



Hill Air Force Base, Utah

Environmental Restoration Management Action Plan—2001

September 2002

**Environmental Restoration Management
Action Plan
for
Hill Air Force Base, Utah**

SEPTEMBER 2002

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List of Acronyms

ACL	Alternate Concentration Limit
ACM	Asbestos Containing Material
A-E	Architect-Engineer
AFB	Air Force Base
AFCEE	Air Force Center for Environmental Excellence
ANSC	Areas of No Suspected Contamination
AO	Approval Order
AOC	Areas of Concern
ASC	Abatement and Site Characterization
AST	Aboveground Storage Tank
ARAR	Applicable or Relevant and Appropriate Requirement
ATSDR	Agency for Toxic Substances and Disease Registry
CAP	Corrective Action Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CRP	Community Relations Plan
CWA	Clean Water Act
DCA	Dichloroethane
DCE	Dichloroethene
DD	Decision Document
DERP	Defense Environmental Restoration Program
DNAPL	Dense Non-Aqueous Phase Liquid
DOD	Department of Defense
DRMO	Defense Reutilization Marketing Office
ECAMP	Environmental Compliance and Management Program
ECS	Environmental Construction Service
EIMS	Environmental Information Management System
EM	Environmental Management Directorate
EMC	Environmental Management Directorate, Compliance Division
EMR	Environmental Management Directorate, Restoration Division
EMP	Environmental Management Directorate, Pollution Prevention and Planning Division
EOD	Explosive Ordnance Disposal
ERPIMS	Environmental Restoration Program Information Management System
EPA	United States Environmental Protection Agency
EPC	Environmental Protection Committee
ERP	Environmental Restoration Program
°F	Degrees Fahrenheit
FFA	Federal Facilities Agreement
FS	Feasibility Study
FY	Fiscal Year
GIS	Geographical Information System
GWP	Utah Ground Water Protection Program
Hill AFB	Hill Air Force Base
HMMS	Hazardous Materials Management System
IAG	Inter-Agency Agreement
ICBM	Intercontinental Ballistic Missile
IRA	Interim Remedial Action
IRA-C	Interim Remedial Action-Construction
IRA-O	Interim Remedial Action-Operation
IRP	Installation Restoration Program
IRPIMS	Installation Restoration Program Information Management System

IWTP	Industrial Wastewater Treatment Plant
LAN	Local Area Network
LNAPL	Light Non-Aqueous Phase Liquid
LTM	Long Term Monitoring
LTO	Long Term Operations
MAP	Management Action Plan
MCL	Maximum Contaminant Level
NA	Not Applicable
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
ND	No Document
NDCSD	North Davis County Sewer District
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFRAP	No Further Response Action Planned
NP	Not Prioritized
NPL	National Priority List
O&M	Operation & Maintenance
OO-ALC	Ogden Air Logistics Center
OU	Operable Unit
PA	Preliminary Assessment
PA/SI	Preliminary Assessment/Site Inspection
PCB	Polychlorinated Biphenyl
PCE	Perchloroethelene (Tetrachloroethene)
POTW	Publicly-Owned Treatment Works
PP	Proposed Plan
RA	Remedial Action
RA-O	Remedial Action-Operation
RAB	Restoration Advisory Board
RAC	Remedial Action Construction
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RD/RA	Remedial Design/Remedial Action
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act
SVE	Soil Vapor Extraction
TCA	Trichloroethane
TCE	Trichloroethene
TIS	Technical Information System
TPH	Total Petroleum Hydrocarbons
TSCA	Toxic Substances Control Act
UDEQ	Utah Department of Environmental Quality
UDERR	Utah Department of Environmental Quality/Division of Environmental Response and Remediation
UDOH	Utah Department of Health
µg/l	micrograms per liter (approximately equivalent to parts per billion)
Unkn	Unknown
UPDES	Utah Pollution Discharge Elimination System
UST	Underground Storage Tank
UTTR	Utah Test and Training Range
WAFAP	Wendover Air Force Auxiliary Field



Section 1

1.0 INTRODUCTION

As part of its program at Hill AFB, the Environmental Management Directorate, Restoration Division created this Management Action Plan to summarize the status, schedules, issues, and future actions for the many sites under its Installation Restoration Program. The document is updated annually and has been prepared for use by Air Force personnel, members of the public, the regulatory community, and Air Force contractors.

1.1 PURPOSE

The Environmental Management Directorate, Restoration Division at Hill Air Force Base (abbreviated as EMR and Hill AFB, respectively) is responsible for implementing the investigation and restoration (i.e., cleanup) of former waste disposal, storage, and spill sites at Hill AFB; these actions represent the overall objectives of the Department of Defense's Installation Restoration Program (IRP). The Hill AFB program addresses numerous sites at the Base and other Air Force facilities including the Utah Test and Training Range (UTTR), Wendover Air Force Auxiliary Field (WAFAP in Utah and Nevada), and the Little Mountain Test Annex (LMTA). The locations of Hill AFB and its affiliated facilities are shown on Figure 1-1. The Air Force owns or leases other properties in Utah and Wyoming, however no historic environmental problems have been identified at these locations.

This Management Action Plan (MAP) presents the status of EMR's restoration efforts and reviews the strategy and schedule for implementing the IRP objectives. The MAP also identifies present and future issues and actions that the EMR Program Team will address to insure the success of the restoration program (refer to Appendix B for a listing of the EMR Program Team members). This document is updated every year to provide Air Force personnel, members of the public, regulatory community members, and contractors with up-to-date information regarding the Hill AFB IRP.

Sections 1.2 and 1.3 review the mission of the Environmental Management Directorate, its overall organizational structure, and the mission and vision of EMR. The mission and vision of EMR are implemented through meeting the Hill AFB IRP objectives which are presented in Section 1.4.

1.2 ENVIRONMENTAL MANAGEMENT DIRECTORATE

The Environmental Management Directorate (EM) at Hill AFB is charged with the following mission:

EM Mission:

To support industrial processes and manage environmental resources at Hill AFB and its properties by using effective, proactive management practices which focus integrated stewardship, new technology, and individual responsibility on past, present and future environmental needs.

To accomplish this mission, EM has developed specific strategies and an organizational structure that address responsibilities for all of its personnel, contractors, and representatives in other directorates at Hill AFB. As outlined above, EM's focus is on past, present and future environmental needs of the Base and is reflected in the organizational structure as presented in Figure 1-2.

1.3 RESTORATION DIVISION MISSION AND VISION

To help fulfill EM's mission, EMR is charged with implementing its own mission and vision:

EMR Mission:

The mission of EMR is to execute environmental restoration activities in accordance with applicable laws and regulations and within the scope of the Air Force mission. These activities will serve the public interest by protecting human health and the environment, reducing potential risk to affected populations, involving stakeholders in the decision-making process, and wisely using limited taxpayer resources.

Figure 1-2. Environmental Management Directorate



EMR Vision:

Through a desire for excellence, EMR pursues the following to accomplish its mission:

- *Achieve results through a proactive approach*
- *Assert leadership in the environmental field*
- *Accept responsibility for their stewardship*
- *Earn the trust of those with whom they work*
- *Challenge the boundaries of technology.*

The EMR strategy for implementing its mission is to focus on integrating, prioritizing, and optimizing appropriate response actions at Hill AFB and its off-Base properties in accordance with the IRP.

1.4 IRP OBJECTIVES

EMR's specific IRP objectives are as follows:

- *Protect human health and the environment.*
- *Maintain a Restoration Advisory Board (RAB) to provide a forum for restoration stakeholders to provide recommendations and to advise Hill AFB of stakeholder concerns.*

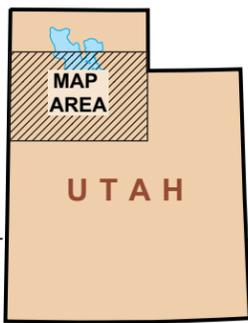
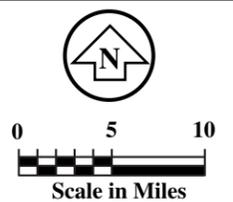
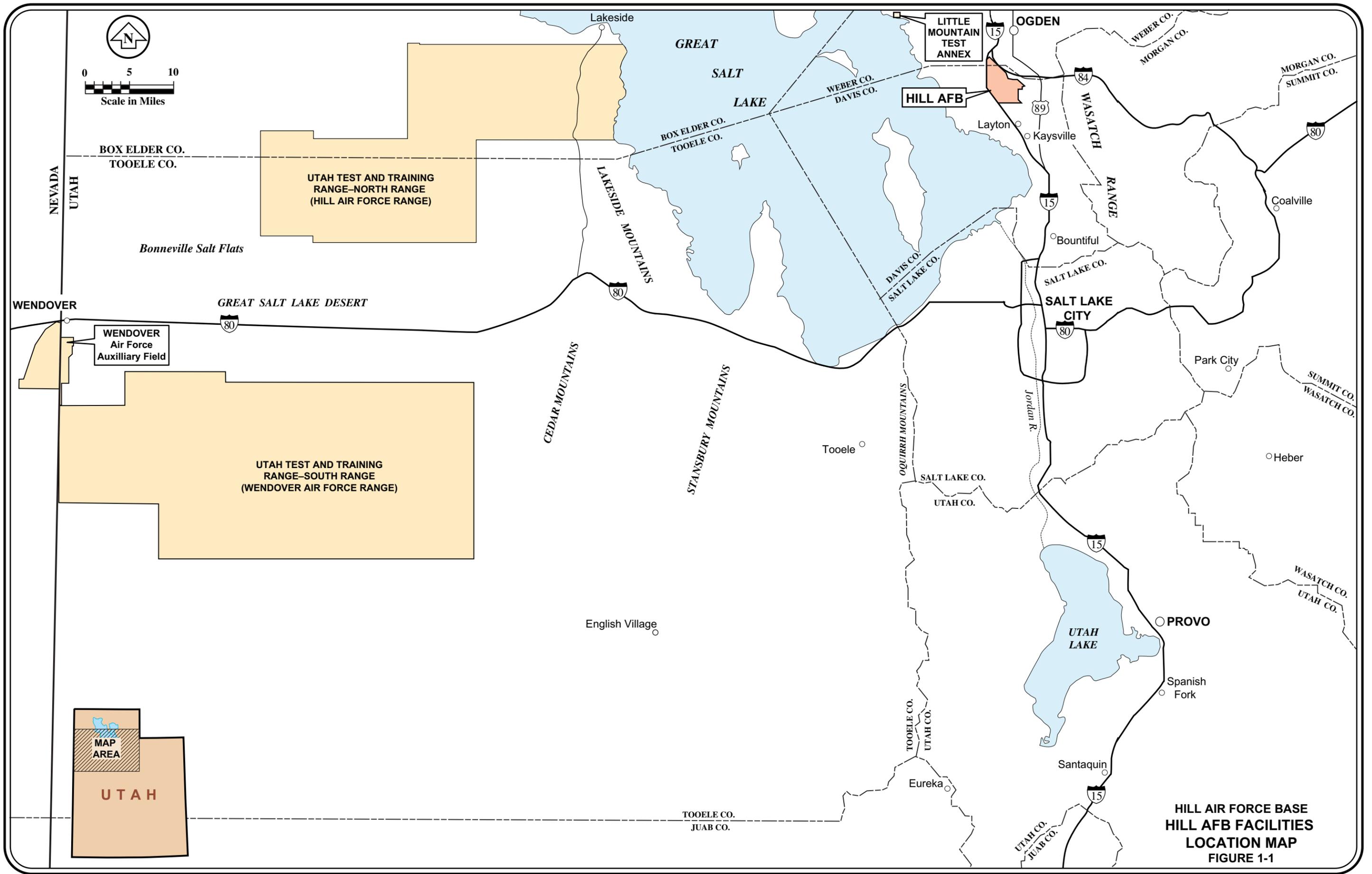
- *Conduct all IRP activities in a manner consistent with Section 120 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA).*
- *Meet Federal Facility Agreement (FFA) deadlines and commitments.*
- *Establish priorities for environmental restoration activities by focusing on highest potential risk sites.*
- *Provide a cooperative environment to facilitate partnerships with researchers and technology vendors to demonstrate technologies that will improve cleanup efficiency and reduce costs.*
- *Maintain a current understanding and documentation of the environmental condition of Hill AFB and its off-Base properties.*
- *Evaluate and understand potential risks posed by contaminated sites.*

- *Complete studies as soon as practicable for each site and implement cleanup activities.*
- *Develop, screen, and select remedial actions that reduce potential risks and meet cleanup standards.*
- *Implement early cleanup actions when appropriate.*
- *Implement selected remedial actions to control, eliminate, or reduce potential risks to manageable levels in source areas.*
- *Operate remediation systems to optimize performance, reduce cost, achieve remediation goals and site closure as soon as practicable.*
- *Manage resources and conduct remedial actions in a fiscally responsible manner.*

- *Continue to implement an effective community relations program.*

Through the Restoration Team, Hill AFB's environmentally contaminated sites are moving towards remedial actions and site closure. A few of these sites will require long duration (many decades) of cleanup activities; others have and will be restored and closed quickly. Throughout the remainder of this document, the status of the restoration program is reviewed in Section 2.0 while Section 3.0 presents the strategies that EMR uses to attain site cleanup, and Section 4.0 reviews current issues that face the program and actions that are underway to better manage the restoration of all environmentally contaminated sites at Hill AFB.

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**HILL AIR FORCE BASE
HILL AFB FACILITIES
LOCATION MAP
FIGURE 1-1**



Section 2



2.0 RESTORATION PROGRAM STATUS

The IRP activities at Hill AFB are managed by EMR under several regulatory programs and in compliance with a Federal Facilities Agreement signed in 1991. Hill AFB is investigating and cleaning up 31 of the sites under CERCLA and 75 under other regulatory programs (such as UST, CWA, RCRA and TSCA). Of the 106 IRP sites, 82 have cleanup actions underway, completed, or are in long-term monitoring. In addition, EMR has a comprehensive community involvement program, composed of a Restoration Advisory Board, a Community Relations Plan, a quarterly newsletter, and other project-specific programs.

2.1 INTRODUCTION

This section provides information on the history of Hill AFB, the past and present regulatory framework within which the IRP operates, the status of the IRP program, and interactions between the Air Force and the communities surrounding the Base.

2.2 HISTORICAL OVERVIEW OF HILL AFB

From its beginning in 1920 as an Army reserve depot, Hill AFB has supported numerous Army and later Air Force missions. The installation was originally designated as the Ogden Arsenal which supported manufacture and storage of munitions during World Wars I and II and later served as a storage and distribution depot for vehicles, artillery, small arms, parts, and supplies. Between 1940 and 1955, the Arsenal underwent extensive expansion and development, most notably the construction of four 7,500-foot runways, which began an era of aircraft maintenance. In 1955, the Ogden Arsenal was transferred from the U.S. Army to the U.S. Air Force. This nearly doubled the area of Hill AFB to its present size of approximately 6,700 acres and added approximately 600 buildings and structures to the Base.

To accommodate growth at Hill AFB, the facility was modernized, and a 13,500-foot long runway was completed in 1957. Hill AFB subsequently was assigned assembly and managerial responsibility for the SM-80 Minuteman Intercontinental Ballistic Missile (ICBM) and was designated as the System Support Manager for the F-4C tactical fighter. In 1965, Hill AFB received logistics and management responsibilities for the ICBM system, which included both the Minuteman and Titan missiles. In 1976, Hill AFB was designated the System and Maintenance Manager for the new F-16 multi-national fighter and services the C-130 Hercules transport aircraft. At different times, Hill AFB has been assigned the maintenance of the F-84, F-101, and F-102 aircraft. In 1998 Hill AFB was assigned the B2 composite mission and maintenance of the A-10 aircraft.

The civilian and military work force at Hill AFB has fluctuated from greater than 20,000 during World War II to 10,000 to 15,000 personnel during the 1950s and 1960s. As of this writing, the work force consists of approximately 15,000 military and civilian personnel.

To support the past and present operations at Hill AFB, a variety of on-Base industrial operations have been established for aircraft, missile, vehicle, and railroad engine, maintenance and repair (i.e., metal plating, degreasing, paint stripping, painting, sounding, and other operations). These industrial operations used or generated numerous chemicals and wastes, including chlorinated and non-chlorinated solvents and degreasers, fuels and other hydrocarbons, acids, bases, and metals. These chemicals and their associated waste products were historically disposed of at the Industrial Wastewater Treatment Plant (IWTP), in chemical disposal pits, or in landfills on the Base or at other Air Force facilities. Figure 2-1 presents a summary of the historical operations conducted at Hill AFB and the types of hazardous materials and wastes that may have been associated with these activities.

2.3 REGULATORY FRAMEWORK

2.3.1. Regulatory History

As far back as the late 1970s, Hill AFB made compliance with applicable environmental regulations a priority in its Base operations. During the 1970s and early 1980s, environmental issues became apparent across the nation due to a poor understanding of the consequences of previously accepted waste handling and disposal practices. In response to this heightened awareness, the Air Force initiated a Preliminary Assessment/Site Inspection (PA/SI) type evaluation of all of its installations. At Hill AFB, this effort resulted in the identification of several of the worst IRP sites in terms of their potential impact to the environment. In 1984, the Base received a cease and desist order from the Utah Department of Health (UDOH) due to exposed contaminated soil and ground-water seeps along the northern margin of the Base adjacent to and on private property. This prompted the installation of remedial and containment systems at Landfills 3 and 4, and Chemical Disposal Pits 1 and 2. Additional containment measures in the form of an engineered cap were taken near the South Gate area at a former storm and wastewater pond (Berman Pond). All of these early actions were taken to reduce the potential risk of exposure to humans and livestock. Since 1984, the Air Force has committed significant resources to assess and remediate the environmental contamination at Hill AFB.

Hill AFB has conducted most of its environmental restoration activities under the Federal Facility Agreement (FFA) that was signed in April of 1991 by the Air Force, U.S. Environmental Protection Agency Region VIII (EPA), and the Utah Department of Environmental Quality (UDEQ, formerly the UDOH). The FFA identifies the process for investigating and restoring areas of the Base that have documented soil and ground-water contamination. The FFA was signed pursuant to numerous authorities under relevant regulatory jurisdictions, including but not limited to CERCLA, RCRA, National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Clean Water Act (CWA), National Environmental Policy Act (NEPA), and the Department of Defense's Environmental Restoration Program (ERP; formerly DERP)

Under the terms of the FFA, the Air Force agreed to undertake, seek adequate funding for, fully implement, and report on all investigative, design, and the construction and operation of remedial actions. In addition, similar commitments were made to meet the requirements for site health assessments (per the Agency for Toxic Substance and Disease Registry [ATSDR]) and RCRA Corrective Actions. All parties to the FFA also agreed to deadlines set forth in the agreement for the submittal and review of draft and final primary documents for the FFA sites. These sites were organized into Operable Units originally on the basis of geographic location; later additions and revision resulted in designating some OUs based on the type of contaminated media.

As part of its public participation and community involvement activities, Hill AFB maintains an Administrative Record containing copies of all technical FFA documents. This record is stored in the EM offices at Hill AFB. An information repository is maintained at the Davis County Library in Layton, located south of the Base to provide easier access to the public.

In addition to the commitments described above for the sites defined in the FFA, the Air Force also agreed to take similar actions in accordance with RCRA at sites with documented releases from other types of sites. These include Underground Storage Tanks (USTs), areas included under RCRA operating permits that require corrective actions, and sites that are regulated under other programs. This commitment also applied to other miscellaneous sites (such as Polychlorinated Biphenyls [PCBs]) that warrant investigation because there is the potential for risks to exist that may affect human health or the environment. Locations of the Base's UST sites are provided on Figure 2-2; these and other sites are reviewed in Section 2.4.

In practice, additional sites are not incorporated into the FFA until the PA/SI process is complete and verifies that the sites pose a potential risk to human health or the environment. The FFA and additional IRP sites are identified and summarized below.

2.3.2. Current Regulatory Framework

Since 1991, Hill AFB has conducted activities under its IRP in close coordination with all parties to the FFA. At present, there are projects in progress under the guidance of CERCLA, RCRA, the Toxic Substances Control Act (TSCA), CWA, and UST regulations. The Base has and will continue to coordinate its efforts with appropriate personnel from federal, state, and local regulatory agencies.

In general, it is the practice of Hill AFB to involve all interested regulatory agencies in the review process for sites in the IRP. Examples include PA/SI efforts for over 600 Areas of Concern (AOCs) both on-Base and at the UTTR-North and UTTR-South. Close coordination between RCRA and CERCLA regulatory agencies allowed for systematic and thorough evaluations of the AOCs. These joint efforts have covered investigative planning, assessment of results, quantification of risk-based action levels, and efforts to consolidate contaminated areas according to media or geographic location. To further the teamwork between itself and regulatory agencies, Hill AFB is developing an agreement with UDEQ and EPA for the Air Force to be the lead agency for future investigative and cleanup actions at the UTTR, WAFAP, and LMTA.

2.4 ENVIRONMENTAL CONDITION OF PROPERTY

The status of the IRP at Hill AFB is summarized in Table 2-1; the table shows the number of IRP sites at each stage of investigation and cleanup. As indicated in Table 2-1, 86 of the 106 IRP sites have completed the necessary studies and are in either remedial design or remedial action phases or have No Further Response Action Planned (NFRAP). To provide a graphical appreciation of the program's status, Figure 2-3 has been prepared to summarize the current status or understanding of the environmental condition of property across the Base; the numerous color codes are defined in the figure. In addition, Figures 2-4 and 2-5 provide more detailed information on soil and ground-water contamination as well as information on what remedial actions are either in progress or have been completed. Each of these figures has been prepared based on current information and is intended to present the most up to date understanding of environmental conditions on and surrounding Hill AFB. To facilitate review of all 106 IRP sites, the sites have been separated into "active" and "no further response action planned" (NFRAP) sites based on potential risks and current activities. Table 2-2 summarizes the status of all

current and planned NFRAP sites; these include most of the UST and CWA sites at the Base, UTTR, and LMTA. UST site locations are presented in Figure 2-2 for Hill AFB only; there are additional sites that at the UTTR and LMTA that have not been depicted graphically. Active sites are summarized for easy reference through the use of a series of IRP site fact sheets (Figures 2-6a through 2-6ss). Each fact sheet provides information regarding the location, history, status, schedule, and future for each individual or grouping of IRP sites. In most cases, one fact sheet corresponds to an OU or a geographic area of an OU.

The following paragraphs review the status of remedial efforts at Hill AFB and its major off-Base properties. In addition, Appendix C (Decision Documents and Records of Decision) and Appendix D (Remedial Actions, Interim Actions, and Technology Demonstrations) provide more information regarding the status and past remedial activities for a majority of Hill AFB's IRP sites. Hill AFB manages 75 other smaller properties in Utah, Nevada, and Wyoming that host activities ranging from recreation to radar sites to seismic research. However, because none of the 75 sites currently has any suspected or documented environmental issues, they are not addressed further in this document.

2.4.1. Hill AFB

The IRP at Hill AFB has matured considerably, especially over the past five years. At present, remedial actions are in place for nearly all areas where potential risks exist for residents or workers or the environment in on- and off-Base locations; relevant information is presented in Figures 2-4, 2-5, and 2-6a through 2-6ss and in tabular format in Appendix D. Most of the operable units have signed Records of Decision (RODs) or interim action agreements that include remedial actions that are either being designed or are operating. Operable Units 2, 3, 4, 6, and 7 have remedial actions in place or being implemented. The remedial action for Operable Unit 1 was completed in 2001. Operable Unit 9 contains the Base's deferred sites. Additional investigation of these sites will be performed when use of the area surrounding each site changes from industrial to residential, and the sites become accessible. Operable Units 5 and 8 are well along in their respective Remedial Investigation/Feasibility Study (RI/FS) processes and both have interim actions in place for containment and removal of contaminated ground water at the Base's northern, southern and western boundaries. Operable Units 10 and 11 are in the early stages of remedial investigation.

