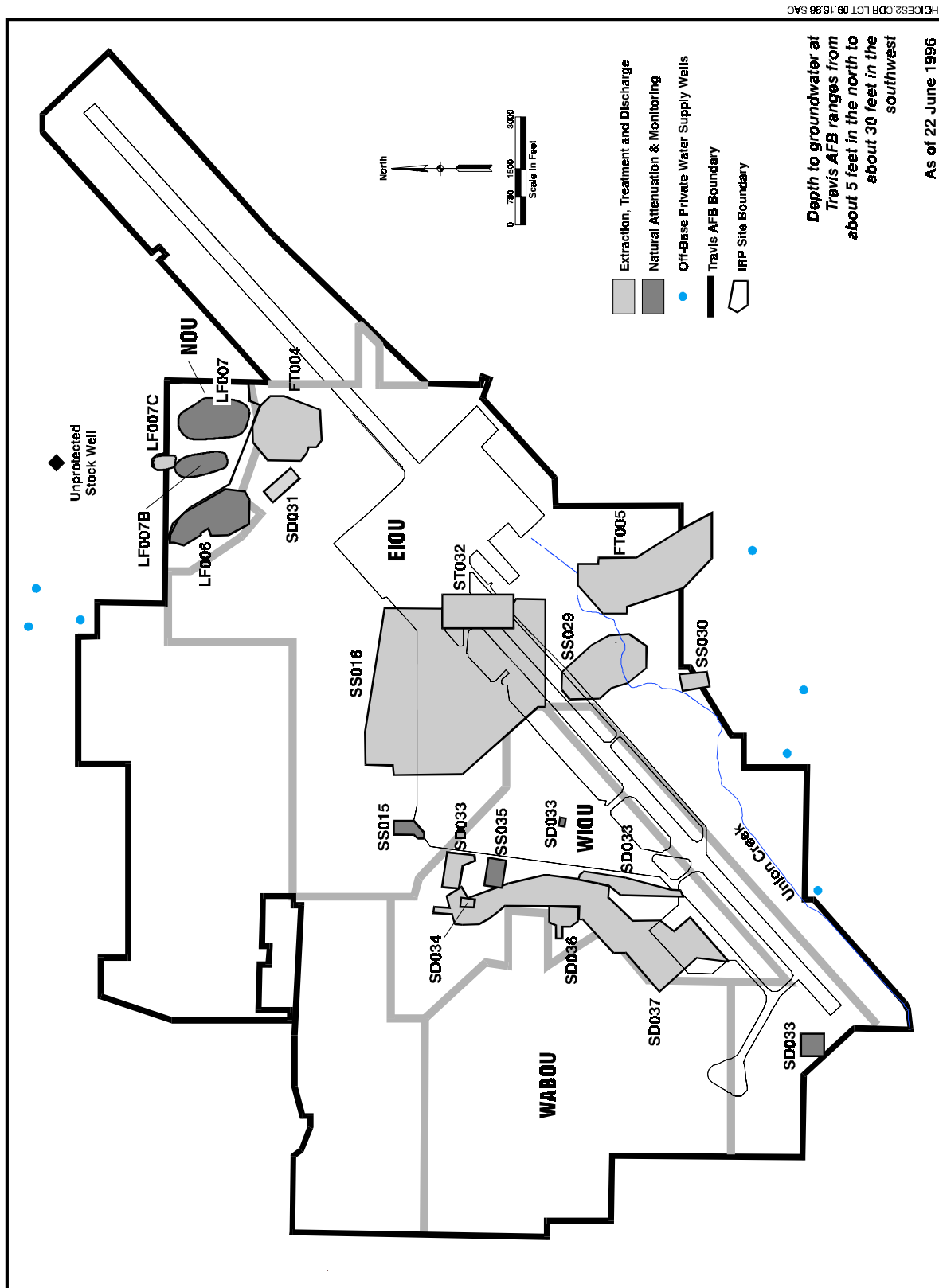


Figure 5. Travis AFB Preferred Interim Action for NEWIOU Sites with Groundwater Contamination