**TABLE 2-1
AIR FORCE INSTALLATION RESTORATION PROGRAM
WORK IN PROGRESS — INVENTORY CONTROL MANAGEMENT
AS OF 6/20/2002**

MAJ	Base	Area of Concern										Validated IRP Site																																															
		Total #	Awaiting Action	PA	NFRAP I	Awaiting Action	SI	NFRAP II	Awaiting Action	Removal Action	NFRAP III	Total #	Awaiting Action	PA	NFRAP I	Awaiting Action	SI	NFRAP II	Awaiting Action	RI	Awaiting Action	FS	Awaiting Action	ROD/DD	NFRAP III	Awaiting Action	RD	Awaiting Action	RA-C	RA-O	LTM	NFRAP IV	Total NFRAP	SC																									
AFMC	HILL	712	0	0	385	100	0	227	0	0	0	108	0	0	0	0	5	24	0	11	0	1	1	1	22	3	0	1	0	8	6	25	71	71																									
AFMC		712	0	0	385	100	0	227	0	0	0	108	0	0	0	0	5	24	0	11	0	1	1	1	22	3	0	1	0	8	6	25	71	71																									
Total		712	0	0	385	100	0	227	0	0	0	108	0	0	0	0	5	24	0	11	0	1	1	1	22	3	0	1	0	8	6	25	71	71																									
SITE Totals by Study, Interim Action, or Cleanup Status																																																											
Study		100	0	0		100	0				15	0	0			0	5			0	8	0	0	1	1																																		
Cleanup	IRA-C										2	0	0						0	0						0	0	0	0																														
	IRA-O										6	0	0						0	0						0	1	0	1	0	0																												
	RA-AOC/RA-C																														0	8	6																										
RELATIVE RISK STATUS FOR SITES																																																											
High											7		0						0	0						0	3	0	1	0	0						2	0	1	0																			
Medium											7		0						0	0						0	6	0	0	1	0						0	0	0	0																			
Low											9		0						0	5						0	2	0	0	0	1						1	0	0	0																			
NE		712																										0	0	0						0																							
NR											85						0						24						0																22						0	8	6	25					
TOTAL		712																										108																															
TOTAL																																																											
RIP		85																																																									
RC		77																																																									
SC		71																																																									
BD/DR		0																																																									
UXO		0																																																									

PA	Preliminary Assessment	LTO	Long Term Operations
NFRAP	No Further Response Action Planned	LTM	Long Term Monitoring
SI	Site Inspection	IRA-C	Interim Remedial Action - Under Construction
RI	Remedial Investigation	IRA-O	Interim Remedial Action - Operating
FS	Feasibility Study	NE	Not Evaluated
DD	Decision Document	NR	Not Rated
RD	Remedial Design	RC	Response Complete
RA	Remedial Action	SC	Site Complete

TABLE 2-2
NFRAP IRP SITE SUMMARY
(1 of 3)

IRP Site Code	Site Description	Material Stored/ Released	Dates of Operation	Regulatory Mechanism	Status	Location	Decision Document	Programmed Remedial Action	Site Closed
LF012	Landfill 2	Solid Wastes	1963–1965	CERCLA	NFRAP	Hill	1994	NFRAP	1994
OT014	Golf Course	Unknown	1960–Present	CERCLA	NFRAP	Hill	1991	NFRAP	1991
OT020	Spoils Pit	Construction debris	1972–1989	CERCLA	NFRAP	Hill	1992	NFRAP	1992
OT029	Building 204	Beryllium	Unknown	CERCLA	NFRAP	Hill	1998	NFRAP	2001
OT041	Northgate Dump	Debris	1963–1965	CERCLA	NFRAP	Hill	1994	NFRAP	1994
OT042	Munitions Dump	Debris	1942–1948	CERCLA	NFRAP	Hill	1994	NFRAP	1994
SD023	Pond 3	Stormwater	1957–Present	CERCLA	NFRAP	Hill	1995	NFRAP	1995
SD034	Pond 1	Stormwater	1940s–Present	CERCLA	NFRAP	Hill	1995	NFRAP	1995
SD040	Pond 6 (Pond 7)	Stormwater	1976–Present	CERCLA	NFRAP	Hill	1998	NFRAP	Re-opened
SD046	Storm Pond 2	Stormwater	1942–1974	CERCLA	NFRAP	Hill	1992	NFRAP	1992
SS021	Perimeter Road	Waste Solvents	1940s–1979	CERCLA	NFRAP	Hill	1991	NFRAP	1991
SS028	Sill Property	Chromium	1989	CERCLA	NFRAP	Layton	1991	NFRAP	1991
SS030	Bldg 20 (PCB)	PCBs	Unknown	TSCA	NFRAP	Hill	1992	NFRAP	1992
SS032	Bldg 225 (PCB)	PCBs	1940s–Present	CERCLA	NFRAP	Hill	1995	NFRAP	1995
ST018	Bldg 511, 514	Waste Solvents, Fuel	1950s–1985	CERCLA	NFRAP	Hill	1999	NFRAP	2001
ST031	Bldg 220	Wastewater	1940s–Present	CERCLA	NFRAP	Hill	1995	NFRAP	1998
ST035	Bldg 280 (UST)	JP-4	1941–Active	UST	NFRAP	Hill	1995	NFRAP	1998
ST036	Bldg 510 (UST)	Stoddard solvent	1953–1989	UST	NFRAP	Hill	1993	NFRAP	1996
ST037	Bldg 214 (UST)	Stoddard solvent	1964–1989	UST	NFRAP	Hill	1993	NFRAP	1996
ST038	Bldg 1141 (UST)	Diesel	Unknown–1989	UST	NFRAP	Hill	1991	NFRAP	1998
ST039	Bldg 1230 (UST)	Diesel	Unknown–1990	UST	NFRAP	Hill	1992	NFRAP	1995
ST043	Bldg 460 (UST)	Diesel, fuel oil	1959–1989	UST	NFRAP	Hill	1992	NFRAP	1995
ST044	Bldg 598 (UST)	Diesel	Unknown–1990	UST	NFRAP	Hill	1992	NFRAP	1995
ST045	Bldg 1214 (UST)	Diesel	Unknown–1990	UST	NFRAP	Hill	1992	NFRAP	1992
ST047	Bldg 26 (UST)	Gasoline	1942–1988	UST	NFRAP	Hill	1994	NFRAP	1995
ST048	Bldg 32 (UST)	Diesel, gasoline	1941–1988	UST	NFRAP	Hill	1993	NFRAP	1998
ST049	Bldg 41 (UST)	Fuel Oil (heating)	1965–1987	GWP	NFRAP	Hill	1993	NFRAP	1997

**TABLE 2-2
NFRAP IRP SITE SUMMARY
(2 of 3)**

IRP Site Code	Site Description	Material Stored/ Released	Dates of Operation	Regulatory Mechanism	Status	Location	Decision Document	Programmed Remedial Action	Site Closed
ST049	Bldg 41 (UST)	Fuel Oil (heating)	1968–1987	GWP	NFRAP	Hill	1994	NFRAP	1997
ST050	Bldg 204 (UST)	Diesel	1942–1987	UST	NFRAP	Hill	1993	NFRAP	1996
ST051	Bldg 221 (UST)	Diesel	Unknown–1990	UST	NFRAP	Hill	1992	NFRAP	1992
ST052	Bldg 242 (UST)	Fuel Oil (heating)	Unknown–1987	GWP	NFRAP	Hill	1996	NFRAP	1996
ST053	Bldg 256 (UST)	Fuel Oil (heating)	Unknown–1987	GWP	NFRAP	Hill	1996	NFRAP	1996
ST054	Bldg 308 (UST)	Fuel Oil (heating)	1942–1988	GWP	NFRAP	Hill	1993	NFRAP	1993
ST055	Bldg 388 (UST)	JP-4	Unknown–1987	UST	NFRAP	Hill	1994	NFRAP	1996
ST056	Bldg 924 (UST)	Diesel, gasoline	1969–1992	UST	NFRAP	Hill	1993	NFRAP	1996
ST057	Bldg 1243 (UST)	Diesel, gasoline	1960–1988	GWP	NFRAP	Hill	1994	NFRAP	1994
ST059	Bldg 5026 (UST)	Diesel, gasoline, Stoddard solvents	1969–1992	UST	NFRAP	Hill	1993	NFRAP	1995
ST060	Bldg 592 (UST)	Diesel, gasoline, JP-4	1986–Active	UST	NFRAP	Hill	1993	NFRAP	1995
ST062	Bldg 1102 (UST)	Diesel	Unknown–Active	UST	NFRAP	Hill	1992	NFRAP	1995
ST063	Bldg 837 (UST)	Diesel	198–1992	UST	NFRAP	Hill	1992	NFRAP	1995
ST064	Bldg 228 (UST)	JP-4	1970–Active	UST	NFRAP	Hill	1993	NFRAP	1996
ST065	Bldg 236 (UST)	Purge fluid, slop tank (JP-4/water)	1983–Active	UST	NFRAP	Hill	1995	NFRAP	1995
ST066	Bldg 4301 (UST)	Gasoline	1954–1991	UST	NFRAP	LMTA	1993	NFRAP	1998
ST067	Bldg 1705 (UST)	Diesel, gasoline	1980–1992	UST	NFRAP	Hill	1993	NFRAP	1996
ST068	Bldg 10779 (UST)	Slop tank (JP-4/water)	1973–1992	UST	NFRAP	Hill	1995	NFRAP	1997
ST069	Bldg 722 (UST)	Gasoline	1972–1992	UST	NFRAP	Hill	1993	NFRAP	1993
ST070	Bldg 1132 (UST)	Diesel	1976–1992	UST	NFRAP	Hill	1993	NFRAP	1993
ST072	Bldg 1590 (UST)	Fuel Oil (heating)	1964–Active	GWP	Hold	Hill	ND	NFRAP	1994
ST074	Bldg 260 (UST)	JP-4/Fuel Oil (heating)	1958–Active	UST	RA/LTM	Hill	1996	LTM. NFRAP	1998
ST075	Bldg 555 (UST)	Fuel Oil (heating)	Unknown–1993	GWP	NFRAP	Hill	1994	NFRAP	1994
ST076	Bldg 553 (UST)	Fuel Oil (heating)	Unknown–1994	GWP	NFRAP	Hill	1994	NFRAP	1994
ST077	Bldg 780 (UST)	Diesel	1965–1994	UST	NFRAP	Hill	1995	NFRAP	1995

TABLE 2-2
NFRAP IRP SITE SUMMARY
(3 of 3)

IRP Site Code	Site Description	Material Stored/Released	Dates of Operation	Regulatory Mechanism	Status	Location	Decision Document	Programmed Remedial Action	Site Closed
ST078	Bldg 744 (UST)	Fuel Oil (heating)	Unknown-Active	GWP	Hold	Hill	1994	NFRAP at this time. Currently in use	1993
ST079	Bldg 40002 (UST)	Diesel, gasoline	1975-1992	UST	RA/LTM	UTTR	1994	NFRAP	2001
ST081	Fire Training Area 2	JP-4; other fuels	1973-1995	CERCLA	NFRAP	Hill	1998	NFRAP	2001
ST082	Bldg 1 (UST)	Diesel	1982-1991	UST	NFRAP	Hill	1993	NFRAP	1996
ST083	Bldg 771 (UST)	Fuel Oil (heating)	1975-1992	UST	NFRAP	Hill	1994	NFRAP	1996
ST084	Bldg 859 (UST)	Pesticides/Herbicides	1983-1993	UST	NFRAP	Hill	1994	NFRAP	1994
ST085	Bldgs 1313, 1314 (UST)	Diesel	1941-Active	GWP	RA/LTM	Hill	1996	LTM of bioventing system	2000
ST086	Bldgs 1134, 454, (UST) 1703, 1904, 2025,2104, 2203, 825	Fuel Oil, diesel, gasoline, waste oil	1957-Active	GWP/UST	NFRAP/RA/LTM	Hill	1995 1998	NFRAP	1998 (454, 1703)
ST087	Little Mtn Tank Farm	Jet fuel, Stoddard solvents, diesel, fuel oil	1958-Active	GWP	NFRAP	LMTA	Pending	NFRAP	1999
ST088	Little Mountain Fire Training Area (UST)	JP-4, Diesel	1970-1973	GWP	NFRAP	LMTA	1997	NFRAP	1997
ST097	Building 454	Waste Oil	1966-Present	UST	NFRAP	Hill	1997	NFRAP	1998
WP006	IWTP Sludge Drying Beds	Industrial Sludge	1956-1982	CERCLA	NFRAP	Hill	1995	NFRAP	1995
OT013	Agent Orange Test Area-UTTR	Herbicides	1972-1973	RCRA	NFRAP	Hill	1990	NFRAP	1990
SD016	Bamberger Pond	Stormwater	1950s-Active	CERCLA	NFRAP	Hill	2000	NFRAP	2000

(a) Interim action underway

(b) Based on relative risk

(c) Corrective actions are either complete or in progress for these sites. In many cases, EMR submitted CAPs and completed proposed actions prior to official acceptance by UDERR. This approach has been accepted by UDERR.

AST	Aboveground Storage Tank	NA	Not Applicable	TSCA	Toxic Substance Control Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	ND	No Document	UDERR	Utah Department of Environmental Quality/Division of Environmental Response and Remediation
DD	Decision Document	NFRAP	No Further Response Action Planned		
GWP	Utah Ground Water Protection Program	NP	Not Prioritized	Unkn	Unknown
Layton	Layton City, Utah	RA	Remedial Action	UST	Underground Storage Tank
LMTA	Little Mountain Test Annex	RCRA	Resource Conservation and Recovery Act	UTTR	Utah Test and Training Range

As presented in Figures 2-4 and 2-5, the areas of soil and ground-water contamination across the Base are numerous and significant efforts are being taken to reduce contaminant levels and their associated potential risks to the environment. Because there are a high number of ground-water contaminant plumes that approach and cross the Base's boundary, EMR has adopted a strategy for ground-water containment and treatment at the boundary to reduce potential risks at off-Base locations.

2.4.2. Utah Test and Training Range

The UTTR has been divided into north and south areas (see Figure 1-1). The UTTR-North is over 366,000 acres while the UTTR-South is nearly 600,000 acres. As depicted in Figures 2-6q and 2-6r, there are 97 AOCs at the UTTR that warrant further investigation. These sites are listed in tabular format in Appendix E. Hill AFB is working with UDEQ and EPA to develop an acceptable approach to inspecting and investigating many of the AOCs.

2.4.3. Wendover Air Force Auxiliary Field

Efforts completed in 1994 at WAFAF did not identify any significant sources for contamination nor any areas where ground water was contaminated at a level requiring any corrective actions. Hill AFB has instituted a long-term program to monitor ground-water conditions to insure that any future increases in contaminant levels are not overlooked. This approach is being coordinated with both the UDEQ and Nevada Division of Environmental Protection. Figure 2-s provides an overview of the environmental conditions and activities at WAFAF.

2.4.4. Little Mountain Test Annex

The IRP sites at LMTA include two formerly used sludge drying beds, an aboveground fuel storage tank farm, a fire training area, and a UST. The tank farm and fire training areas have been investigated, determined to require no further response, and have been closed with UDEQ. Additional investigation of the sludge drying beds area began in late 1998. To date, investigation at the sludge drying beds have indicated elevated concentrations of solvents in ground water along with elevated concentrations of PCBs and metals in soil. The UST site ST066 has been closed after bioventing. Some residual fuel has been left in place with the concurrence of State agencies. No further actions are planned.

An area used for the disposal of low level radioactive debris (magnesium-thorium scrap metal from aircraft operation) was investigated in 1993 and was determined to require no further action. This is not an IRP site. Refer to Figure 2-6p for the locations of the active project sites.

2.5 COMMUNITY INVOLVEMENT

The IRP at Hill AFB has an active Community Relations Plan (CRP), which was revised and published in January 1998. It contains a description of the overall public participation process, including all required elements and some innovative approaches and plans. The required elements addressed include:

- *Maintaining an Administrative Record and information repository*
- *Identifying information contact(s)*
- *Establishing contacts with local officials*
- *Conducting initial interviews and discussions with local residents*
- *Distributing fact sheets, technical summaries, and news releases throughout the investigation and remedy selection process*
- *Employing public comment periods, public meetings, and responsiveness summaries during the Proposed Plan (PP), ROD, and Remedial Design/Remedial Action (RD/RA) stages*
- *Establishing a Restoration Advisory Board.*

Some of these required elements as well as other planned activities are summarized below. The plan is reviewed at least every six months and revised or updated as appropriate. Currently, the Environmental Public Affairs Coordinator is responsible for implementing the plan (along with other EM community relations programs). The CRP describes current and planned activities in accordance with the requirements of the FFA and with CERCLA, the IRP, and other Applicable or Relevant and Appropriate Regulations (ARARs). All of the CRP activities are in various stages of their implementation.

Of particular interest are three committees that focus community input into IRP activities. They are:

- *The Restoration Advisory Board was established on January 12, 1995 and meets four to five times each calendar year. The RAB has maintained a steady membership of approximately twenty representatives from surrounding communities (residents and city officials), Davis and Weber counties, the EPA, the UDEQ, and Hill AFB officials. The objective of the RAB is to solicit stakeholder input and involvement early in the Base's restoration process.*

- *The Environmental Protection Committee (EPC), is chaired by the OO-ALC executive director and involves senior representatives from Hill AFB organizations and serves as a steering group to monitor the overall Base environmental programs.*
- *The Environmental Management Board, chaired by the director of EM, serves as a working focus group for the EPC.*

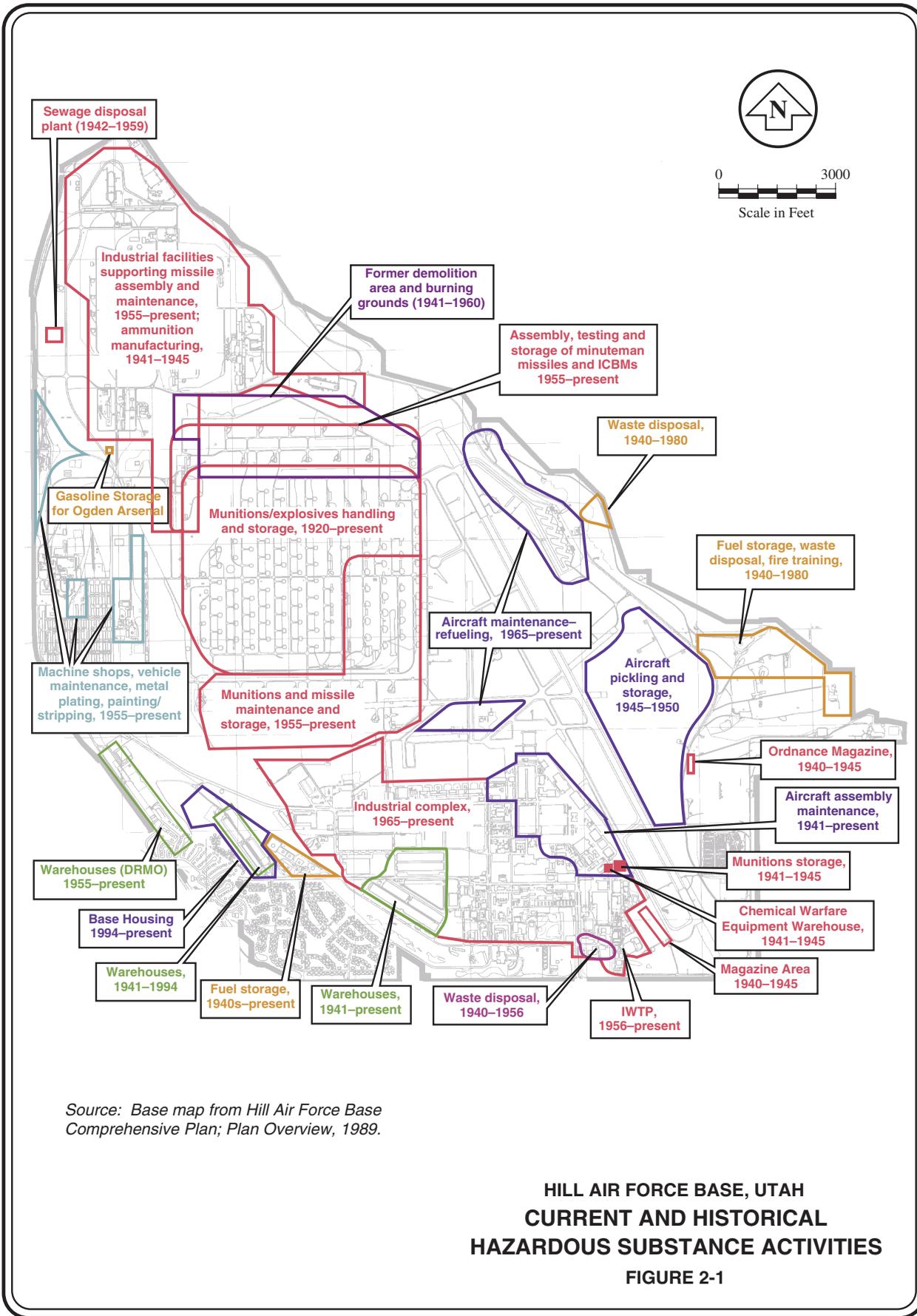
A mailing list (currently includes over 2,000 interested parties) has been created which aids in the distribution of informative EM publications.

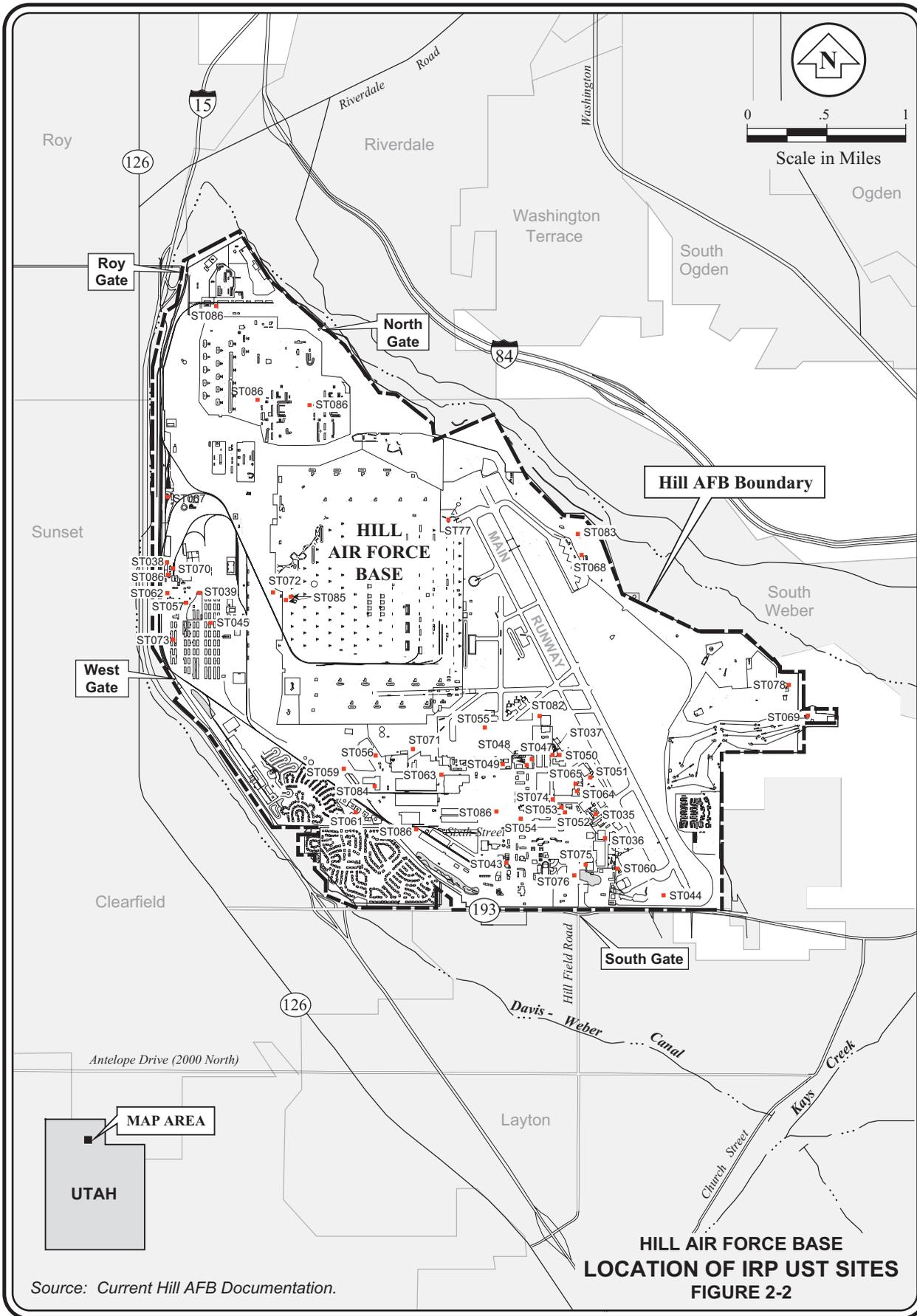
**TABLE 2-3
RESTORATION ADVISORY BOARD MEMBERS**

Name	Affiliation
Bob James	Hill AFB/Air Force Co-Chair
Al Herring	Sierra Club
Mick Holmes	Central Weber Sewer District
Dave Hultgren	Clearfield Community/City
Gregory Fisher	Clinton Community
John Keck	Clinton City
Julia Heavirland	Community at Large
Louis Cooper	Davis County Health Department
Floyd Baham	Davis-Weber Canal Company
To be named	Hill AFB Community
Peter Matson	Layton City
Jerry Everett	Layton Community/Community Co-Chair
Cliff Specht	North Davis Sewer District
Lynn Moulding	Riverdale Community/City
Dale Searcy	Roy City
Rita Painter	Roy Community
Mark Perkins	South Weber Community
Joel Workman	South Weber City
Mel Wood	Sunset Community
Mickey Hennessee	Sunset City
Sandra Bourgeois	United States Environmental Protection Agency
Mo Slam	Utah Department of Environmental Quality
Bill Reyns	Weber-Morgan County Health Department
Scott Paxman	Weber Basin Water Conservancy District
Mike Perez	Weber State University

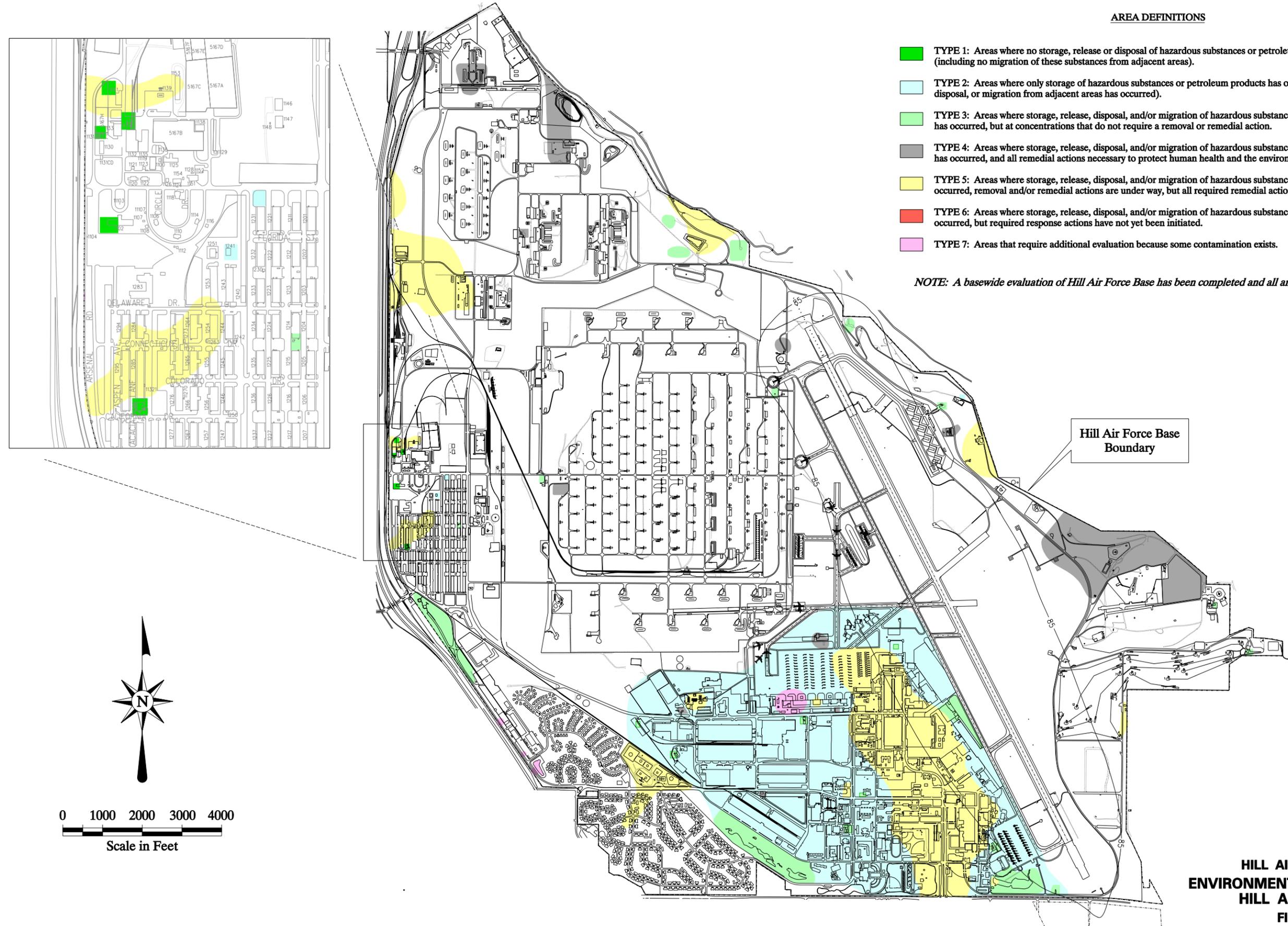
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PROJECT NO. 1970963.54010115.ai 08/05/02





PROJECT NO: 1970963.54010115.ai 08/05/02

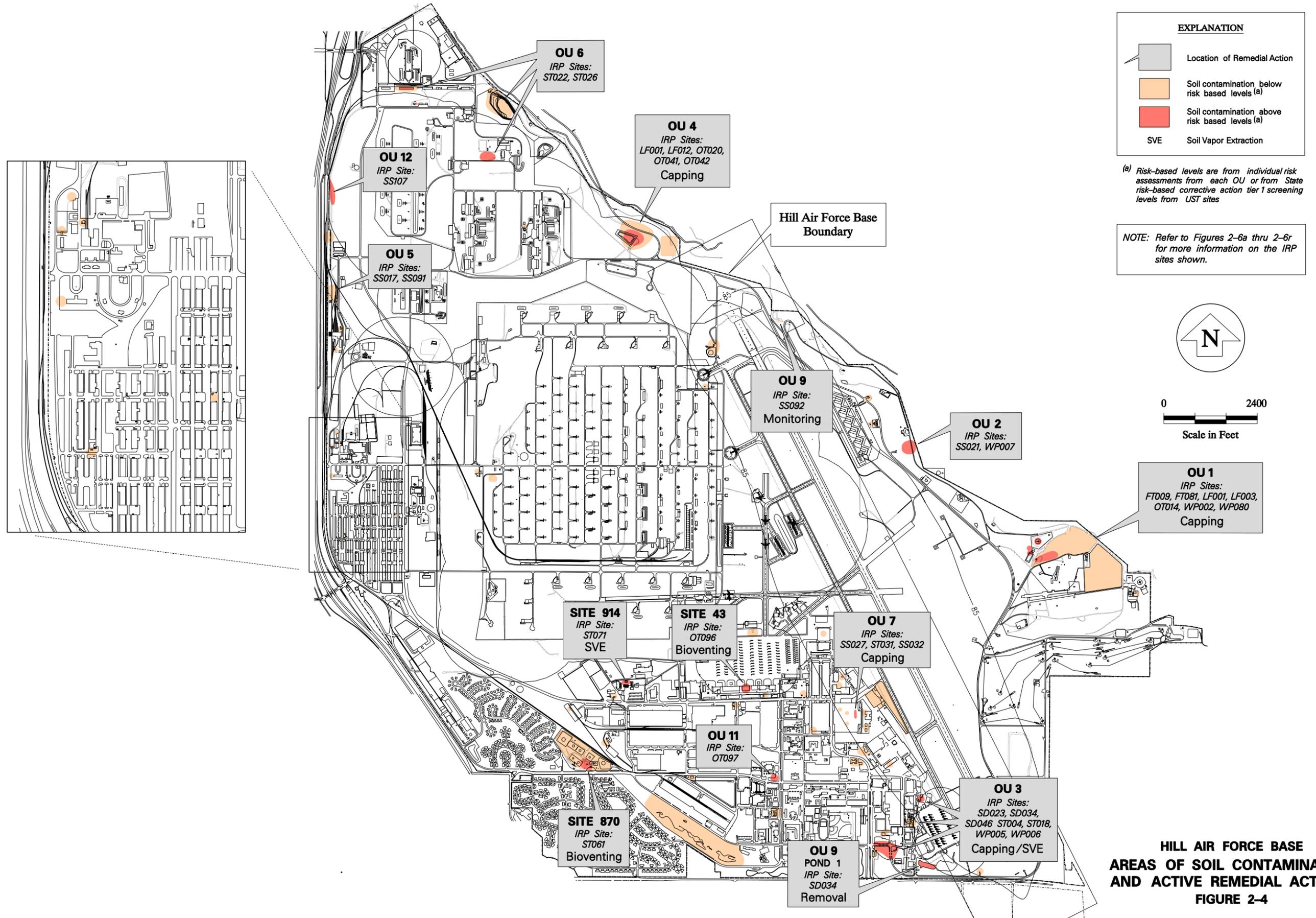


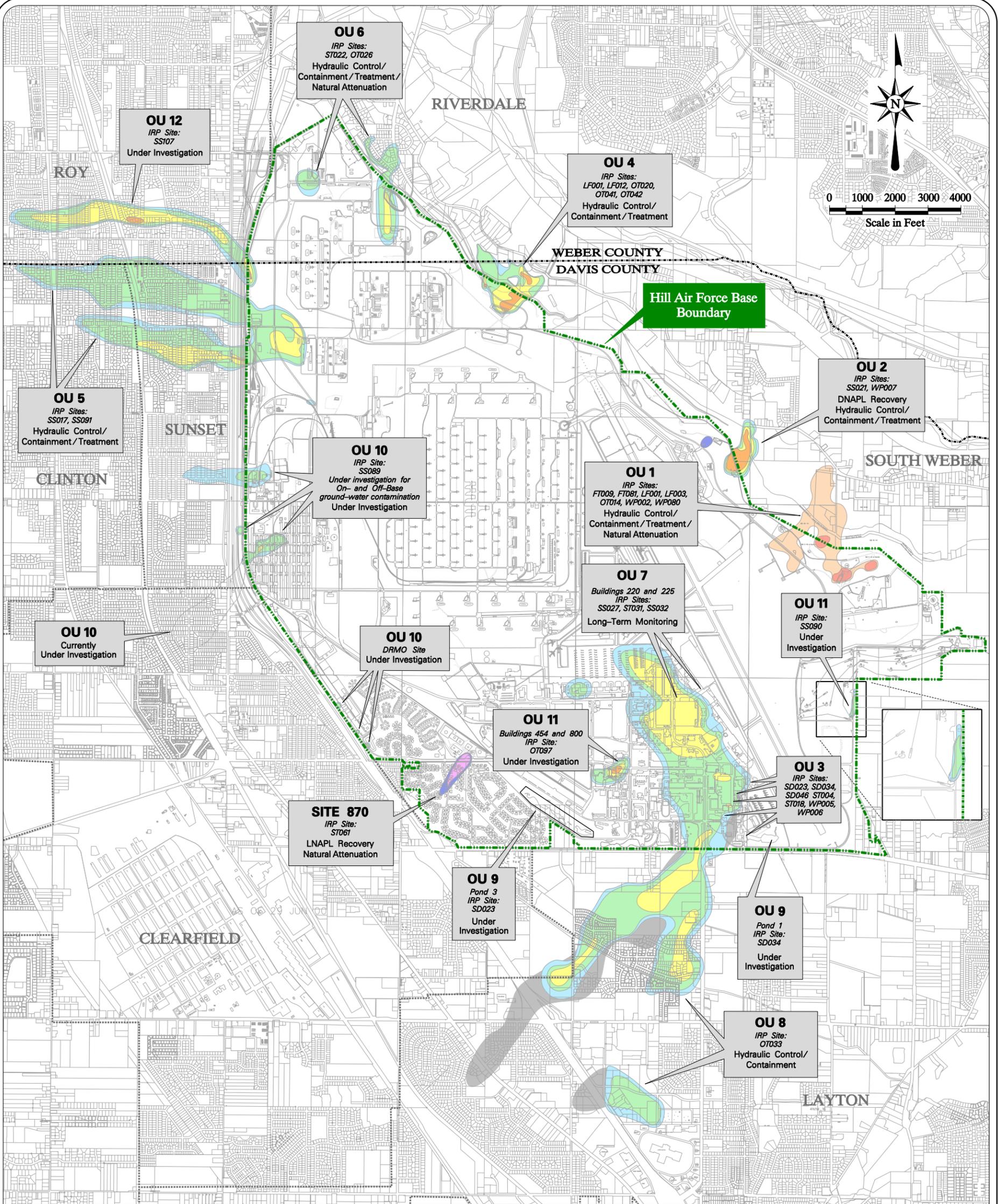
AREA DEFINITIONS

- TYPE 1:** Areas where no storage, release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).
- TYPE 2:** Areas where only storage of hazardous substances or petroleum products has occurred (but no release, disposal, or migration from adjacent areas has occurred).
- TYPE 3:** Areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, but at concentrations that do not require a removal or remedial action.
- TYPE 4:** Areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, and all remedial actions necessary to protect human health and the environment have been taken.
- TYPE 5:** Areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, removal and/or remedial actions are under way, but all required remedial actions have not yet been taken.
- TYPE 6:** Areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, but required response actions have not yet been initiated.
- TYPE 7:** Areas that require additional evaluation because some contamination exists.

NOTE: A basewide evaluation of Hill Air Force Base has been completed and all areas have been evaluated.

**HILL AIR FORCE BASE
ENVIRONMENTAL CONDITION OF
HILL AFB PROPERTY
FIGURE 2-3**





EXPLANATION

OU 1 shows 1,2-DCE isoconcentration contour lines

OU 2, 4, 5, 6, 8, 10, and 11 show TCE isoconcentration contour lines

OU 11 - Bldg. 454 shows MTBE isoconcentration contour lines

ST061 and ST068 show petroleum hydrocarbon isoconcentration contour lines

HILL AIR FORCE BASE

AREAS OF GROUNDWATER CONTAMINATION AND ACTIVE REMEDIAL ACTIONS

- 70-1000
- >1000

- 5-10
- 10-100
- 100-1,000
- 1,000-10,000
- >10,000

- 5-10
- 10-100
- 100-1,000
- 1,000-10,000

- Extent of ground-water contamination
- Extent of LNAPL
- TCE Trichloroethene
- 1,2-DCE 1,2-Dichloroethene
- LNAPL Light Non-Aqueous Phase Liquids

- OU 8
- 1,2-DCA plume

FIGURE 2-5

Colored areas show ground-water contamination above Primary MCLs. Concentrations are in micrograms/liter (ug/l).

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Operable Unit 1

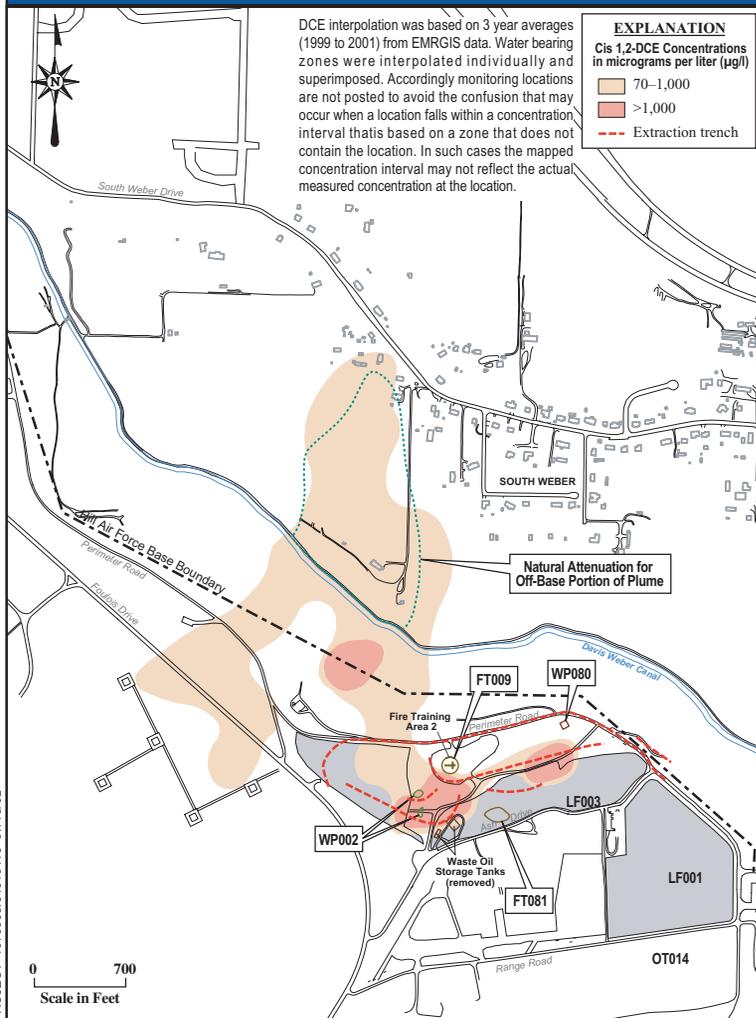
(IRP Sites: FT009, FT081, LF001, LF003, OT014, WP002, WP080)

Program Manager: Jeffrey Watkins



Contaminants of Concern — Ground Water

Benzene, TCE, PCE, DCE, Chlorobenzene, Vinyl Chloride, Trichlorobenzene, Naphthalene, Dichlorobenzene, Arsenic



Project Information Highlights

Site Summary

- FT009:** Fire Training Area 1 — Active 1958–1973; jet fuel and waste solvents.
- FT081:** Fire Training Area 2 — Active 1973–1995; jet fuel and waste solvents. Site closed.
- LF001:** Landfill 4 — Operated 1967–1973; domestic solid waste, waste solvents, IWTP sludge, electroplating wastes.
- LF003:** Landfill 3 — Active 1947–1967; domestic solid waste, waste solvents, IWTP sludge, electroplating wastes.
- OT014:** Golf Course — No known disposal activities. NFRAP site.
- WP002:** Chemical Disposal Pits 1 & 2 — Active 1952–1974; jet fuel and waste solvents.
- WP080:** Waste Phenol/Oil Pit — Unknown activity period; waste oils and phenol.
- Operations since the 1940's included disposal of waste products in on-base pits and landfills and fire training activities. All sites are NPL sites, although OT014 has been removed from the Federal Facilities Agreement. Six sites have impacted soil and ground water. Cease/desist order by Utah Department of Health in 1984.
- Interim actions initiated in 1985 and continue at present (seep/spring collection/treatment, slurry wall.).
- EPA and DOD-funded technology demonstration site from 1994–1997.
- ROD signed September 1998.
- Design completed October 1999. Construction completed in June 2001.

Cleanup Progress

Treatment to Date

Soil: Not applicable
 Ground water: 271,627,076 gallons

Contaminant Removal to Date

Soil: Not applicable
 Ground water: 1,386 pounds
 3,899 gallons (NAPL)

Public Relations

City Council Meetings

Quarterly Updates to South Weber CC

Information Fairs (public meetings)

Public Meeting (April 1993)
 Public Meeting (February 1998)
 Tour of OU-1 Trench Construction Site (July 2002)
 South Weber Planning Commission (2001)

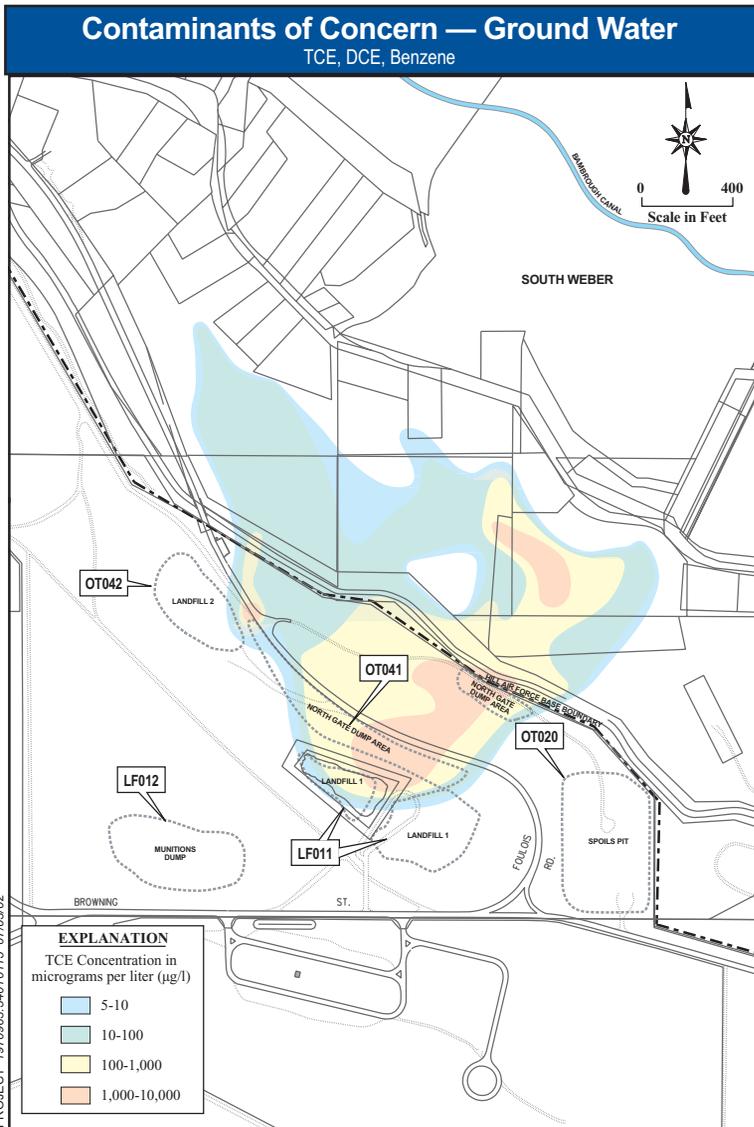
Other Public Involvement

Meetings with South Weber Planning Commission



Operable Unit 4

(IRP Sites: LF011, LF012, OT020, OT041, OT042)
 Program Manager: Jeffrey Watkins



Project Information Highlights

Site Summary

LF011: Landfill 1 — Operated 1955–1967; solid wastes (burned daily), possibly waste oils and solvents.
LF012: Landfill 2 — Operated 1963–1965; solid wastes (burned periodically). NFRAP site.
OT020: Spoils Pit — Operated 1972–1989; construction debris. NFRAP site.
OT041: North Gate Dump; no known disposal activities. NFRAP site.
OT042: Munitions Dump; no known disposal activities. NFRAP site.

- All sites are NPL and are included in the Federal Facilities Agreement.
- Soil and ground water are impacted.
- DOD-funded technology demonstration site from 1996–1997.
- Interim action operated 1993–1997 as technology demonstration (horizontal wells) and has been incorporated into Phase II final actions.
- Implementation of trench ground-water extraction system (Phase III) due to slope stability and technical issues.
- Air stripper bypassed due to low effluent concentrations. Discharge direct to sanitary sewer.
- Phytoremediation treatability study test plots planted in 2001-ongoing study.
- Geosystem review for T1 waiver is in progress.