Alternative 2: Natural Attenuation and Monitoring Sites

For eight sites or portions of sites (LF006, SS015, SS035, two areas of LF007, and three small isolated parts of SD033), the preferred interim alternative is Alternative 2, Natural Attenuation and Monitoring. These sites are located in the interior of the base, away from surface waters, or have shown only isolated, irregular detections of contaminants. Although this alternative ranked lower than Alternative 3 in terms of effectiveness, there are no existing or potential exposure routes at these sites, so human health and the environment are protected. In addition, this is the lowest cost alternative that balances costs (of monitoring) with an actual exposure (now or in the future). Groundwater at the sites will be monitored to determine natural attenuation rates and to be sure that the groundwater does not move to a location where someone could be exposed to it.

Alternative 3: Extraction, Treatment and Discharge Sites

For 12 sites, the proposed interim action is Alternative 3, Extraction, Treatment and Discharge, based on the site conditions. These sites were selected because they fell into one or more of the following groups.

Sites Where Contaminants Have Migrated Off-Base (Off-Base Remediation): LF007C, FT005, SS030

For the three sites where groundwater contamination extends off-base, there is a potential for exposure if a property owner were to drill a well into the affected groundwater. Travis AFB cannot restrict use of groundwater off-base, so, to remove this potential route, the contaminated groundwater will be remediated using Alternative 3, Extraction, Treatment and Discharge.

Sites with High Concentrations of Contaminants (Source Control): FT004, SS016, SS030, SD031, ST034, SD036, SD037

The second group of sites where Extraction, Treatment and Discharge is the preferred alternative is the group of sites with high

concentrations of contamination (greater than 3,000 ppb). High concentrations of contaminants may indicate a large mass of contamination (a source) that could continue to degrade groundwater. Extracting this source of contamination is more cost-effective than trying to extract a larger **plume** of contaminated groundwater with lower contaminant concentrations; therefore, Extraction, Treatment and Discharge is the preferred alternative.

Sites Near Exposure Routes (Migration Control): FT005, LF007C, SS016, SS029, SS030, SD033, SD034, SD036, SD037

The third group of sites where Alternative 3 is proposed is sites on base near a creek or storm sewer, where there is a possibility that the contaminated groundwater could affect the surface water. If contaminated groundwater entered the creek or storm sewer, which is more accessible to people, exposure could occur. To prevent this, migration of the contaminated groundwater will be controlled using Extraction, Treatment and Discharge.

In addition, migration control will be used at the three sites where groundwater extends off-base to prevent future migration.

Where Do We Go From Here?

The Air Force will make a final decision on an interim remedy for groundwater contamination based on the RI/FS, other site-related reports contained in the Administrative Record, and public and state acceptance. Public acceptance will be indicated by comments received during the public comment period for this Proposed Plan (25 September 1996 to 24 October 1996). The decision will be documented in the IROD, which will include a Responsiveness Summary that addresses public comments received during the public comment period. The Air Force expects to sign the IROD by mid-1997. The IROD will be available for review at the Information Repository (see back cover), and the Air Force will inform the public of the selected interim actions by way of announcements in local newspapers.

Once the interim actions are implemented, periodic review of actions and effects on contamination will be conducted, and the results submitted to the regulatory agencies and the RAB, including a five-year formal review. Then, the final actions and cleanup levels can be selected in a ROD.

Glossary

ARARs - Applicable or Relevant and Appropriate Requirements. All of the laws or regulations that may apply to a remedial action, for example, air emissions regulations for a groundwater treatment system.

CERCLA - Comprehensive Environmental Response, Compensation and Liability Act, also known as Superfund.

Groundwater - Underground water fills spaces between particles of sand, soil, gravel or openings in rocks. When groundwater occurs in enough quantity, it can be used as a source of water supply.

Health Risk - The potential for a person to develop a disease or other adverse health effect as a result of exposure to a contaminant. This risk is generally expressed in terms of a probability, such as one in one million (or 1×10^{-6}). For plants and animals, the term "ecological risk" is used.

Information Repository - A storehouse where members of the public may review IRP documents. Usually, Information Repositories are located at libraries or other public locations.