Cleanup Progress

Treatment to Date
 Soil: Not applicable
 Ground water: 27,129,109 gallons

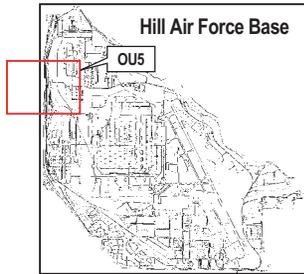
Contaminant Removal to Date
 Soil: Not applicable
 Ground water: 125 pounds

Public Relations

City Council Meetings
 Quarterly Updates to South Weber CC
 Annual Update to Riverdale CC

Information Fairs (public meetings)
 Public Meeting (October 1993)

Other Public Involvement
 None to date



Operable Unit 5

(IRP Sites: SS017, SS091)

Program Managers: Steve Hicken (Investigation) Jeffrey Watkins (Operations)

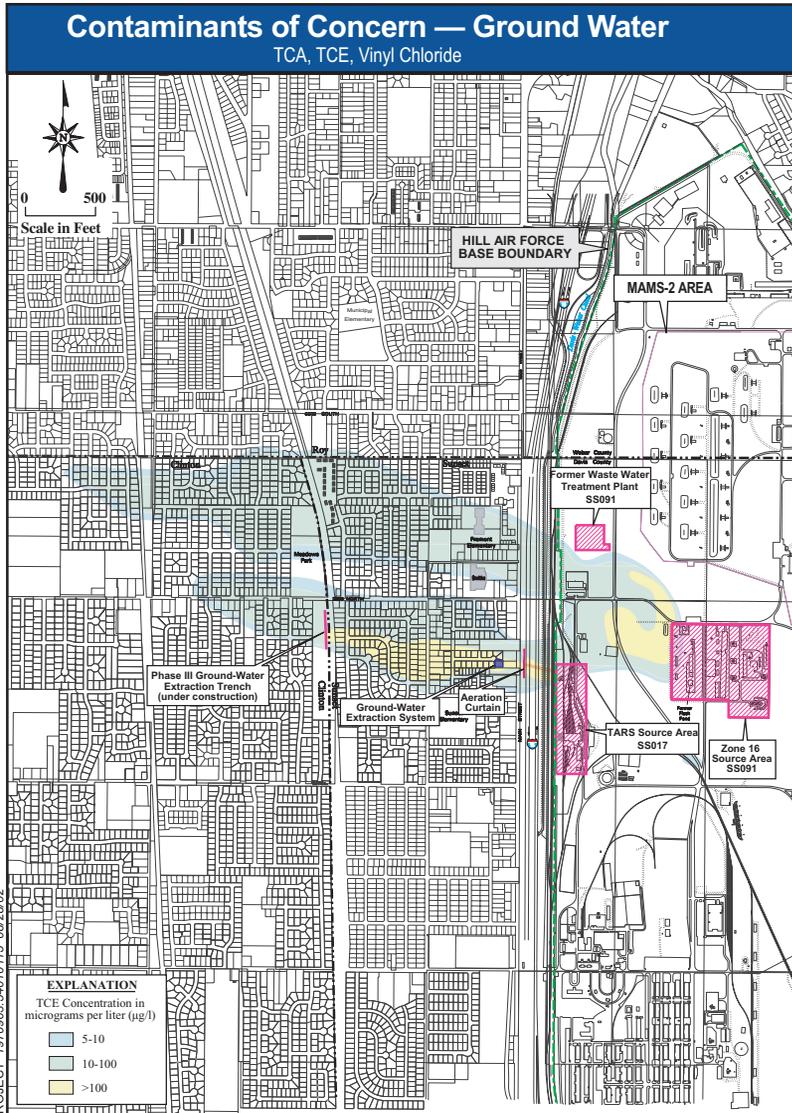


Figure 2-6e

Project Information Highlights

Site Summary

SS017: Tooele Army Rail Shop — Active 1941–Present; petroleum products, waste solvents, plating solutions, potentially chloroform.

- Is an NPL site and is included in the Federal Facilities Agreement.
- Soil and ground water are impacted.
- Interim Actions installed during 1996–1997 and continue at present (soil management unit, ground-water aeration curtain, and extraction wells).

SS091: Building 1607— Active from 1956–1976; operations at SS091 (Building 1607) included disposal of waste solvents and miscellaneous liquids in an evaporation pond.

- Site is on NPL but has not yet been included in the Federal Facilities Agreement.
- Evidence of soil contamination has not been found.

Cleanup Progress

Treatment to Date

Soil: Not applicable
Ground water: 18,845,571 gallons

Contaminant Removal to Date

Soil: Not applicable
Ground water: 24 pounds

Public Relations

City Council Meetings

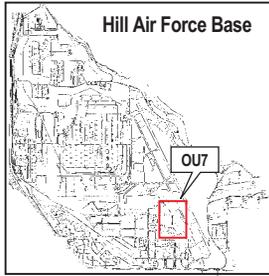
Semi-Annual Updates to Clinton City Council
Annual Update to Sunset City Council

Information Fairs (public meetings)

Public Meeting (January 1994)
InfoFair (Sunset) 1/10/01
InfoFair (Clinton) 11/15/00
InfoFair (Sunset/Clinton) 11/8/01

Other Public Involvement

OU-5 Work Group (2001-2002) Input on EE/CA
BRA Air Sampling in Residents' homes
Cancer Cluster Study Mtg w/residents, RAB
Fruit Sampling for residents
Updates to Sunset/Clinton Planning Commissions



Operable Unit 7

(IRP Sites: SS027, ST031, SS032)

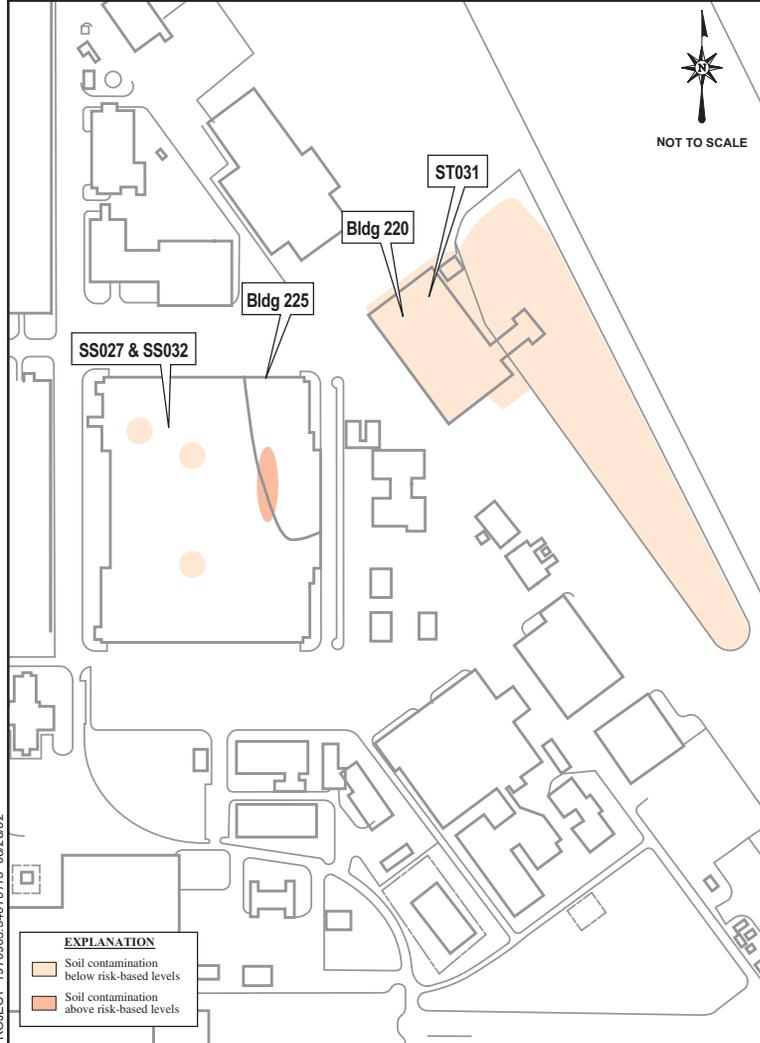
Program Manager: Jeffrey Watkins

SOIL ONLY



Contaminants of Concern — Soil

Hexavalent and Total Chromium



Project Information Highlights

Site Summary

SS027: Building 225 (chromium spill) — Active 1940's–Present; use of electroplating and etching solutions, lacquer, and waste solvents that were discharged to floor drains that leaked.

ST031: Building 220 — Active 1940's–Present; industrial wastewater containing paint stripping solutions, solvents, acids, acrylic-base and acid-based paints, and oils that were suspected of being spilled or leaked. NFRAP site.

SS032: Building 225 (PCB) — Active 1940's–Present; PCB-containing transformer oil. NFRAP site.

- Operations since 1940's related to materials handling and disposal at two aircraft maintenance facilities.
- Sites are NPL and are included in Federal Facilities Agreement.
- Soil has been impacted.
- Interim action at ST031 completed in 1986 (oil-water separator, UST, and soil removals; capping).
- Final action at SS027 completed in 1997. Under long-term monitoring. Building floor acting as Cap.
- Further action at Building 225 will be required when building is removed.

Cleanup Progress

Treatment to Date

Soil: Not applicable
Ground water: Not applicable

Contaminant Removal to Date

Soil: Not applicable
Ground water: Not applicable

Public Relations

City Council Meetings

None to date

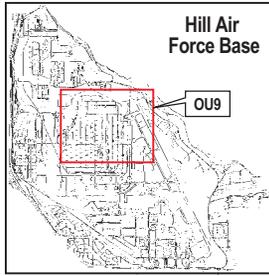
Information Fairs (public meetings)

Public Meeting (March 1995)

Other Public Involvement

None to date

Figure 2-61
PROJECT 1970963 54070715 09/29/02

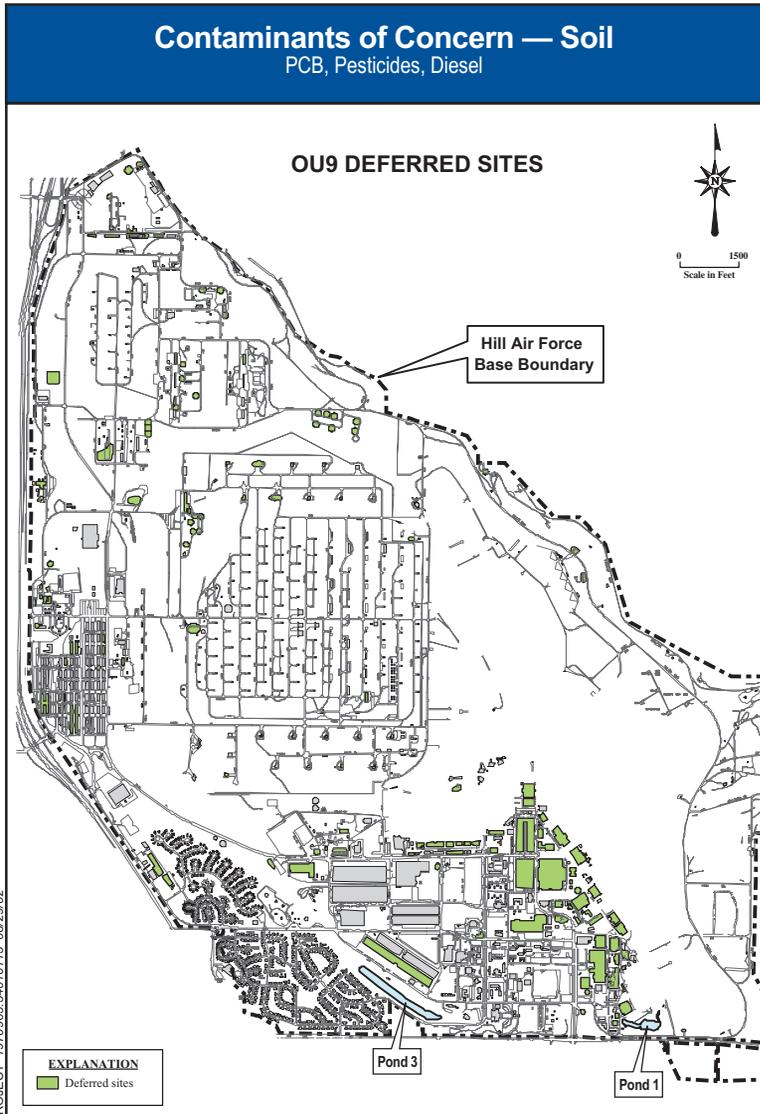


Operable Unit 9

(IRP Sites: SS092, OT093, SS094, SS095, OT106)

*See OU6 (IRP Site OT026) for Ground-Water Concerns

Program Manager : Steve Hicken



Project Information Highlights

Site Summary

SD034: Pond 1 — Sediment contamination found near inlet in 1999. Investigation reopened under OU9. Originally investigated under OU3.

SS092: Building 786 — Active 1984–1997; pesticides in surface soils adjacent to loading/unloading area of a former building.

SA093: Transformer Storage Yard — Active 1940’s–1997; PCB’s from formerly used transformers. Site remediation completed January 1999. NFRAP was documented in 2000.

SS094: Building 2402 — Active 1961–Present; PCB’s from facility transformer. NFRAP was documented in 2000. Site remediation completed January 1999.

SS095: Building 2403 — Active 1961–Present; PCB’s from facility transformer. NFRAP was documented in 2000. Site remediation completed January 1999.

- Pesticides and PCB usage and storage operations since the 1940’s.
- Sites are neither NPL nor in the Federal Facilities Agreement.
- Investigations began in 1989 at ST022 and in 1995 at remaining sites.
- Surface and near surface soils have been impacted.
- PCB sites were remediated in accordance with the Toxic Substances Control Act.

OT106: 100 deferred sites. Investigations to be continued in the future. Currently under institutional control.

Cleanup Progress

Treatment to Date

Soil: Not applicable
Ground water: Not applicable

Contaminant Removal to Date

Soil: Not applicable
Ground water: Not applicable

Public Relations

Public Meetings

None to date

Information Fairs (public meetings)

None to date

Other Public Involvement

None to date

Operable Unit 9

(IRP Sites: SS092, OT093, SS094, SS095, OT106)

*See OU6 (IRP Site OT026) for Ground-Water Concerns

Program Manager : Steve Hicken

Project Information Highlights												
Study	Pre 1996	96	97	98	99	00	01	02	03	04	05	06
Site Evaluation and Investigation	1995											

Milestones			
PAST		FUTURE	
Project	Completion	Project	Completion
Delineation and removal actions	1998	Remedial Investigation	2002
Remedial actions at PCB sites	1998	Feasibility Study	2003
Site Investigations	1989-Present	Basewide 5-Year Review	2003
		Proposed Plan	To be determined
		Record of Decision	To be determined

Funding			
	Historical* (thru FY00)	FY01	FY02 through Completion
Study	\$140,661	\$558,000	\$725,000
Design & Construction	\$231,388	\$0	\$1,347,000
Operation & Maintenance	\$0	\$0	\$0
Monitoring	\$0	\$129,593	\$4,528,000

*Not tracked separately before 1998.

Remediation	Pre 1996	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	Post 2049
Long-Term Monitoring																																																								

Cleanup System Photographs			
No Photograph Currently Available			



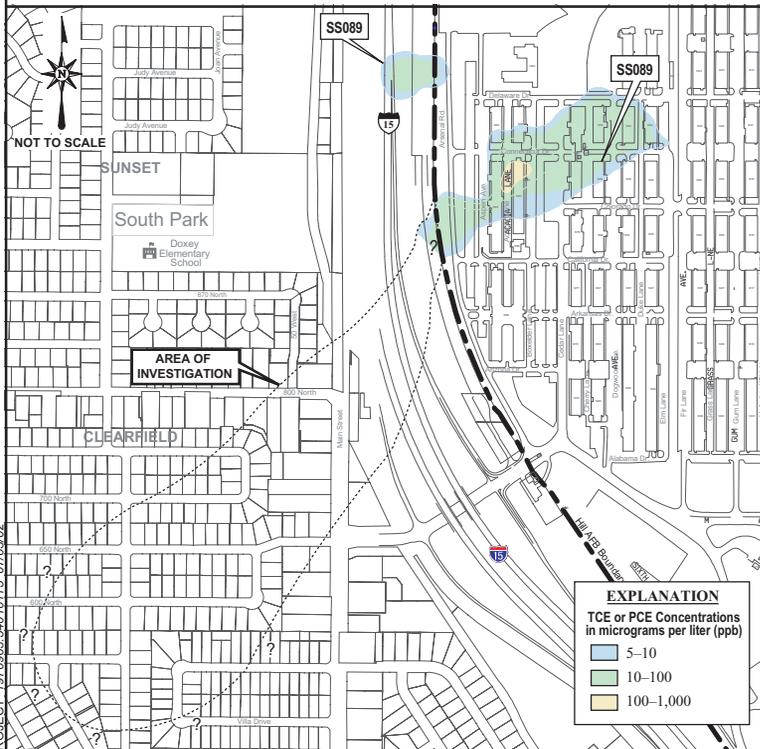
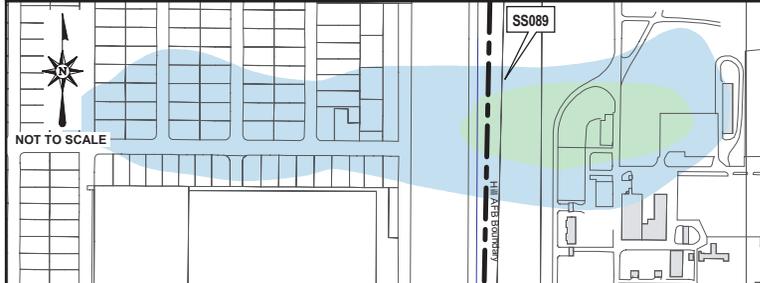
Operable Unit 10

(IRP Sites: SD040 and SS089)

Program Manager: Steve Hicken



Contaminants of Concern — Ground Water TCE



Project Information Highlights

Site Summary

SS089: 1100 and 1200 area buildings. Active from 1940's–Present.

- Operations at SS089 (Westgate area) included use and disposal of small quantities of waste solvents via floor drains in Zone 11 and 12 areas of the Base.
- Ground water has been impacted in on-base areas and off-Base.
- Evidence of soil contamination has not been found.
- Future interim and/or final remedial actions to be determined.

SS097: Building 454 gas station active from 1957 to 1999.

- Leaking underground storage tanks removed and addressed under State UST program.
- Free product being addressed under State UST regulations.
- Dissolved ground-water plume impacted with BTEX, MTBE, and TCE being addressed under CERCLA/FFA.
- Future remedial actions to be determined.

SD040: Pond 7 area.

- Ground water discovered on-Base area, no soil contamination.
- Off-Base investigation continuing.

Cleanup Progress

Treatment to Date

- Soil: Not applicable
- Ground water: Not applicable

Contaminant Removal to Date

- Soil: Not applicable
- Ground water: Not applicable

Public Relations

City Council Meetings

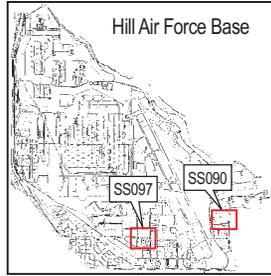
None to date

Information Fairs (public meetings)

InfoFair (Sunset/Clinton) 11/8/01 (1100 area)

Other Public Involvement

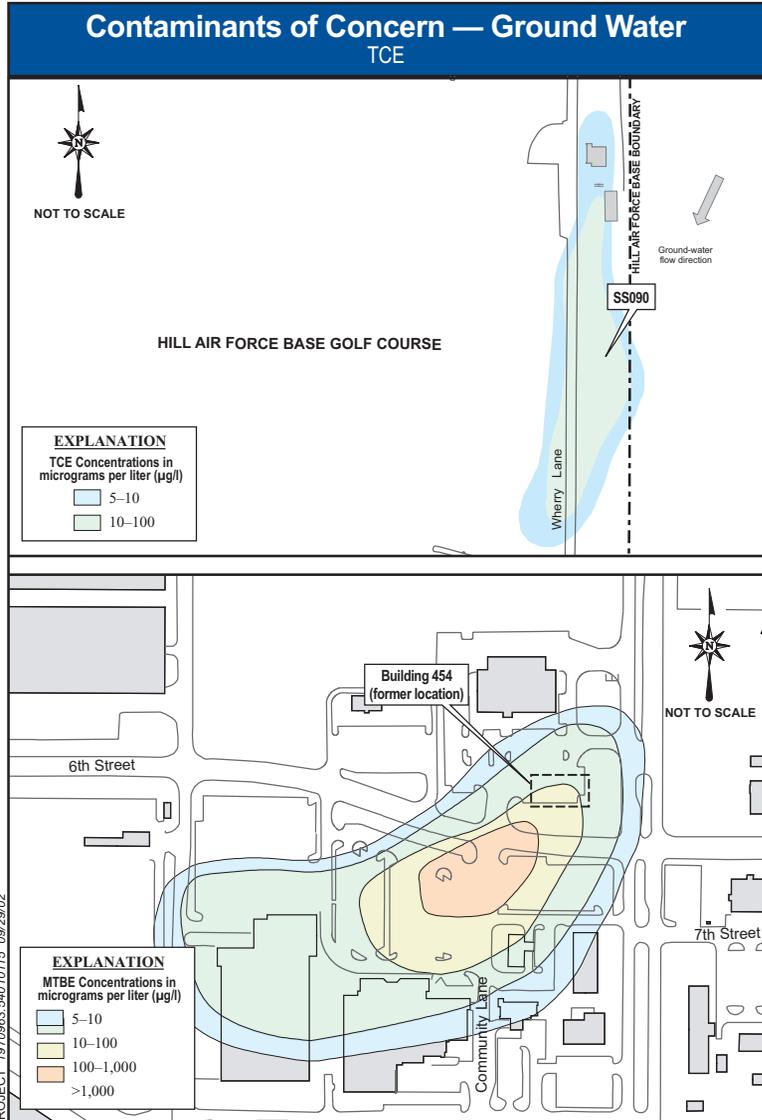
None to date



Operable Unit 11

(IRP Sites: SS090 and OT097)

Program Manager: Steve Hicken



Project Information Highlights

Site Summary

SS090: Active from 1958 through mid-1980's.

- Operations at SS090 area (Zone 7—Golf Course Area) included use and disposal of small quantities of waste solvents via floor drains and sumps associated with golf cart maintenance.
- Ground water has been impacted in on-base areas only.
- Evidence of soil contamination has not been found.
- Future interim and/or final remedial actions to be determined.

OT097: Building 454 gas station active from 1957 to 1999.

- Leaking underground storage tanks removal and addressed under State UST program.
- Free product being addressed under State UST regulations.
- Dissolved ground-water plume impacted with BTEX, MTBE, and TCE being addressed under CERCLA/FFA.
- Future remedial actions to be determined.

Cleanup Progress

Treatment to Date

Soil: Not applicable
 Ground water: Not applicable

Contaminant Removal to Date

Soil: Not applicable
 Ground water: 46 gallons (NAPL)

Public Relations

City Council Meetings

None to Date

Information Fairs (public meetings)

None to Date

Other Public Involvement

None to Date



Operable Unit 12

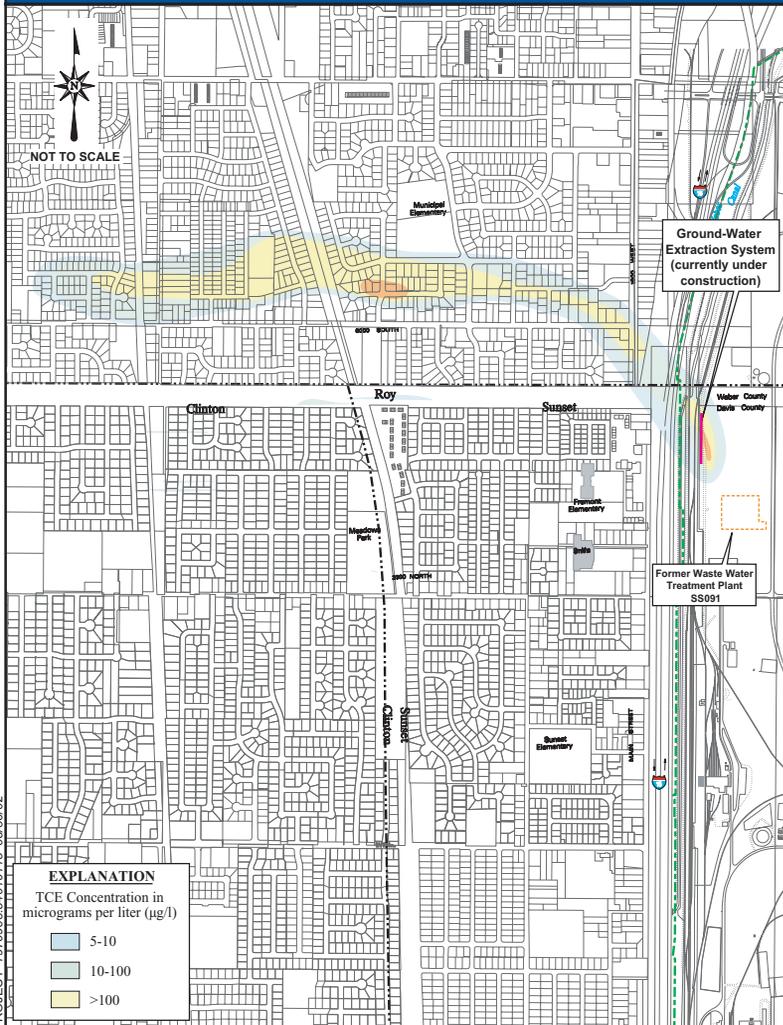
(IRP Site: SS107)

Program Manager: Steve Hicken



Contaminants of Concern — Ground Water

TCE, PCE, Carbon Tetrachloride



Project Information Highlights

Site Summary

SS107: Ground water and soil contamination originating from miscellaneous chemical disposal activities sometime between the 1940s and mid 1970, now called the Aspen Ave. disposal site.

- TCE contamination discovered in ground water in the city of Roy, Utah in 1999.
- Intensive site characterization (2000—2002) that defined the nature and extent of ground water contamination (plume extends more than 8000 feet off-Base) in less than two years.
- October 2001 OU 12 was created.
- TCE vapors found in several homes in winter-summer 2002 (up to 16 ppbr). Remedial measures taken at 6 homes to date.
- Source area delineation by innovative technologies in Summer 2002.
- Fall 2002 interim remedial action to be continued at Base boundary ground water extraction system.

Cleanup Progress

Treatment to Date

Soil: Not applicable
Ground water: Not applicable

Contaminant Removal to Date

Soil: Not applicable
Ground water: Not applicable

Public Relations

City Council Meetings

Semi-Annual Updates to Roy CC

Information Fairs (public meetings)

InfoFair (2/7/01)

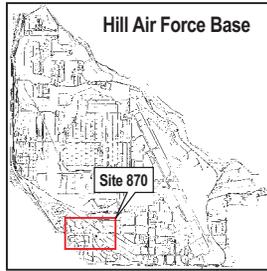
InfoFair (11/15/01)

InfoFair (8/21/02)

Other Public Involvement

Door-to-door canvases for air sampling

Update to Roy City Planning Commission



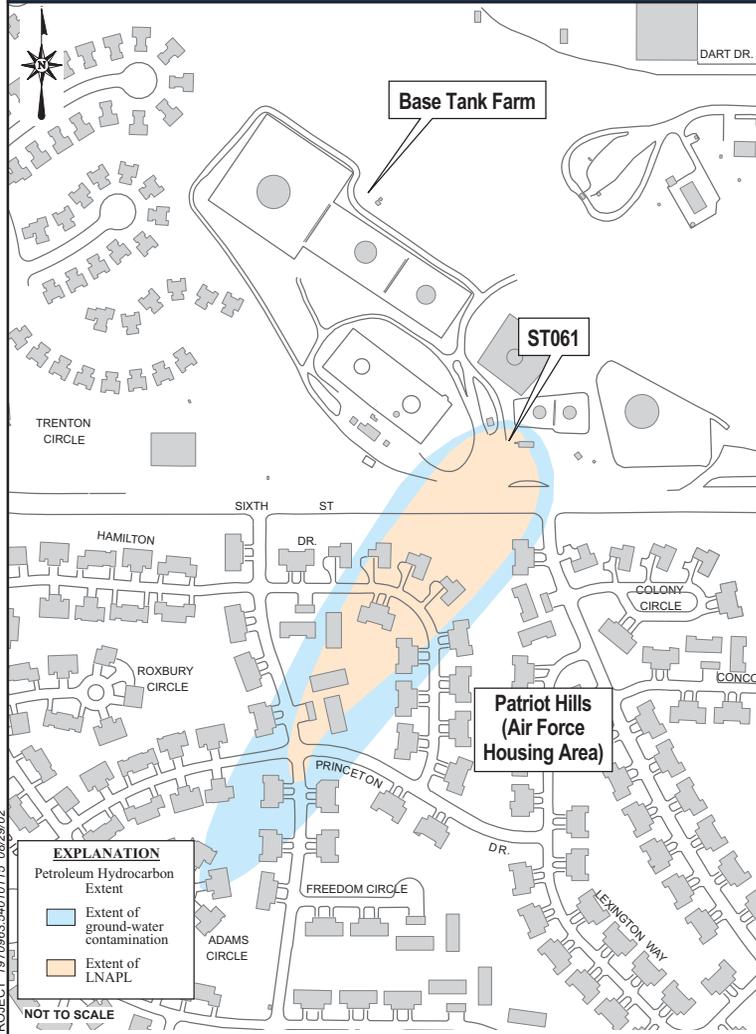
Site 870

(IRP Site: ST061)

Program Manager: Shannon Hayhurst



Contaminants of Concern — Ground Water



Project Information Highlights

Site Summary

ST061: Site 870 — Active 1940's–Present; base tank farm pump house and slop UST.

- Fuel conveyance and storage activities adjacent to base tank farm for over 50 years.
- Site is being addressed under RCRA.
- Potential sources have included a jet fuel slop tank that was in use from 1970–1991, and unknown quantities of abandoned pipe associated with main pump house at the tank farm.
- Jet fuel and diesel have impacted soil and ground water at the site and ground water beneath the adjacent base housing area.
- Remedial actions and technology demonstrations began in 1992 (active and passive jet fuel recovery, bioventing, natural attenuation monitoring, and residential vapor monitoring). Natural attenuation monitoring is on-going.

Cleanup Progress

Treatment to Date

Soil: Not applicable
Ground water: Not applicable

Contaminant Removal to Date

Soil: Not applicable
Ground water: 138 gallons (NAPL)

Public Relations

City Council Meetings

None to date

Information Fairs (public meetings)

None to date

Other Public Involvement

None to date



Building 43

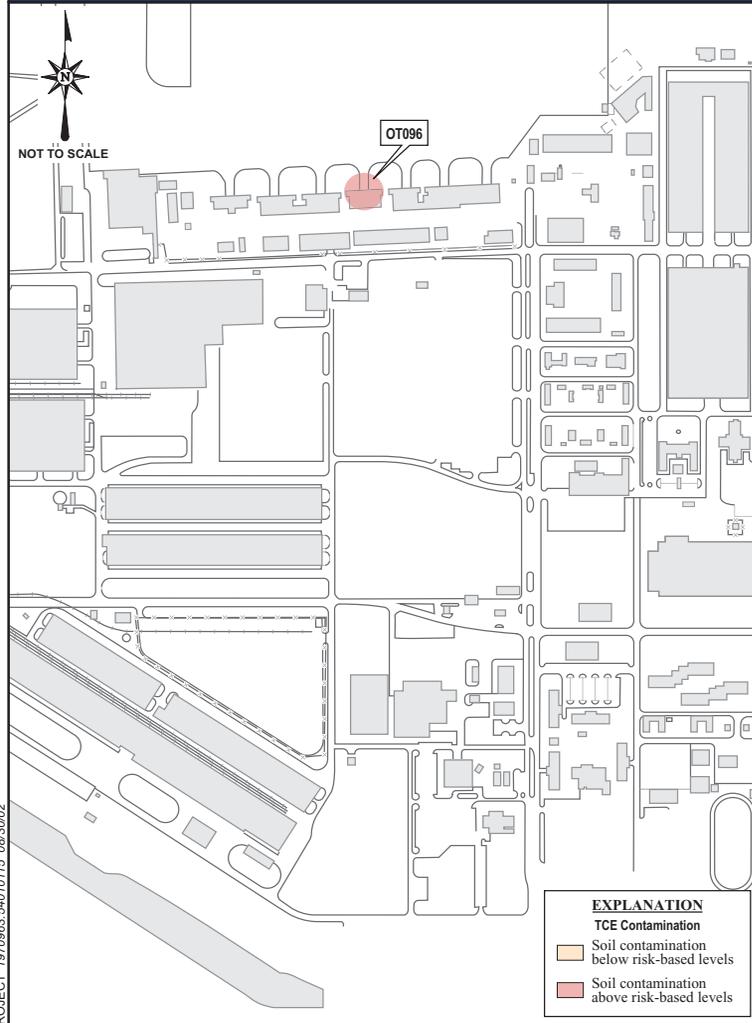
(IRP Site: OT096)

Program Manager: Shannon Hayhurst



Contaminants of Concern — Soil

Benzene, Toluene, TPH



Project Information Highlights

Site Summary

OT096: Building 43 —Oil water separator active 1957–1999. Bioventing system installed in 1999 and currently active.

- Investigations began in 1995 for OT096.

Cleanup Progress

Treatment to Date

Soil: Not applicable
Ground water: Not applicable

Contaminant Removal to Date

Soil: Not applicable
Ground water: Not applicable

Public Relations

City Council Meetings

None to date

Information Fairs (public meetings)

None to date

Other Public Involvement

None to date



Building 914

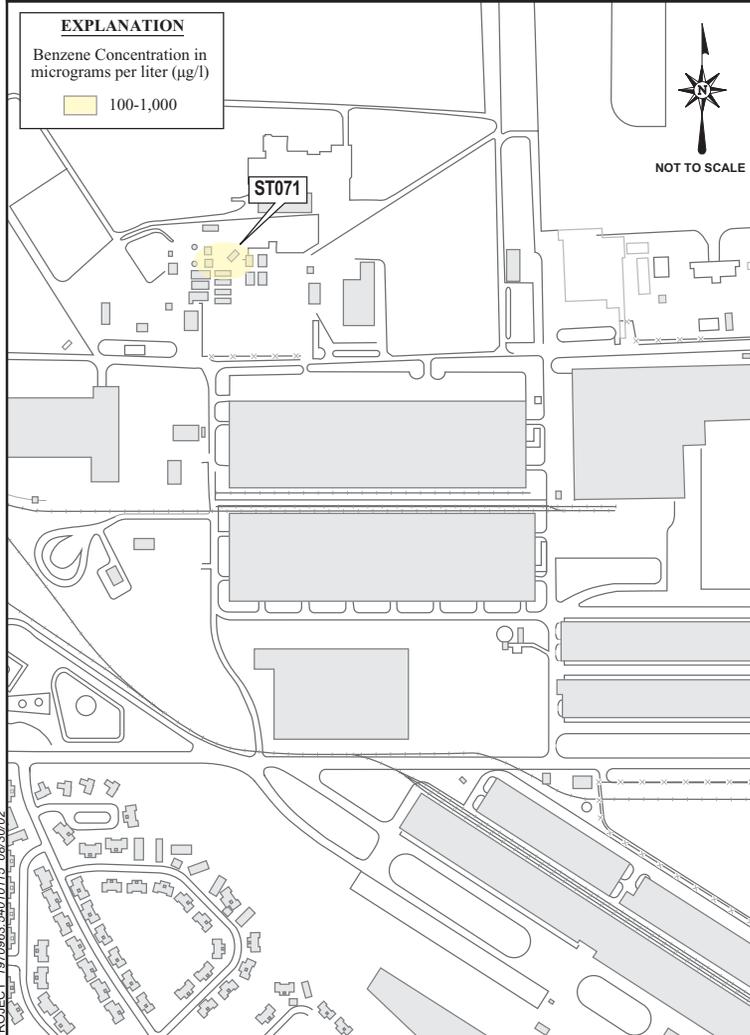
(IRP Site: ST071)

Program Manager: Shannon Hayhurst



Contaminants of Concern — Ground Water

Benzene, Toluene at OT097 and ST071 (Chlorinated solvents at OT097)



Project Information Highlights

Site Summary

ST071: Building 914 — Active 1942–Present; jet fuel transfer facility and sloop tank.

- Investigations began in 1985 at ST071.
- Soil is impacted at all sites while perched ground water is impacted at ST071.
- Since 1985 bioventing, dual phase extraction, ground-water recovery, and SVE have been utilized. SVE was completed and shut down.

Cleanup Progress

Treatment to Date

Soil: Not applicable
Ground water: Not applicable

Contaminant Removal to Date

Soil: 67 pounds
Ground water: Not applicable

Public Relations

City Council Meetings

None to date

Information Fairs (public meetings)

None to date

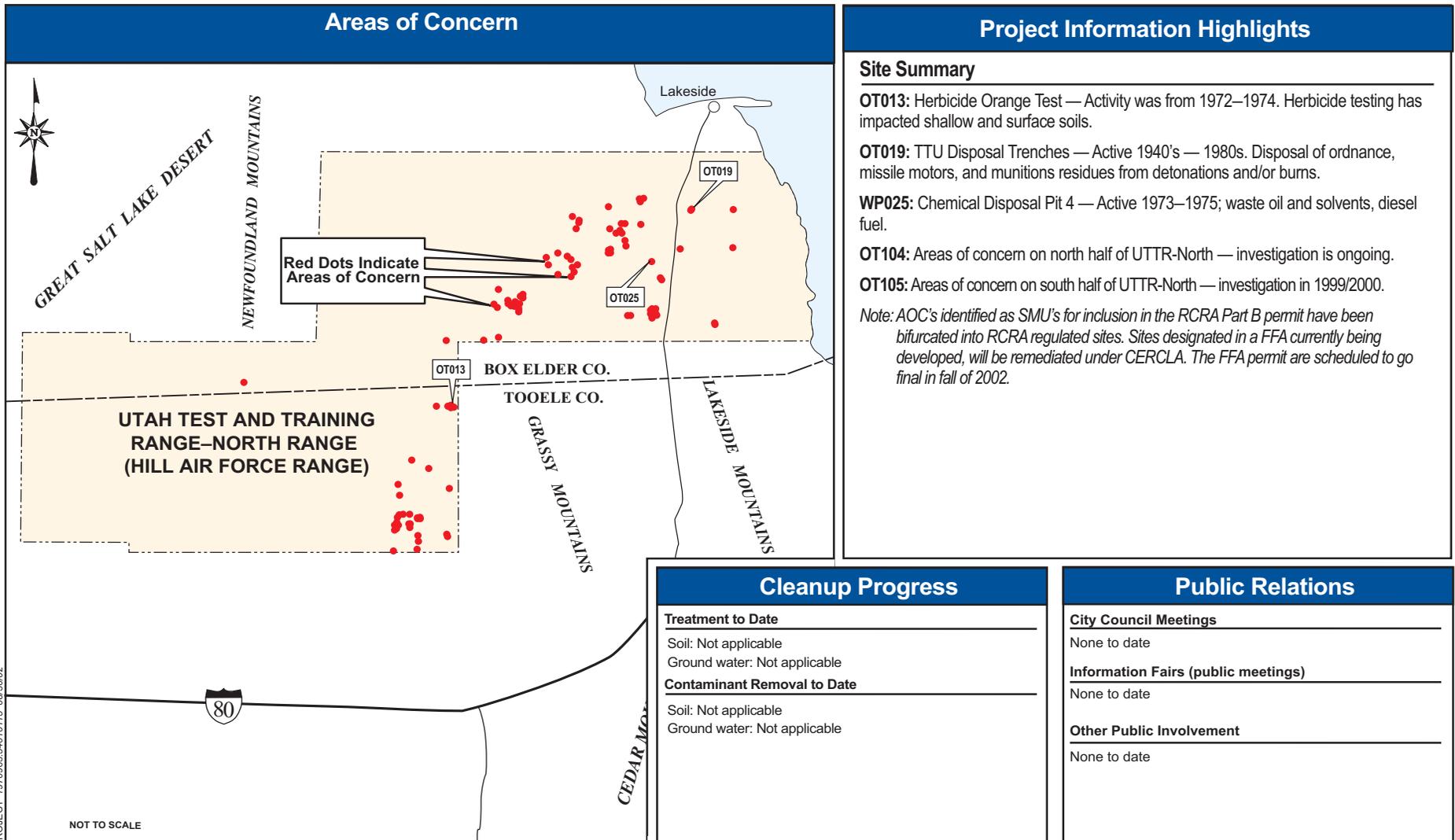
Other Public Involvement

None to date



UTTR-North

(IRP Sites: OT019, WP025, OT104, and OT105)
 Program Manager: Steve Hicken

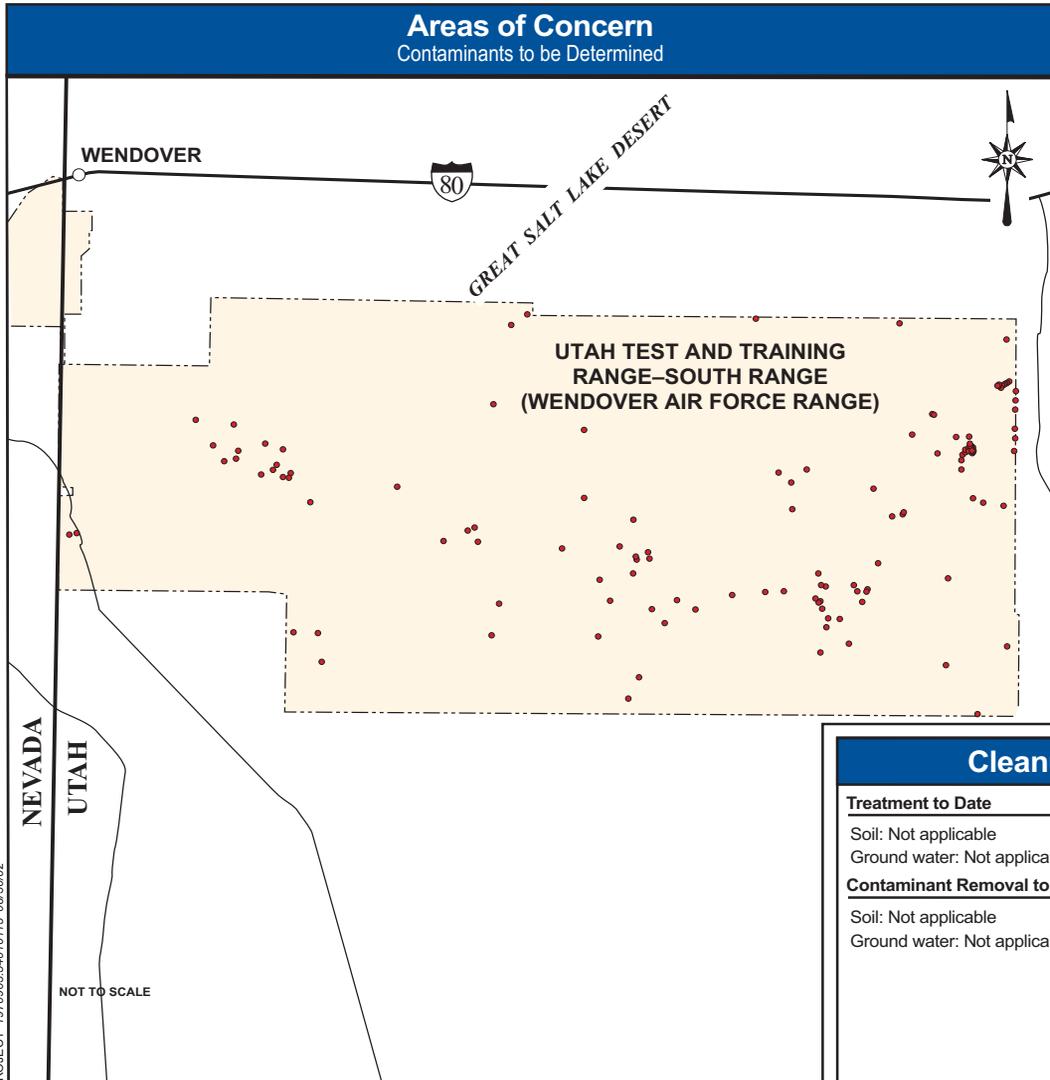


PROJECT 1970963.54070115 08/30/02
 Figure 2-69



UTTR-South

(IRP Sites: OT102 and OT103)
Program Manager: Steve Hicken



Project Information Highlights

Site Summary

OT102: AOIs on east side of UTTR-South. Preliminary Assessment completed in 1999.

OT103: AOIs on west side of UTTR-South. Preliminary Assessment completed in 1999.

Draft FFA for South Range under review. Completion anticipated in 2002.

Cleanup Progress

Treatment to Date
Soil: Not applicable
Ground water: Not applicable
Contaminant Removal to Date
Soil: Not applicable
Ground water: Not applicable

Public Relations

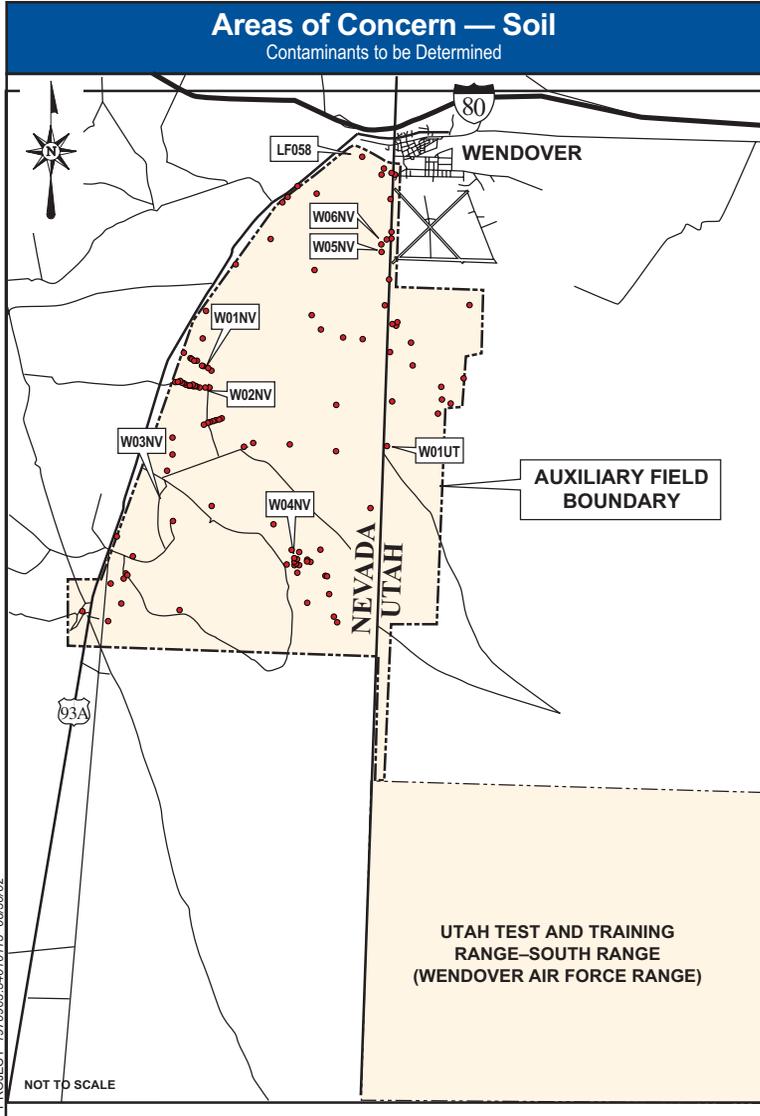
City Council Meetings
None to date
Information Fairs (public meetings)
None to date
Other Public Involvement
None to date



Wendover Air Force Auxiliary Field

(IRP Site: LF058 and other AOC's)

Program Manager: Steve Hicken



Project Information Highlights

Site Summary

LF058: Landfill — Active 1940's-1982; solid waste.