Installation Restoration Program (IRP) - The Air Force's program to address contamination in the environment.

Interim Action - An action taken to clean up the environment before the final remedial actions are decided upon.

Interim Record of Decision (IROD) - A public, legally binding document explaining cleanup alternative(s) that will be used at a site until the final remedy is selected. The IROD is based on information and technical analyses generated

during the remedial investigation/feasibility study and consideration of public comments and community concerns.

Interim Remediation Goal (IRG) - The performance goals for specific contaminants, developed in the RIs and used in the NEWIOU FS. IRGs are not cleanup levels, but are based on regulation and are consistent with general and specific cleanup objectives.

National Priorities List (NPL) - The Superfund list.

Natural Attenuation and Monitoring - A cleanup alternative. No equipment is used to cleanup contamination; instead, the contaminants are degraded (broken down) into harmless components by microbes that naturally live in the subsurface. The contamination is monitored to ensure breakdown occurs and contaminants do not migrate. Additional institutional actions are usually taken to prevent exposure (for example, administrative controls to restrict excavations in contaminated areas).

NEWIOU - The North, East Industrial, and West Industrial Operable Units at Travis AFB. Collectively, these three OUs are referred to as the NEWIOU.

Operable Units - At Travis AFB, an Operable Unit is a geographic area investigated as one entity. Operable Units may address geographic portions of a site, types of operations, specific site problems, or the initial phase of an action.

Plume - One or more contaminants dissolved in a certain volume of groundwater, that migrates from a source in the same direction as the flow of the groundwater.

Parts Per Billion - Units commonly used to express low concentrations of contaminants. For example, one drop of TCE in an Olympic-sized swimming pool is about 1ppb.

RAB - Restoration Advisory Board.

Record of Decision (ROD) - A public, legally-binding document explaining cleanup alternatives (see IROD). The ROD differs from the IROD by

documenting the final cleanup levels—that is, how clean the groundwater must be before contaminant problems are considered resolved.

Remedial Action Alternative - A combination of remedial action technologies that will clean up or mitigate site-specific contamination problems.

Remedial Investigation/Feasibility Study - The investigation phase of the Superfund process. The Remedial Investigation examines the nature and extent of site contamination; the Feasibility Study identifies and evaluates alternatives for addressing the contamination.

Remediate - Clean up or contain contamination.

Site - In Superfund terms, a “Site” with a capital “S” is a facility of any kind where contamination is present as a result of a release of hazardous material from the facility. Thus, Travis AFB is the Superfund Site. The term “site” with a small “s” generally means a specific location or facility within the Site where contaminants have been released to the environment.

Volatile Organic Compounds (VOCs) - Carbon-containing compounds (that is, organic compounds) that evaporate readily at room temperature. One example is the solvent TCE. VOCs are commonly used in electronics manufacture, metal degreasing, and dry cleaning.

Whom to Contact for More Information

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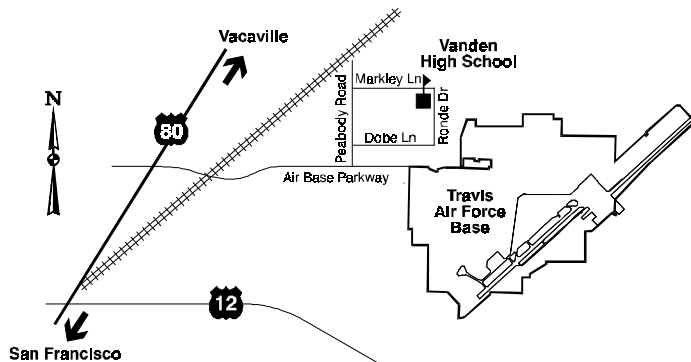
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Travis AFB Public Meeting

7:00 p.m. - 17 October 1996

Vanden High School
2951 Markley Lane
Fairfield, California



Location of Information Repository

Vacaville Public Library

1020 Ulatis Drive

Vacaville, Ca 95688

Mon. & Thurs. 12 – 9 Tues. & Wed. 10 – 6

Sat 10 – 5 Closed Friday

(707) 449-6290



Dixie Porter, Public Affairs

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