- Final report completed. Anticipate closure in 2002.

W01NV; W02NV: Sodium cyanide drums. Closed January 2002.

W03NV: Disturbed area. Closed January 2002.

W04NV: Snoopy craters. UXO present. Anticipated closure 2003.

W05NV: Elongated mound with debris. Closed May 2002.

W06NV: Former evaporation pond. Closed January 2002.

W01UT: Potential UXO. Site to be monitored.

Note: Land transfer of Nevada properties to city and tribes under consideration.

Cleanup Progress

Treatment to Date

Soil: Not applicable
Ground water: Not applicable

Contaminant Removal to Date

Soil: Not applicable
Ground water: Not applicable

Public Relations

City Council Meetings

None to date

Information Fairs (public meetings)

None to date

Other Public involvement

None to date

2.6 FUNDING AND SCHEDULES

2.6.1 Funding

The approved Fiscal Year 2002 (FY02) IRP budget is presented on Table 2-6.

The funding comparison between FY01 and FY02 reflects an decrease in RAC activities in FY02. This decrease is associated with the construction of a remediation system at OU 1 in FY 01. A significant amount of funding in 2002 is to meet RI/FS needs at OUs 5, 10, 11, and 12. The overall distribution of funds for the next nine years, as shown in Table A-2, demonstrates that most study and construction projects will be complete by the year 2006 and that O&M costs will be the primary budgetary emphasis from that year into the future.

2.6.2 Schedules

The Hill AFB IRP Master Schedules for Operable Units and other sites are presented in Figures 2.6aa through 2.6ss. These represent EMR's best estimate of the scheduled activities under the IRP. These Master Schedules are intended for use as overall indicators of the status of the Hill AFB IRP.

The ability of the Restoration Team to meet the schedule milestones depends primarily on five factors (listed below) which are addressed during all project meetings and are periodically reviewed with EPA and UDEQ.

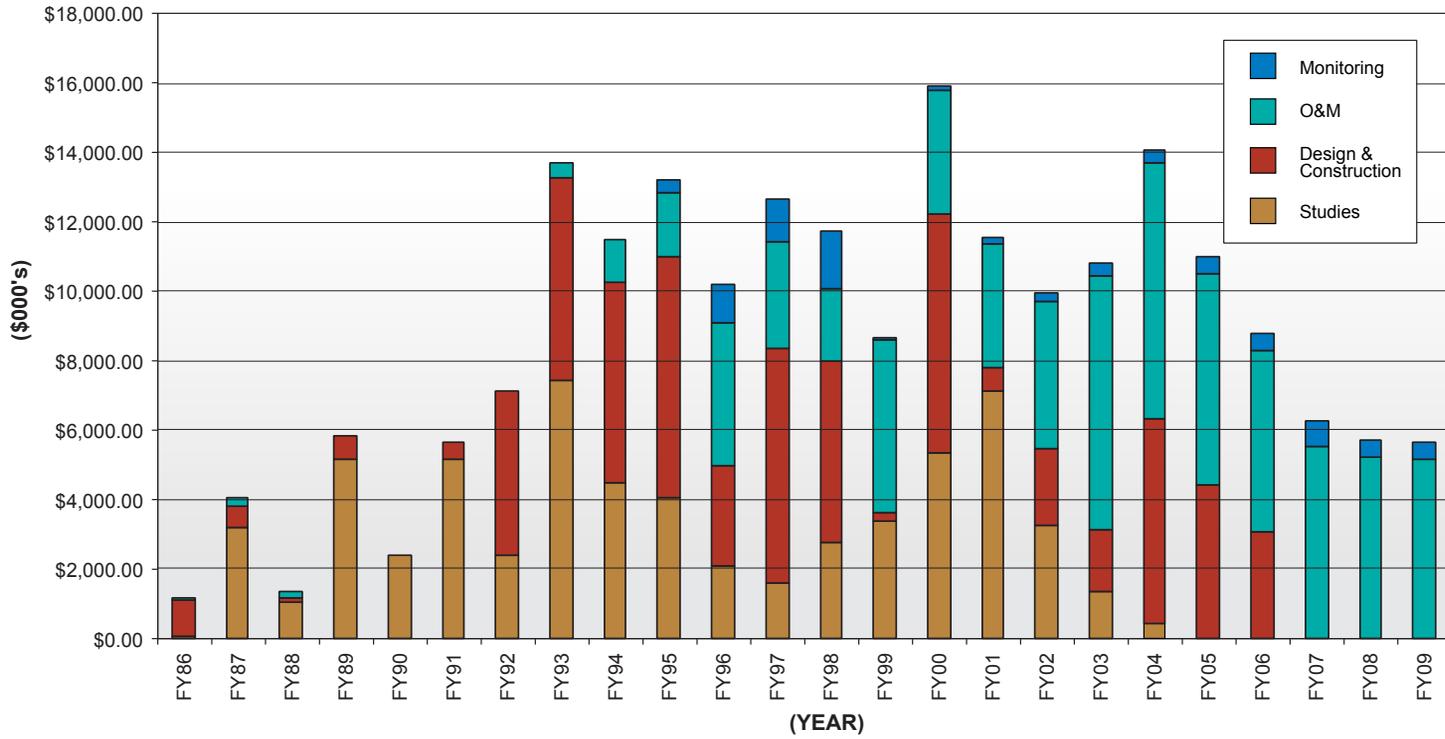
- *Efficient management of contamination sources, Interim Remedial Actions (IRAs), and technology demonstrations;*
- *Timely completion of scheduled RI, baseline risk assessment, FS, and other deliverables within OU areas;*
- *Adequacy of current conceptual models used as the basis for projecting future activities and their duration;*
- *Availability of funding as required for planned sequencing;*
- *Ability of oversight agencies to meet these schedules.*

**TABLE 2-4
FY02 IRP BUDGET**

Base Priority	Project Number	Project Description	Phase	Cost (\$000)	Cumulative Cost (\$000)
1	KRSM020800	Program Overhead Costs	MGT	1,823	1,823
2	KRSM020809	Basewide System Operations	IRA-O	3,834	5,657
2	KRSM020810	Basewide Remedial Actions Operations	RA-O	831	6,488
2	KRSM020811	Basewide Long Term Monitoring	LTM	518	7,006
7	KRSM020812	Sediment Removal Pond 1	IRA-C	697	7,703
4	KRSM020813	GW EE/CA Phase II at OU5	IRA-C	708	8411
5	KRSM020815	FS	FS	1,193	9,604
5	KRSM020816	ROD/DD	ROD/DD	80	9,684
8	KRSM020817	North and South UTTR Inspections	SI	116	9,800
5	KRSM020818	RI	RI	3,282	13,082
9	KRSM020819	Passive Venting at Chem Pit 4	IRA-C	150	13,232
3	KRSM020821	OU12 Groundwater Containment IRA-C	IRA-C	582	13,814

Priority Criteria

- | | |
|---|--|
| 1 | Administrative — Salaries, Computer, MAP, etc. |
| 2 | Long Term Operations and Long Term Monitoring |
| 3 | Groundwater plume containment at base boundary to prevent plume from getting worse; off base exposure identified |
| 4 | Collection and retraction of plume off-base; no exposure identified, no immediate health threat, potential in the future |
| 5 | Study of basewide sites that do not yet have remedial actions identified in a Record of Decision |
| 6 | Dewatering system for OU8 programmed as priority 6 was later determined to be unnecessary |
| 7 | On base cleanup / control of source area(s) not impacting off-base areas |
| 8 | Study of low risk sites with no regulatory deadlines |
| 9 | Cleanup / control of source area(s) on North UTTR not impacting off-base areas |



HILL AIR FORCE BASE
 DISTRIBUTION OF EMR FUNDING
 FIGURE 2-7



Section 3



3.0 STRATEGIES

The Restoration Team has a proven strategy for prioritizing and implementing its restoration program. These efforts include stakeholder involvement, potential reduction, early actions, innovation, cost reduction, and effective data management.

3.1 STAKEHOLDER INVOLVEMENT

The establishment of a 23 member RAB in 1995 has promoted a significant level of stakeholder involvement by members of the communities that surround the Base. The RAB meets four to six times each year and it has been the source of critical stakeholder input into the restoration process. Many RAB discussions have helped to shape restoration projects to meet stakeholder needs. The RAB has developed several focus groups to develop a better understanding of technical issues and address specific issues, such as early remedies and risk of contamination to public health. It is the intent of Hill AFB to continue early involvement of stakeholders to help ensure a well orchestrated and properly prioritized restoration program on the Base and in the affected communities. Hill AFB frequently holds Info-Fairs with members of its surrounding communities to keep communities informed about restoration activities and to encourage early involvement in the cleanup process. The community has provided valuable input on technical issues as well as identified public concerns. RAB members have contributed significant time and energy during these meetings as a resource to the community. These meetings are scheduled as new information arises and typically include topics such as contaminant levels, health issues, as well as cleanup plans and progress. The project managers from the Base also meet with the six surrounding city councils to update civic leaders on project progress.

3.2 PROJECT STAFFING

The current EMR staff has been selected based on their technical background as well as their abilities to manage and communicate technical issues to stakeholders. Over the past decade, EMR has benefited from commitments by a qualified staff, whose technical interests and abilities range from innovative technology to environmental engineering to construction and operation of remedial systems. Most have graduate degrees in environmental engineering.

In January 1999, the administrative and operational structure of EMR was changed. The new structure was initiated to address changing technical and management needs as the

Base restoration program matures. These included a need to integrate investigation strategic treatment system operational approaches. It improved long-term strategic planning and added focus to achieving cleanup goals. Key to this structure is two program managers. One focuses on investigations and the other on treatment system design, construction and operation. They have responsibility to develop short- and long-range strategies, integrate actions both inside and between operable units, develop remedial action objectives and performance verification criteria. Projects managers are then able to focus on project specific details such as investigation approaches, feasibility studies, treatment system optimization, design and construction. They may have responsibility for similar projects across a number of operable units.

3.3 CONTRACTING

The Restoration Program uses a variety of contracts and contract vehicles to execute projects. These include Indefinite Delivery/Indefinite Quantity delivery order mechanisms administered by two primary sources: Hill AFB's Operational Contracting Division, and the Air Force Center for Environmental Excellence. These contract vehicles include Architect-Engineer (A-E) contracts have been awarded to competent contractors. This approach allows EMR and other EM project managers to identify appropriate firms to carry out various projects. Currently EM has six local A/E contracts (one small, one small disadvantaged, and four large businesses). In addition the A/E contracts EM has four construction and operational contracts providing a means to construct and operate remedial systems on a *best value* basis.

These contracts combined with AFCEE resources provide a tremendous capability to execute the highly complex projects that fall with the responsibility of the Restoration Program.

3.4 PRIORITIES (WORST FIRST)

Each year the Base prioritizes projects based on a system that focuses on sites with the most significant problems. The RAB reviews and provides input on priorities. Strong funding support from the Air Force Materiel Command Head Quarters has kept the lower priority projects moving forward with little need to cancel projects. The underlying tenet of both the RAB and EMR is to address sites that pose the highest potential risk to human health or the environment via interim actions and removal actions, regardless of the type of regulatory environment. By attacking the worst sites first, taxpayer dollars are focused on projects that will provide the greatest and most immediate benefit for the entire Hill AFB community.

3.5 LIFE CYCLE COSTING

The Restoration Team has built the cleanup approaches on life-cycle cost concepts. It will continue to evaluate the performance of its present remedial systems with an objective of effectiveness and reduction of future costs through measures such as simplification, substitution, or reduction. In addition to inward evaluations, EMR will continue to search for, test, and reevaluate both established and innovative technical approaches to reduce current and long-term costs.

3.6 INNOVATIVE TECHNOLOGIES

As detailed in Appendix E, Hill AFB and several of its contractors have a rich history for the evaluation and implementation of innovative technologies. This approach has provided the Base a means for identifying remedies that may be more effective and less costly over their life cycle. Over the past five years Hill has sponsored innovative technology projects that have brought over ten million dollars of outside funded projects to the Base which have made significant progress towards cleanup. Hill AFB intends to continue its leadership role within the Air Force in these areas of innovation.

3.7 REDUCTION IN OPERATION AND MAINTENANCE COSTS

The consolidation of O&M of treatment systems based on technical discipline has been implemented at Hill AFB. For example, telemetry systems for several ground-water remediation systems across the Base are being integrated and may be either expanded or replicated for systems at other locations. This integration will provide a more compact and efficient system for monitoring and evaluating the performance of the various systems. In addition the consolidation of treatment system operations has been accomplishing significant cost savings.

Hill AFB has also negotiated agreements with districts to allow direct discharge of groundwater from cleanup sites into sewer systems with treatment being accomplished at the local sewer plants. This reduces operational costs dramatically. It is also utilizing extraction systems with direct discharge to local sewer lines and plants for final treatment. This has dramatically reduced operation and maintenance costs associated with building and operating separate treatment systems. Focus will continue on optimizing operating treatment systems.

3.8 DATA MANAGEMENT

In 1990, the apparent size of the Hill AFB IRP made it obvious that EMR needed a technical information system (TIS) to provide for efficient management and manipulation of several million data records. This was accomplished by designing a geographical information system (GIS) that is linked with environmental databases which can be accessed by users through a local area network (LAN). This system was designed to be compatible with the Air Force Center for Environmental Excellence (AFCEE) guidance for data management under the Installation Restoration Program Information Management System (IRPIMS; recently renamed as ERPIMS in which "Environmental" has replaced "Installation").

As sites mature and the need arises to evaluate trends in analytical data, the GIS can provide a robust means of storing and retrieving information that will hopefully further streamline O&M and life cycle costs for Base-wide remedial efforts.

3.9 RANGE AND OTHER PROPERTY CLEANUPS

As described previously, Hill AFB also has responsibilities for three other facilities, the Utah Test and Training Range (UTTR), Little Mountain Test Annex (LMTA), and Wendover Air Force Auxiliary Field (WAFAP), that have significance with respect to the IRP. Each facility has a slightly different regulatory framework. This creates additional administrative burdens resulting in increased cost. In addition, the UTTR, operated as a munitions test and training facility on nearly one million acres in western Utah. It will be affected by the current debate between the DOD and EPA as well as state agencies and other stakeholders over management of munitions and unexploded ordinance (UXO) on active as well as closed, closing, or transferring ranges. These issues will have implications to current IRP investigations which are underway at UTTR. Historically, the primary IRP focus has been at Hill AFB due to its inclusion on the National Priority List and the large population surrounding the Base. With the maturing of the restoration program at Hill AFB, resources are now being focused on these more remote sites. Hill AFB has proposed to UDEQ and EPA its preference to continue investigation and cleanup of sites identified at these facilities under its lead agency authority as stipulated under CERCLA. A RCRA permit at the Northern part of UTTR complicates this approach. It is expected that successful negotiation of an agreement with the State of Utah will be achieved. As these negotiations continue, Hill AFB will continue to conduct investigations of areas that are of concern to the stakeholders.

3.10 PAPERLESS REPORTING

Large numbers of reports have been written evaluating the sites within the IRP to document decision processes, as well evaluate the operation and adequacy of treatment systems. Hard copies of these reports are routinely produced and distributed to interested stakeholders which creates a significant generation of printed material.

All reports for the Hill IRP have been scanned and converted to a PDF format. These reports are available on the web or through other data sources. All future reports will be submitted to the AF in an electronic format with the intention of direct loading to the Hill AFB Web site www.em.hill.af.mil. This will provide a simplified method for stakeholders to access cleanup documentation. Modification of the GIS database is also underway to accept data via telemetry from remediation systems, further reducing hard copy reporting requirements. Project engineers will have routine access to these data on virtually a real time basis.

3.11 PERFORMANCE MONITORING AND VERIFICATION

Part of ensuring a remedial action is effective is the development of clear treatment system objectives and a system of long-term performance monitoring. Hill AFB has developed a strategy for defining these through reports known as *Performance Standards and Verification Plans* which are prepared for each major site or Operable Unit. A schedule for evaluation of sites is set and a *Performance Standards and Verification Report* then tracks and evaluates progress of each major site. The frequency of these reports are based on specifics of each site (i.e. groundwater velocity, expected remediation time frames, etc.).

Section 4

4.0 ISSUES

This section summarizes management and technical issues that are relevant to the present and future success of the Hill AFB IRP. Action items are identified for evaluation by the Restoration Team.

4.1 REAL ESTATE

Ground-water contaminant plumes extend into seven of the communities surrounding the Base. There are more than 1,000 acres of off-Base property that have been affected by this contamination. Real estate agreements are necessary to facilitate access to these off-Base properties so that testing locations and restoration systems can be placed efficiently and with minimal impacts to the landowner. These agreements generally take the form of rights of entry, leases, or easements. As a first option, the Base attempts to gain rights of entry on public property owned by the local cities or the State of Utah. For example, the majority of monitoring wells outside of the Base have been placed in city streets or public right-of-ways. In some cases this is not possible and agreements are negotiated with private landowners. Significant coordination with landowners is required to avoid placing wells or treatment systems in locations that affect property use. Often times private landowners pay for legal council in this process without compensation. Approval is required on real estate transactions at the Base level and above. This effort is labor intensive for both the AF and property owner and can take many months to complete.

Proposed action. Advance planning and close coordination between AF project managers and contractors is required to avoid significant project delays. The Hill staff must continue to foster the cooperative relationships that currently exist with local cities to ensure access to public property continues to be viable.

4.2 MONITORED NATURAL ATTENUATION

Monitored natural attenuation is a cleanup strategy that relies on natural process to remediate contaminated areas; it involves close monitoring and tracking of naturally occurring changes within a contaminated area without physical treatment systems. The approach includes, but is not limited to, biological and chemical reactions that break the contaminant down as well as dispersion, volatilization, and immobilization. This approach

is often beneficial to local communities because it is much less intrusive than physical treatment systems where wells, pipelines, and treatment systems are constructed. Members of the Restoration Team continuously look for opportunities where monitoring of natural attenuation can be applied. Presently natural attenuation is being implemented at a number of fuel spill sites on the Base as well as off-Base parts of OU 1 and OU 6.

The key challenges associated with this cleanup approach include:

- *Documenting that natural processes are at work to remove contaminants from the ground-water system*
- *Developing contingency plans to apply more physically aggressive approaches if monitored natural attenuation does not produce the necessary results*
- *Helping stakeholders understand that this is not a “do nothing” approach and that a significant effort is undertaken to monitor the site. Monitoring is essential to ensure that levels of contamination are being reduced and the risk to human health and the environment is acceptable.*

Proposed Action. A continued effort will be undertaken to provide information to stakeholders to help them understand natural attenuation. EMR will also continue its commitment to track new developments in natural attenuation and to support applied research and studies at our sites to better understand the limitations that may exist.

4.3 REGULATORY INTERFACES

The Restoration Program functions best when representatives from EPA and UDEQ are integrated into the decision making process and a sentiment of trust and understanding exists. The success of Hill’s IRP is attributed in large measure to the cooperative nature fostered between the Base and the regulatory agencies and represent a significant commitment by all parties to reach milestones together.

Proposed Action. The relationship noted above will continue to be fostered. Hill AFB is committed to continue in open dialogue and in a spirit of trust and partnership with the regulatory agencies, as well as other stakeholders to find solutions to the restoration of the Base’s IRP sites.

4.4 TECHNICAL STAFFING

EMR has a strong history of attracting highly qualified staff to manage these restoration projects. The majority of the staff has advanced (MS/Ph.D.) degrees. This is one of the greatest factors in the success of the restoration program at Hill. The Base is currently undergoing an outsourcing study of several Base support functions under OMB Circular A-76. The Environmental Management Directorate is a part of this study. Decisions on outsourcing are currently scheduled to be made in October 2002. This has created a sense of employment uncertainty with restoration engineers and scientists, resulting in significant staff turnover since announcement of this initiative.

This is expected to accelerate as the decision point approaches, leading to potential problems in project continuity. Attraction of new staff is expected to become more difficult due to the uncertainty and potential short duration of the job.

Proposed action: A contingency plan is in place to utilize contract personnel in the event qualified federal employees cannot be attracted to work at the Base. In addition, the current EMR staff, as well as engineering consulting firms, must ensure project decisions are clearly documented to prevent loss of project continuity.

Appendix A

APPENDIX A

HISTORICAL AND FUTURE RESTORATION FUNDING

Appendix A

Historical and Future Restoration Funding

Tables A-1 and A-2 summarize historical and future (cost to complete) funding requirements at the site level for all IRP sites at Hill Air Force Base.

**TABLE A-1
PAST IRP SITE FUNDING
(1 of 2)**

Site	Activity	1981 (\$K)	1982 (\$K)	1983 (\$K)	1984 (\$K)	1985 (\$K)	1986 (\$K)	1987 (\$K)	1988 (\$K)	1989 (\$K)	1990 (\$K)	1991 (\$K)	1992 (\$K)	1993 (\$K)	1994 (\$K)	1995 (\$K)	1996 (\$K)	1997 (\$K)	1998 (\$K)	1999 (\$K)	2000 (\$K)
OU 1	Study	20	217	0	0	500	424	850	0	1839	278	0	895	550	350	0	0	0	0	0	0
	Design & Construct	0	0	1092	1282	1814	324	17	138	0	0	0	0	1500	1800	5041	4400	0	1077	0	5312
	O&M	0	0	0	0	0	0	281	72	75	0	126	200	0	0	2498	1500	0	13	1041	676
	Monitoring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1400	8	0	0
	Total Unit Funding	20	217	1092	1282	2314	748	1148	210	1914	278	126	1095	2050	2150	7539	5900	1400	1098	1041	5988
OU 2	Study	49	0	0	0	100	0	616	0	0	500	2045	253	600	300	0	0	0	53	53	0
	Design & Construct	0	0	0	0	0	304	0	0	162	0	52	4842	5300	500	700	2700	1087	1869	0	1575
	O&M	0	0	0	0	0	0	0	83	126	0	75	100	100	500	500	750	0	1066	0	1246
	Monitoring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	750	238	0	0
	Total Unit Funding	49	0	0	0	100	304	616	83	288	500	2172	5195	6000	1300	1200	3450	1837	3173	53	2821
OU 3	Study	49	84	0	0	400	0	1008	99	904	351	491	475	1500	475	0	0	0	0	0	0
	Design & Construct	0	0	0	246	77	660	154	0	0	0	0	100	350	525	600	210	2600	0	0	0
	O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	216	272	0
	Monitoring	0	0	0	0	0	0	0	1778	0	0	0	5770	7850	2300	0	0	4	210	45	75
	Total Unit Funding	49	84	0	246	477	660	2940	99	904	351	491	6345	9700	3300	600	210	2604	426	317	75
OU 4	Study	0	0	0	0	89	0	330	450	1236	300	1052	700	480	0	0	0	0	30	0	0
	Design & Construct	0	0	0	0	0	0	0	0	0	0	0	0	680	480	300	310	84	0	0	
	O&M	0	0	0	0	0	0	0	0	0	0	0	75	500	0	290	975	0	431	296	327
	Monitoring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500	550	803	0	0
	Total Unit Funding	0	0	0	0	89	0	330	450	1236	300	1052	775	980	680	770	1775	860	1348	296	327
OU 5	Study	0	0	0	0	267	0	300	0	465	235	1569	0	500	1399	0	26	0	180	1428	1529
	Design & Construct	0	0	0	0	0	0	0	0	0	0	0	0	0	1020	976	735	1192	515	260	0
	O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112	0	0	535	351
	Monitoring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	235	0	0	0
	Total Unit Funding	0	0	0	0	267	0	300	0	465	235	1569	0	500	2419	976	873	1427	695	2223	1879
OU 6	Study	0	0	0	0	0	0	0	349	0	370	0	622	978	1284	200	0	0	0	0	0
	Design & Construct	0	0	0	0	0	0	0	0	0	0	0	0	0	900	1089	0	1035	789	0	0
	O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	0	249	931	557
	Monitoring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	439	150	133	0	0
	Total Unit Funding	0	0	0	0	0	0	0	349	0	370	0	622	978	2184	1289	479	1185	1171	931	557
OU 7	Study	0	0	0	0	220	0	0	0	95	0	0	310	1900	437	0	0	0	0	0	0
	Design & Construct	0	0	0	0	0	0	0	0	265	0	0	0	0	0	0	10	183	0	0	0
	O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Monitoring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	35	37	28
	Total Unit Funding	0	0	0	0	220	0	0	0	360	0	0	310	1900	437	0	10	222	35	37	28
OU 8	Study	0	0	0	0	220	0	0	0	95	0	310	310	1900	0	1098	970	650	765	542	1163
	Design & Construct	0	0	0	0	0	0	0	0	265	0	0	0	0	0	1220	1860	250	435	0	0
	O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	335	252
	Monitoring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Unit Funding	0	0	0	0	220	0	0	0	360	0	310	310	1900	0	2318	2830	900	1200	877	1415
OU 9	Study	0	0	0	0	0	30	0	0	0	243	474	1312	3982	182	3534	563	175	703	600	141
	Design & Construct	0	0	0	0	0	30	245	0	277	15	0	0	0	0	0	0	0	235	0	0
	O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
	Monitoring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Unit Funding	0	0	0	0	0	60	245	0	277	258	474	1312	3982	182	3534	563	175	938	609	141

**TABLE A-1
PAST IRP SITE FUNDING
(2 of 2)**

Site	Activity	1981 (\$K)	1982 (\$K)	1983 (\$K)	1984 (\$K)	1985 (\$K)	1986 (\$K)	1987 (\$K)	1988 (\$K)	1989 (\$K)	1990 (\$K)	1991 (\$K)	1992 (\$K)	1993 (\$K)	1994 (\$K)	1995 (\$K)	1996 (\$K)	1997 (\$K)	1998 (\$K)	1999 (\$K)	2000 (\$K)	
OU 10	Study	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	368	
	Design & Construct	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
	O&M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62
	Monitoring	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
	Total Unit Funding	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	430
OU 11	Study	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390
	Design & Construct	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
	O&M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
	Monitoring	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
	Total Unit Funding	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390
OU 12	Study	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
	Design & Construct	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
	O&M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
	Monitoring	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
	Total Unit Funding	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Underground Storage Tanks	Study	0	0	0	0	0	30	0	0	0	243	474	1312	3982	0	0	0	0	0	0	0	0
	Design & Construct	0	0	0	8	0	0	0	0	0	0	0	0	0	2500	1050	65	100	0	0	0	0
	O&M	0	0	0	0	0	30	245	0	277	15	0	0	0	0	0	330	0	94	116	122	
	Monitoring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	228	235	0	0	
	Total Unit Funding	0	0	0	8	0	60	245	0	277	258	474	1312	3982	2500	1050	395	328	329	116	122	
Wendover UTTR	Study	0	0	0	0	175	87	517	137	60	100	0	0	0	0	1750	2450	773	1	0	875	
	Design & Construct	0	0	0	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	
	Monitoring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Total Unit Funding	0	0	0	43	175	87	517	137	60	100	0	0	0	0	1750	2450	773	1	3	875	
Little Mountain	Study	0	0	0	0	89	0	150	0	217	0	0	1023	0	0	0	0	0	300	0	239	
	Design & Construct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2900	0	0	0	0	
	Monitoring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Total Unit Funding	0	0	0	0	89	0	150	0	217	0	0	1023	0	0	0	2900	0	300	0	239	
IRA/RA Operation and Maintenance	Total Funding	0	0	0	0	0	0	0	0	0	0	0	400	1400	1885	0	1563	2099	-	-		
PA/SI - New Sites	Total Funding	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Program Expenses	Staffing	0	0	0	0	0	0	0	0	0	0	0	1400	1500	1924	1250	1172	1195	-	-		
	SGB Support	0	0	0	0	0	0	0	0	0	0	0	235	250	345	350	174	388	-	-		
	TDY/Admin	0	0	0	0	0	0	0	0	0	0	0	175	120	133	100	33	43	-	-		
	FFA/IAG	0	0	0	0	0	0	0	0	0	0	0	550	0	200	200	175	236	-	-		
	MAP	0	0	0	0	0	0	0	0	0	0	0	0	42	60	25	51	0	-	-		
	IRP Computer Support	0	0	0	0	0	0	0	0	0	0	0	0	0	0	390	425	76	80	-	-	
	Computer	0	0	0	0	0	0	0	0	0	0	0	0	0	24	55	50	33	37	-	-	
	Total Unit Funding	0	0	0	0	0	0	0	0	0	0	0	0	2360	1936	3107	2400	1714	1979	-	-	

(a) No figures available for the amount actually spent. Dollars expended assumed equal to the amount funded.

**TABLE A-2
FUNDING SCHEDULE TO COMPLETE
(1 of 7)**

Site ID	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10 to Finish	Total
MAJCOM: AFMC Installation: HILL									
LF001	\$112,000	\$62,000	\$64,000	\$64,000	\$67,000	\$122,000	\$72,000	\$3,280,000	\$3,843,000
RA-O	\$112,000	\$62,000	\$64,000	\$64,000	\$67,000	\$122,000	\$72,000	\$3,280,000	\$3,843,000
WP002	\$574,000	\$1,017,000	\$2,117,000	\$1,629,000	\$1,117,000	\$917,000	\$804,000	\$26,376,000	\$34,551,000
RD	\$0	\$0	\$200,000	\$0	\$0	\$0	\$0	\$0	\$200,000
RA-C	\$0	\$0	\$0	\$600,000	\$0	\$0	\$0	\$0	\$600,000
IRA-C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
IRA-O	\$574,000	\$1,017,000	\$1,917,000	\$1,029,000	\$0	\$0	\$0	\$0	\$4,537,000
RA-O	\$0	\$0	\$0	\$0	\$1,117,000	\$917,000	\$804,000	\$26,376,000	\$29,214,000
LF003	\$282,000	\$262,000	\$264,000	\$264,000	\$267,000	\$372,000	\$272,000	\$11,280,000	\$13,263,000
RA-O	\$282,000	\$262,000	\$264,000	\$264,000	\$267,000	\$372,000	\$272,000	\$11,280,000	\$13,263,000
ST004	\$38,000	\$48,000	\$48,000	\$53,000	\$53,000	\$68,000	\$68,000	\$2,720,000	\$3,096,000
LTM	\$38,000	\$48,000	\$48,000	\$53,000	\$53,000	\$68,000	\$68,000	\$2,720,000	\$3,096,000
WP005	\$111,000	\$111,000	\$121,000	\$136,000	\$136,000	\$141,000	\$141,000	\$5,640,000	\$6,537,000
LTM	\$111,000	\$111,000	\$121,000	\$136,000	\$136,000	\$141,000	\$141,000	\$5,640,000	\$6,537,000
WP007	\$2,582,000	\$2,078,000	\$1,778,000	\$2,254,689	\$11,289,459	\$1,628,000	\$1,638,000	\$51,290,000	\$74,538,148
RD	\$0	\$0	\$0	\$616,689	\$0	\$0	\$0	\$0	\$616,689
RA-C	\$0	\$0	\$0	\$0	\$9,661,459	\$0	\$0	\$0	\$9,661,459
IRA-C	\$500,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$500,000
IRA-O	\$2,082,000	\$2,078,000	\$1,778,000	\$1,638,000	\$0	\$0	\$0	\$0	\$7,576,000
RA-O	\$0	\$0	\$0	\$0	\$1,628,000	\$1,628,000	\$1,638,000	\$51,290,000	\$56,184,000
WP008	\$1,270,000	\$1,300,000	\$675,000	\$520,000	\$4,200,000	\$10,800,000	\$1,100,000	\$21,000,000	\$40,865,000
RI	\$1,270,000	\$1,300,000	\$0	\$0	\$0	\$0	\$0	\$0	\$2,570,000
FS	\$0	\$0	\$675,000	\$0	\$0	\$0	\$0	\$0	\$675,000
ROD/DD	\$0	\$0	\$0	\$520,000	\$0	\$0	\$0	\$0	\$520,000
RD	\$0	\$0	\$0	\$0	\$200,000	\$0	\$0	\$0	\$200,000
RA-C	\$0	\$0	\$0	\$0	\$4,000,000	\$10,000,000	\$0	\$0	\$14,000,000
RA-O	\$0	\$0	\$0	\$0	\$0	\$800,000	\$1,100,000	\$21,000,000	\$22,900,000
FT009	\$166,000	\$568,000	\$1,668,000	\$1,184,000	\$668,000	\$468,000	\$334,000	\$7,828,000	\$12,884,000
RD	\$0	\$0	\$200,000	\$0	\$0	\$0	\$0	\$0	\$200,000
RA-C	\$0	\$0	\$0	\$600,000	\$0	\$0	\$0	\$0	\$600,000
IRA-C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
IRA-O	\$166,000	\$568,000	\$1,468,000	\$584,000	\$0	\$0	\$0	\$0	\$2,786,000
RA-O	\$0	\$0	\$0	\$0	\$668,000	\$468,000	\$334,000	\$7,828,000	\$9,298,000

**TABLE A-2
FUNDING SCHEDULE TO COMPLETE
(2 of 7)**

Site ID	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10 to Finish	Total
MAJCOM: AFMC Installation: HILL									
LF011	\$302,000	\$302,000	\$312,000	\$322,000	\$2,777,000	\$347,000	\$347,000	\$13,520,000	\$18,229,000
RA-C	\$0	\$0	\$0	\$0	\$2,445,000	\$0	\$0	\$0	\$2,445,000
IRA-O	\$302,000	\$302,000	\$312,000	\$322,000	\$232,000	\$0	\$0	\$0	\$1,470,000
RA-O	\$0	\$0	\$0	\$0	\$100,000	\$347,000	\$347,000	\$13,520,000	\$14,314,000
SS017	\$977,000	\$815,000	\$723,000	\$1,103,000	\$557,000	\$558,000	\$551,000	\$14,236,000	\$19,520,000
RI	\$427,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$427,000
FS	\$175,000	\$430,000	\$0	\$0	\$0	\$0	\$0	\$0	\$605,000
ROD/DD	\$0	\$25,000	\$0	\$0	\$0	\$0	\$0	\$0	\$25,000
RD	\$0	\$0	\$80,000	\$0	\$0	\$0	\$0	\$0	\$80,000
RA-C	\$0	\$0	\$0	\$430,000	\$0	\$0	\$0	\$0	\$430,000
IRA-C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
IRA-O	\$375,000	\$360,000	\$643,000	\$673,000	\$296,000	\$0	\$0	\$0	\$2,347,000
RA-O	\$0	\$0	\$0	\$0	\$261,000	\$558,000	\$551,000	\$14,236,000	\$15,606,000
OT019	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$200,000	\$235,000
LTM	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$200,000	\$235,000
ST022	\$67,000	\$17,000	\$17,000	\$17,000	\$17,000	\$67,000	\$17,000	\$591,000	\$810,000
RA-O	\$67,000	\$17,000	\$17,000	\$17,000	\$17,000	\$67,000	\$17,000	\$591,000	\$810,000
SD023	\$260,000	\$225,000	\$200,000	\$500,000	\$30,000	\$30,000	\$30,000	\$240,000	\$1,515,000
RI	\$260,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$260,000
FS	\$0	\$75,000	\$0	\$0	\$0	\$0	\$0	\$0	\$75,000
ROD/DD	\$0	\$150,000	\$50,000	\$0	\$0	\$0	\$0	\$0	\$200,000
RD	\$0	\$0	\$150,000	\$0	\$0	\$0	\$0	\$0	\$150,000
RA-C	\$0	\$0	\$0	\$500,000	\$0	\$0	\$0	\$0	\$500,000
LTM	\$0	\$0	\$0	\$0	\$30,000	\$30,000	\$30,000	\$240,000	\$330,000
WP025	\$100,000	\$50,000	\$70,000	\$70,000	\$70,000	\$70,000	\$70,000	\$170,000	\$670,000
ROD/DD	\$100,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100,000
RA-O	\$0	\$50,000	\$70,000	\$70,000	\$70,000	\$70,000	\$70,000	\$0	\$400,000
LTM	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$170,000	\$170,000
OT026	\$417,000	\$380,000	\$380,000	\$392,000	\$392,000	\$452,000	\$402,000	\$3,373,000	\$6,188,000
RA-O	\$417,000	\$380,000	\$380,000	\$392,000	\$392,000	\$452,000	\$402,000	\$2,408,000	\$5,223,000
LTM	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$965,000	\$965,000

**TABLE A-2
FUNDING SCHEDULE TO COMPLETE
(3 of 7)**

Site ID	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10 to Finish	Total
MAJCOM: AFMC Installation: HILL									
SS027	\$47,000	\$57,000	\$67,000	\$72,000	\$77,000	\$82,000	\$82,000	\$3,280,000	\$3,764,000
LTM	\$47,000	\$57,000	\$67,000	\$72,000	\$77,000	\$82,000	\$82,000	\$3,280,000	\$3,764,000
OT033	\$1,396,000	\$2,617,000	\$786,000	\$691,000	\$651,000	\$651,000	\$651,000	\$17,489,000	\$24,932,000
FS	\$1,173,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,173,000
RD	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
RA-C	\$0	\$2,349,000	\$0	\$0	\$0	\$0	\$0	\$0	\$2,349,000
IRA-O	\$223,000	\$268,000	\$268,000	\$0	\$0	\$0	\$0	\$0	\$759,000
RA-O	\$0	\$0	\$518,000	\$691,000	\$651,000	\$651,000	\$651,000	\$16,484,000	\$19,646,000
LTM	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,005,000	\$1,005,000
SD034	\$20,000	\$70,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$800,000	\$990,000
ROD/DD	\$20,000	\$70,000	\$0	\$0	\$0	\$0	\$0	\$0	\$90,000
LTM	\$0	\$0	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$800,000	\$900,000
SD040	\$75,000	\$50,000	\$75,000	\$125,000	\$65,000	\$65,000	\$65,000	\$1,585,000	\$2,105,000
FS	\$75,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$75,000
ROD/DD	\$0	\$50,000	\$0	\$0	\$0	\$0	\$0	\$0	\$50,000
RD	\$0	\$0	\$75,000	\$0	\$0	\$0	\$0	\$0	\$75,000
RA-C	\$0	\$0	\$0	\$125,000	\$0	\$0	\$0	\$0	\$125,000
RA-O	\$0	\$0	\$0	\$0	\$65,000	\$65,000	\$65,000	\$1,105,000	\$1,300,000
LTM	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$480,000	\$480,000
LF058	\$30,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$30,000
ROD/DD	\$30,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$30,000
ST061	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$390,000	\$530,000
RA-O	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
LTM	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$390,000	\$530,000
ST071	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$270,000	\$410,000
RA-O	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
LTM	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$270,000	\$410,000
WP080	\$198,000	\$166,000	\$166,000	\$166,000	\$166,000	\$216,000	\$166,000	\$7,040,000	\$8,284,000
RA-O	\$198,000	\$166,000	\$166,000	\$166,000	\$166,000	\$216,000	\$166,000	\$7,040,000	\$8,284,000

**TABLE A-2
FUNDING SCHEDULE TO COMPLETE
(4 of 7)**

Site ID	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10 to Finish	Total
MAJCOM: AFMC Installation: HILL									
SS089	\$283,000	\$163,000	\$213,000	\$313,000	\$198,000	\$198,000	\$198,000	\$5,112,000	\$6,678,000
FS	\$283,000	\$63,000	\$0	\$0	\$0	\$0	\$0	\$0	\$346,000
ROD/DD	\$0	\$100,000	\$48,000	\$0	\$0	\$0	\$0	\$0	\$148,000
RD	\$0	\$0	\$165,000	\$15,000	\$0	\$0	\$0	\$0	\$180,000
RA-C	\$0	\$0	\$0	\$298,000	\$0	\$0	\$0	\$0	\$298,000
RA-O	\$0	\$0	\$0	\$0	\$198,000	\$198,000	\$198,000	\$3,402,000	\$3,996,000
LTM	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,710,000	\$1,710,000
SS090	\$95,000	\$221,000	\$1,013,000	\$368,000	\$343,000	\$314,000	\$332,000	\$2,148,000	\$4,834,000
FS	\$95,000	\$80,000	\$0	\$0	\$0	\$0	\$0	\$0	\$175,000
RD	\$0	\$141,000	\$0	\$0	\$0	\$0	\$0	\$0	\$141,000
RA-C	\$0	\$0	\$1,013,000	\$0	\$0	\$0	\$0	\$0	\$1,013,000
RA-O	\$0	\$0	\$0	\$368,000	\$343,000	\$314,000	\$332,000	\$1,880,000	\$3,237,000
LTM	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$268,000	\$268,000
SS091	\$509,000	\$409,000	\$322,000	\$708,000	\$192,000	\$183,000	\$183,000	\$4,758,000	\$7,264,000
RI	\$404,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$404,000
FS	\$105,000	\$384,000	\$0	\$0	\$0	\$0	\$0	\$0	\$489,000
ROD/DD	\$0	\$25,000	\$0	\$0	\$0	\$0	\$0	\$0	\$25,000
RD	\$0	\$0	\$50,000	\$0	\$0	\$0	\$0	\$0	\$50,000
RA-C	\$0	\$0	\$0	\$400,000	\$0	\$0	\$0	\$0	\$400,000
IRA-C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
IRA-O	\$0	\$0	\$272,000	\$308,000	\$0	\$0	\$0	\$0	\$580,000
RA-O	\$0	\$0	\$0	\$0	\$192,000	\$183,000	\$183,000	\$4,758,000	\$5,316,000
OT096	\$30,000	\$10,000	\$10,000	\$10,000	\$30,000	\$10,000	\$10,000	\$10,000	\$120,000
RA-O	\$30,000	\$10,000	\$10,000	\$10,000	\$30,000	\$10,000	\$10,000	\$10,000	\$120,000
OT097	\$254,000	\$334,000	\$2,072,000	\$625,000	\$608,000	\$454,000	\$473,000	\$3,677,000	\$8,497,000
FS	\$224,000	\$100,000	\$0	\$0	\$0	\$0	\$0	\$0	\$324,000
RD	\$0	\$190,000	\$0	\$0	\$0	\$0	\$0	\$0	\$190,000
RA-C	\$0	\$0	\$2,028,000	\$0	\$0	\$0	\$0	\$0	\$2,028,000
IRA-O	\$30,000	\$44,000	\$44,000	\$44,000	\$0	\$0	\$0	\$0	\$162,000
RA-O	\$0	\$0	\$0	\$581,000	\$608,000	\$454,000	\$473,000	\$2,995,000	\$5,111,000
LTM	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$682,000	\$682,000
OT100	\$14,000	\$14,000	\$14,000	\$9,000	\$9,000	\$9,000	\$9,000	\$216,000	\$294,000
LTM	\$14,000	\$14,000	\$14,000	\$9,000	\$9,000	\$9,000	\$9,000	\$216,000	\$294,000

TABLE A-2
FUNDING SCHEDULE TO COMPLETE
(5 of 7)

Site ID	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10 to Finish	Total
MAJCOM: AFMC Installation: HILL									
OT102	\$152,000	\$65,000	\$69,000	\$46,000	\$46,000	\$46,000	\$46,000	\$1,840,000	\$2,310,000
RI	\$152,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$152,000
ROD/DD	\$0	\$65,000	\$0	\$0	\$0	\$0	\$0	\$0	\$65,000
LTM	\$0	\$0	\$69,000	\$46,000	\$46,000	\$46,000	\$46,000	\$1,840,000	\$2,093,000
OT103	\$150,000	\$65,000	\$69,000	\$46,000	\$46,000	\$46,000	\$46,000	\$1,840,000	\$2,308,000
RI	\$150,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$150,000
ROD/DD	\$0	\$65,000	\$0	\$0	\$0	\$0	\$0	\$0	\$65,000
LTM	\$0	\$0	\$69,000	\$46,000	\$46,000	\$46,000	\$46,000	\$1,840,000	\$2,093,000
OT104	\$1,200,000	\$600,000	\$90,000	\$400,000	\$3,000,000	\$50,000	\$59,000	\$2,360,000	\$7,759,000
SI	\$1,200,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,200,000
ROD/DD	\$0	\$600,000	\$0	\$0	\$0	\$0	\$0	\$0	\$600,000
LTM	\$0	\$0	\$90,000	\$400,000	\$3,000,000	\$50,000	\$59,000	\$2,360,000	\$5,959,000
OT105	\$300,000	\$85,000	\$65,000	\$200,000	\$20,000	\$59,000	\$59,000	\$2,360,000	\$3,148,000
SI	\$300,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$300,000
ROD/DD	\$0	\$85,000	\$0	\$0	\$0	\$0	\$0	\$0	\$85,000
LTM	\$0	\$0	\$65,000	\$200,000	\$20,000	\$59,000	\$59,000	\$2,360,000	\$2,763,000
OT106	\$179,000	\$254,000	\$179,000	\$179,000	\$179,000	\$179,000	\$179,000	\$1,630,000	\$2,958,000
LTM	\$179,000	\$254,000	\$179,000	\$179,000	\$179,000	\$179,000	\$179,000	\$1,630,000	\$2,958,000
SD107	\$1,950,000	\$2,396,000	\$906,000	\$2,623,000	\$1,642,000	\$532,000	\$442,000	\$11,492,000	\$21,983,000
RI	\$1,113,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,113,000
FS	\$705,000	\$829,000	\$0	\$0	\$0	\$0	\$0	\$0	\$1,534,000
ROD/DD	\$0	\$35,000	\$15,000	\$0	\$0	\$0	\$0	\$0	\$50,000
RD	\$0	\$0	\$220,000	\$0	\$0	\$0	\$0	\$0	\$220,000
RA-C	\$0	\$0	\$0	\$2,140,000	\$1,200,000	\$0	\$0	\$0	\$3,340,000
IRA-C	\$0	\$1,400,000	\$0	\$0	\$0	\$0	\$0	\$0	\$1,400,000
IRA-O	\$132,000	\$132,000	\$671,000	\$483,000	\$0	\$0	\$0	\$0	\$1,418,000
RA-O	\$0	\$0	\$0	\$0	\$442,000	\$532,000	\$442,000	\$11,492,000	\$12,908,000
SS108	\$57,000	\$70,000	\$751,000	\$206,000	\$199,000	\$178,000	\$185,000	\$1,397,000	\$3,043,000
RI	\$57,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$57,000
ROD/DD	\$0	\$48,000	\$0	\$0	\$0	\$0	\$0	\$0	\$48,000
RD	\$0	\$22,000	\$0	\$0	\$0	\$0	\$0	\$0	\$22,000
RA-C	\$0	\$0	\$751,000	\$0	\$0	\$0	\$0	\$0	\$751,000
RA-O	\$0	\$0	\$0	\$206,000	\$199,000	\$178,000	\$185,000	\$1,177,000	\$1,945,000
LTM	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$220,000	\$220,000

**TABLE A-2
FUNDING SCHEDULE TO COMPLETE
(6 of 7)**

Site ID	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10 to Finish	Total
MAJCOM: AFMC Installation: HILL									
Installation HILL Totals:									
Sites	\$14,242,000	\$14,926,000	\$15,369,000	\$15,360,689	\$29,176,459	\$19,377,000	\$9,096,000	\$231,438,000	\$348,985,148
UXO sites	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
AOCs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
UXO AOCs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
HQ Non-Mgt.	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
MPR Site	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$14,242,000	\$14,926,000	\$15,369,000	\$15,360,689	\$29,176,459	\$19,377,000	\$9,096,000	\$231,438,000	\$348,985,148
Management	\$1,778,000	\$1,251,000	\$1,092,000	\$920,000	\$816,000	\$816,000	\$345,000	\$2,760,000	\$9,778,000
Overall	\$16,020,000	\$16,177,000	\$16,461,000	\$16,280,689	\$29,992,459	\$20,193,000	\$9,441,000	\$234,198,000	\$358,763,148
MAJCOM AFMC Totals:									
Sites	\$14,242,000	\$14,926,000	\$15,369,000	\$15,360,689	\$29,176,459	\$19,377,000	\$9,096,000	\$231,438,000	\$348,985,148
UXO sites	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
AOCs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
UXO AOCs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
HQ Non-Mgt.	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
MPR Site	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$14,242,000	\$14,926,000	\$15,369,000	\$15,360,689	\$29,176,459	\$19,377,000	\$9,096,000	\$231,438,000	\$348,985,148
Management	\$1,778,000	\$1,251,000	\$1,092,000	\$920,000	\$816,000	\$816,000	\$345,000	\$2,760,000	\$9,778,000
Overall	\$16,020,000	\$16,177,000	\$16,461,000	\$16,280,689	\$29,992,459	\$20,193,000	\$9,441,000	\$234,198,000	\$358,763,148

**TABLE A-2
FUNDING SCHEDULE TO COMPLETE
(7 of 7)**

Site ID	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10 to Finish	Total
Grand Totals:									
Sites	\$14,242,000	\$14,926,000	\$15,369,000	\$15,360,689	\$29,176,459	\$19,377,000	\$9,096,000	\$231,438,000	\$348,985,148
UXO sites	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
AOCs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
UXO AOCs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
HQ Non-Mgt.	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
MPR Site	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$14,242,000	\$14,926,000	\$15,369,000	\$15,360,689	\$29,176,459	\$19,377,000	\$9,096,000	\$231,438,000	\$348,985,148
Management	\$1,778,000	\$1,251,000	\$1,092,000	\$920,000	\$816,000	\$816,000	\$345,000	\$2,760,000	\$9,778,000
Overall	\$16,020,000	\$16,177,000	\$16,461,000	\$16,280,689	\$29,992,459	\$20,193,000	\$9,441,000	\$234,198,000	\$358,763,148

Appendix B

APPENDIX B

PROGRAM TEAM AND PEER REVIEWERS

APPENDIX B

PROGRAM TEAM AND PEER REVIEWERS

The EMR Program Team ensures effective execution of the Hill AFB Restoration Program. The EMR Program Manager at Hill AFB leads the Team which includes EMR Project Managers, members of the Restoration Advisory Board (RAB), EPA and UDEQ regulatory managers who are directly involved with Hill AFB programs, and contractor representatives. Table B-1 presents current Team members, their contact information, and their roles and responsibilities.

Meetings of the Hill AFB Program Team are scheduled as needed and generally coincide with RAB meetings on a quarterly basis. Team meetings are the principal forum for resolving technical and administrative issues related to environmental response actions at Hill AFB.

Numerous individuals outside of the Program Team have participated in various stages of EMR's projects, from initial planning of investigative work to technology demonstrations and evaluations to proveout and operation of remedial systems. Their involvement has given EMR added confidence in strategic decisions that the program has taken. These reviewers have also been included in project-specific and program wide workshops to provide "out of box" perspectives and technology applications. A listing of these reviewers is provided on Table B-2.

TABLE B-1
(1 of 3)
EMR PROGRAM TEAM MEMBERS
CORE TEAM

Name	Title	Phone	Organization	Role/Responsibility
Bob Elliott	EMR Division Chief	(801) 775-3647	EMR	Air Force Overall Division Management
TBD	IRP Program Manager/Lead PM	TBD	EMR	Air Force PM
Sandra Bourgeois	EPA Remedial Project Manager	(303) 312-6664	EPA Region VIII	EPAPM
Muhammed Slam	Utah Remedial Project Manager	(801) 536-4178	UDERR	UDERR PM
Mark Plested	A/E Program Manager	(801) 272-1900	Montgomery Watson Harza	Contractor Program Manager
Mitch Lindsay	A/E Program Manager	(801) 265-2122	CH2M Hill	Contractor Program Manager
Steve Goddard	A/E Program Manager	(801) 261-2187	URS Group	Contractor Program Manager
Gene Wright	A/E Program Manager	(801) 572-5999	Parsons	Contractor Program Manager
Jim Olson	A/E Program Manager	(801) 261-0090	Stantec	Contractor Program Manager
Julieann Turko	A/E Program Manager	(303) 861-7558	Ageiss Environmental	Contractor Program Manager
Mark Plested	RAC Program Manager	(801) 272-1900	Montgomery Watson Harza	Contractor Program Manager
LLoyd Miyao	RAC Program Manager	(650) 347-1555	Environmental Chemical Corp.	Contractor Program Manager
Kevin Wong	RAC Program Manager	(916) 679-2312	URS Corporations	Contractor Program Manager
Bo Chung	RAC Program Manager	(801) 364-1996	Chung and Associates	Contractor Program Manager

TABLE B-1
(2 of 3)
EMR PROGRAM TEAM MEMBERS
OTHER KEY PARTICIPANTS

Name	Title	Phone	Location
Bob James	Directorate Manager	(801) 775-6985	Building 5
Ellie Crandall	EPA Region VIII – Public Involvement	(303) 312-6633	Denver
Dave Allison	UDEQ Public Involvement	(801) 536-4481	Salt Lake City
Charles Freeman	Public Affairs Coordinator	(801) 775-6951	Building 5
Chad Gilgen	Project Manager	(801) 536-4100	UDERR
Bronson Hawley	Project Manager	(801) 538-6170	UDSHW
Bruce Evans	Judge Advocate	(801) 777-4886	Building 5
Many Enyes-Mars	Judge Advocate	(801) 777-4886	Building 5
Ryan Shaw	Judge Advocate	(801) 777-4886	Building 5
Ed Thompson	Procurement Branch Chief	(801) 775-2375	Building 1286
Steve Hicken	Investigation Program Manager	(801) 775-3648	Building 5
Jeff Watkins	Operations Program Manager	(801) 775-6910	Building 5
Jerrod Case	Basewide Sampling Manager	(801) 775-6919	Building 5
Ray Spencer	Construction PM	(801) 777-8792	Building 5
Oscar Torres	Groundwater Systems O&M	(801) 775-6893	Building 5
Kyle Gorder	Little Mountain Technology Demonstrations	(801) 775-2559	Building 5
Shannon Smith	OU 9, OU 10, UST Remedial Action PM	(801) 775-3651	Building 5
Mark Loucks	Staff Hydrogeologist, OU 5 PM	(801) 777-6299	Building 5
Robert Petrie	OU 8 PM	(801) 775-6896	Building 5
Sherie Rolfsness	OU 11 PM, IRP Funding Manager	(801) 775-6922	Building 5
Dave Mills	UTTR-S, UTTR-N, Wendover, OU12 TS	(801) 775-3646	Building 5
Ross Hammond	Real Estate, IDW Labels, Administrative Record	(801) 775-3650	Building 5
Mark Holt	GIS Engineer	(801) 775-3684	Building 5
Dan Stone	UST Compliance	(801) 775-6918	Building 5
Susan Barber	Restoration Advisory Board	(801) 775-6914	Building 5
Lynn Hill	Planning & Pollution Prevention Div. Chief/ Compliance Division Chief	(801) 777-0288	Building 5
LTC George New	SGB Division Chief	(801) 777-4551	Building 249

TABLE B-1
(3 of 3)
EMR PROGRAM TEAM MEMBERS
RESTORATION ADVISORY BOARD MEMBERS

Name	Affiliation
Bob James	Hill AFB/Air Force Co-Chair
Jerry Everett	Layton Community Co-Chair
Al Herring	Sierra Club
Mike Holmes	Central Weber Sewer District
To be named	Clearfield Community/City
Dave Hultgren	Clearfield City
Gregory Fisher	Clinton Community
John Keck	Clinton City
Louis Cooper	Davis County Health Department
Floyd Baham	Davis-Weber Canal Company
To be named	Hill AFB Community
Peter Matson	Layton City
Cliff Specht	North Davis Sewer District
To be named	Riverdale Community
Lynn Moulding	Riverdale City
Dale Sercy	Roy City
Rita Painter	Roy Community
Mark Perkins	South Weber Community
Joe Workman	South Weber City
Mel Wood	Sunset Community
Mickey Hennessy	Sunset City
Sandra Bourgeois	United State Environmental Protection Agency
Mo Slam	Utah Department of Environmental Quality
Bill Reynolds	Weber-Morgan County Health Department
Scott Paxman	Weber Basin Water Conservancy District
Mike Perez	Weber State University

**TABLE B-2
PEER REVIEWERS**

Name	Organization	Expertise
Dick Woodworth	AF Armstrong Labs	Treatability Studies
Major Edward Heyse, Ph.D.	AF Institute of Technology	Fate and Transport
Ross Miller, Ph.D.	Parsons	Bioventing/Intrinsic Remediation
David Burris, Ph.D.	AFCESA Armstrong Lab	Fate and Transport
Paul Johnson, Ph.D.	Arizona State University	Soil Vapor Extraction/Air Sparging
Jeff Hennier, R.G.	Azure Environmental	Soil Vapor Extraction/Extraction System Evaluation
Rob Hinchee, Ph.D.	Battelle	Soil Vapor Extraction/Bioremediation/Sparging
Dave McWhorder, Ph.D.	Colorado State University	Air Sparging
Jim Studer, P.E.	Duke Engineering & Services	Surfactant Flushing
Dick Jackson, P.E.	Duke Engineering & Services	Surfactant Flushing
Robert Mutch, Ph.D.	Eckenfelder	Geotechnical Engineering
John Wilson, Ph.D.	EPA Kerr Laboratory	Bioremediation
Carl Enfield, Ph.D.	EPA Kerr Laboratory	Ethanol Flushing
Don Kampbell, Ph.D.	EPA Kerr Laboratory	Bioremediation
Lynn Wood, Ph.D.	EPA Kerr Laboratory	Ethanol Flushing
Jim Weaver, Ph.D.	EPA Kerr Laboratory	DNAPL Flow in Unsaturated Zone
Lee Wolfe, Ph.D.	EPA, Athens, GA	Abiotic Processes
Gregory Sayles, Ph.D.	EPA, Cincinnati, OH	Treatability Studies
James Mercer, Ph.D., P.G.	Geotrans, Inc	Hydrogeology
Rick Johnson, Ph.D.	Oregon Graduate Research Institute	Soil Vapor Extraction/Tracer Test
Kidd Waddell, P.G.	United States Geological Survey	Regional Geology
Bill Mabey, Ph.D.	University of California-Berkeley	Fate and Transport
Mike Annable, Ph.D.	University of Florida	Ethanol Flushing
P. Suresh Chandra Rao, Ph.D.	University of Florida	Ethanol Flushing
Pedro Alvarez, Ph.D.	University of Iowa	Phytoremediation
Gerald Schnoor, Ph.D.	University of Iowa	Phytoremediation
John Fountain, Ph.D.	University of NY at Buffalo	Surfactant Flushing
Craig Forster, Ph.D.	University of Utah	Ground-Water Modeling, Regional Geology
Rita Hanover, Ph.D.	University of Utah	Statistical Data Analysis
Grahame Farquhar, Ph.D.	University of Waterloo	Dehalogenation
David Smyth, Ph.D.	University of Waterloo	Funnel and Gate
Ron Sims, Ph.D.	Utah State University	Soil Remediation
Ryan Dupont, Ph.D.	Utah State University	Soil Remediation/Carbon Addition
Jagath Kaluarachchi, Ph.D.	Utah State University	Ground-Water Modeling
Mariush Kembrowski, Ph.D.	Utah State University	Ground-Water Modeling
Darwin Sorensen, Ph.D.	Utah State University	Microbiology
Bill Doucette, Ph.D.	Utah State University	Phytoremediation
Mike McFarland, Ph.D.	Utah State University	Treatability Study/Air Spargin

Appendix C

APPENDIX C

DECISION DOCUMENTS AND RECORDS OF DECISION

APPENDIX C

DECISION DOCUMENTS AND RECORDS OF DECISION

Table C-1 provides a listing of Decision Documents and Records of Decision that have been completed for Hill AFB IRP sites. This listing is current. Copies of the actual documents and their summaries are available from the Administrative Record that is maintained in the EM offices at Hill AFB.

Table C-1
Decision Document and Record of Decision Index
(Page 1 of 2)

Site	Decision Type	Sign. Date	Site Closed	Remedial Action Summary
OT013-Agent Orange Test Area, UTTR	DD	Mar-90	Mar-90	No further action
LF011-Landfill 1	ROD	Jul-94	Jul-94	Ground-water extraction using horizontal drains; air stripping; spring water collection treatment; soil vapor extraction in Landfill 1, cap construction Landfill 1, and institutional controls
LF012-Landfill 2	ROD	Jul-94	Jul-94	NFRAP
LF010-Landfill 5 UTTR	DD	Aug-91	Aug-91	Construction; institutional controls
OT014-Golf Course	DD	May-91	May-91	None
SD016	DD	Sep-2000	Sep-2000	NFRAP
OT020-Spoils Area	DD	May-92	May-92	NFRAP
ST022-Building 1915	ROD	Aug-97		Ground-water extraction/containment
OT029-Building 204 Beryllium Underground Storage Tank	DD	Mar-98	Mar-98	NFRAP
OT041-Northgate Dump	ROD	Jul-94	Jul-94	NFRAP
OT042-Munitions Dump	ROD	Jul-94	Jul-94	NFRAP
OT033-Ground Water Beneath Industrial Area and Layton City	IRA ROD	May-97	May-97	Ground-water extraction via wells and discharge to local treatment facility
SD023-Pond 3	ROD	Sep-95	Sep-95	NFRAP
SD034-Pond 1	ROD	Sep-95	Sep-95	NFRAP
SD040-Pond 7	DD	Mar-98	-	NFRAP
SD046-Storm Pond 2	DD	Jun-92	Jun-92	None
SS021-Perimeter Road	DD	Jun-91	Jun-91	None
SS027-Building 225 Chromium Spill	ROD	Sep-95	Sep-95	Institutional controls
SS028-Sill Property	DD	Jun-91	Jun-91	Soil removal
SS030-Building 20 PCB Area	DD	Mar-92	Mar-92	Removal of 20 tons of soil
SS032-Building 225 PCB Spill	ROD	Sep-95	Sep-95	NFRAP
ST004-Sodium Hydroxide Tank Site	ROD	Sep-95	Sep-95	Cap maintenance
ST004-Sodium Hydroxide Tank Site	IRA ROD	Sep-92	Sep-92	Removal of tanks; asphalt cap
ST015-JP-4 Refueling Area	DD	Aug-91	Aug-91	Soil venting and natural attenuation
ST018-Refueling Vehicle Maintenance Facility	ROD	Sep-95	Sep-95	Institutional controls and in-situ vapor extraction
OT026-2000 Area	ROD	Aug-97		Ground-water extraction/containment
ST031 Building 220 Underground	ROD	Sep-95	1998	NFRAP
ST035-UST at Building 280	DD	Oct-95	Oct-98	NFRAP
ST036-UST at Building 510	DD	Jun-93	Mar-96	NFRAP
ST037-UST at Building 214	DD	May-93	Jan-96	NFRAP
ST038-UST at Building 1411	DD	Dec-91	Dec-98	NFRAP
ST039-UST at Building 1230	DD	Aug-92	Aug-95	NFRAP
ST043-UST at Building 460	DD	Aug-92	Aug-95	NFRAP
ST044-UST at Building 598	DD	Aug-92	Aug-95	NFRAP
ST045-UST at Building 1214	DD	Aug-92	Aug-92	NFRAP
ST047-UST at Building 26	DD	Jul-94	Apr-95	NFRAP
ST048-UST at Building 32	DD	Sep-93	Mar-98	NFRAP
ST049-UST at Building 41	DD	Jul-94	Jan-97	NFRAP
ST050-UST at Building 204	DD	Jun-93	1996	NFRAP
ST051-UST at Building 221	DD	Jul-92	Dec-92	NFRAP
ST052-UST at Building 242	DD	Aug-95	Aug-95	Tank removal
ST053-UST at Building 256	DD	Aug-96	Aug-96	Tank removal
ST054-UST at Building 308	DD	Sep-93	Sep-93	Tank removal; soil removal

Table C-1
Decision Document and Record of Decision Index
(Page 2 of 2)

Site	Decision Type	Sign. Date	Site Closed	Remedial Action Summary
ST055-UST at Building 388	DD	Jul-94	Dec-96	NFRAP
ST056-UST at Building 924	DD	Sep-93	Mar-96	NFRAP
ST057-UST at Building 1243	DD	Jul-94	Jul-94	Tank removal
ST059-UST at Building 5026	DD	Sep-93	Sep-95	NFRAP
ST060-UST at Building 592	DD	Mar-93	Aug-95	NFRAP
ST061-UST at Building 870	DD	Sep-96	-	Bioventing and LNAPL recovery
ST062-UST at Building 1102	DD	Sep-92	Aug-95	NFRAP
ST063-UST at Building 837	DD	Sep-92	Aug-95	NFRAP
ST064-UST at Building 228	DD	Jun-93	Mar-96	NFRAP
ST065-UST at Building 236	DD	Aug-95	Aug-95	NFRAP
ST066-UST at Building 4301	DD	Jun-93	Feb-98	NFRAP
ST067-UST at Building 1705	DD	Sep-93	Jun-96	NFRAP
ST068-UST at Building 10779	DD	Sep-95	Dec-97	NFRAP
ST069-UST at Building 722	DD	Jun-93	-	Tank replacement; soil removal
ST070-UST at Building 1132	DD	Jun-93	-	Tank replacement; soil removal
ST071-UST at Building 914	DD	Jul-94	-	Vacuum extraction to remove LNAPL
ST072-UST at Building 1590	DD	Jan-94	-	NFRAP
ST073-UST at Building 1286	DD	Oct-95	-	In-situ bioventing; natural attenuation if ground water
ST074-UST at Building 260	DD	Aug-96	Dec-98	NFRAP
ST075-UST at Building 555	DD	Jul-94	-	Natural attenuation
ST076-UST at Building 553	DD	Jul-94	-	Tank removal
ST077-UST at Building 780	DD	Jul-95	-	Tank replacement
ST078-UST at Building 744	DD	Jan-94	-	In use at this time. NFRAP
ST079-UST at Building 40002	DD	Jul-94	Jul-94	In-situ bioventing
ST082-UST at Building 1	DD	Sep-3	Sep-3	NFRAP
ST083-UST at Building 771	DD	1994	Apr-96	NFRAP
ST084-UST at Building 859	DD	Jul-94	-	Tank removal
ST085-UST at Buildings 1313 and 1314	DD	Mar-96	-	Tank removal; in-situ bioventing
ST086-UST at Buildings 1703, 1904, 2104, 2203	DD	Oct-95	Jul-99	NFRAP
ST086-UST at Buildings 454, 1134, and 2025	DD	Oct-95	Jul-99	NFRAP
ST086-Pipeline removal at Building 825	DD	Oct-95	Jul-99	NFRAP
ST088-UST at Little Mountain Fire Training Area	DD	Feb-92	Sep-97	NFRAP
ST097-UST of Building 454	DD	Apr-97	Feb-98	NFRAP
WP002-Chemical Disposal Pits 1 & 2	ROD	Sep-98	-	Recovery; containment; spring and seep treatment; natural attenuation
LF003-Landfill 3	ROD	Sep-98	-	Recovery; containment; spring and seep treatment; natural attenuation
FT009-Fire Training Area 1	ROD	Sep-98	-	Recovery; containment; spring and seep treatment; natural attenuation
LF001-Landfill 1	ROD	Sep-98	-	Recovery; containment; spring and seep treatment; natural attenuation
WP080-Waste Phenol/Oil Pit	ROD	Sep-98	-	Recovery; containment; spring and seep treatment; natural attenuation
FT0881-Fire Training Area 2	ROD	Sep-98	-	Recovery; containment; spring and seep treatment; natural attenuation
WP005-Berman Pond	ROD	Sep-95	-	Cap construction and perched water extraction at WP05
WP006-IWTP Sludge Drying Beds	ROD	Sep-95	Sep-95	NFRAP
WP007-Chemical Disposal Pit 3	IRA ROD	Sep-95	Sep-95	Source Recovery System to remove DNAPL
WP007-Chemical Disposal Pit 3	ROD	Sep-96	Sep-96	DNAPL recovery, ground-water extraction with treatment on site air stripper and at IWTP institutional controls, spring and seep treatment using activated carbon vertical barrier wall around source area. Cap over source area, soils treatment using SVE

Appendix D

APPENDIX D

**REMEDIAL ACTIONS,
INTERIM REMEDIAL ACTIONS,
AND
TECHNICAL DEMONSTRATIONS**

APPENDIX D

REMEDIAL ACTIONS, INTERIM REMEDIAL ACTIONS, AND TECHNOLOGY DEMONSTRATIONS

This appendix provides a listing of various types of remedial actions and technology demonstrations that have been implemented at numerous IRP sites at Hill AFB. Locations, descriptions, and timeframes of each action or demonstration, as well as lessons learned are provided on Table D-1. The

AFCEE Remediation Matrix as presented on Table D-2, has been used as a starting point for IRAs and technology demonstrations on many projects.

**TABLE D-1
REMEDIAL ACTIONS, INTERIM REMEDIAL ACTIONS, AND TECHNOLOGY DEMONSTRATIONS
(1 of 7)**

OU	Site Code	Site Description	Action (Date Completed)	Purpose	Initial Expectation	Status	Outcome/Lessons Learned	Regulatory Program
-	-	Little Mountain Radioactive Disposal Site	Fencing/posting signs (institutional controls) (1996)	IRA	Provide for public safety by restricting access.	Completed	Has operated as expected.	GWP
-	ST015	Building 914 Fuel Spill	SVE and Bioventing (1991)	TD	Reduce contamination levels in soils.	Completed	Technology was effective in reducing contaminant levels in soil.	UST
-	ST035	Bldg 280 (UST)	Bioventing/LNAPL recovery/ Ground-water monitoring	IRA/RA	Remove LNAPL and decrease soil contaminant levels.	In progress	Bioventing in soils has proved effective.	UST
-	ST036	Bldg 510 (UST)	Bioventing/GW monitoring (1994)	RA	Reduce soil contamination to below action levels.	Completed	Proved effective in reducing contaminant levels to help bring site to closure.	UST
-	ST037	Bldg 214 (UST)	Bioventing/Vapor extraction; GW monitoring (1994)	IRA/RA	Let natural biological processes reduce contamination, but enhance the process by adding needed oxygen.	Completed	Proved effective in reducing contaminant levels and helped bring site to closure. (See outcome for ST56).	UST
-	ST038	Bldg 1141 (UST)	Long term monitoring (intrinsic bioremediation)	RA	Let natural biologic processes reduce contaminant levels in soil and ground water.	LTM	Ongoing research, preliminary results suggest attenuation is occurring.	UST
-	ST049	Bldg 41 (UST)	Intrinsic bioremediation/GW monitoring (1996)	LTM/ natural attenuation	Let natural biologic processes reduce contaminant levels.	Completed	Proved effective in reducing contaminant levels to help bring site to closure.	GWP
-	ST050	Bldg 204 (UST)	Bioventing (1993)	IRA/RA	Let natural biological processes reduce contamination, but enhance the process by adding needed oxygen.	Completed	Proved effective in reducing contaminant levels and helped bring site to closure. (See outcome for ST56).	UST
-	ST055	Site 388 (UST)	Bioventing/GW monitoring (1997)	RA	Let natural biological processes reduce contamination, but enhance the process by adding needed oxygen.	Completed	Bioventing reduced contaminant concentrations in the soil.	UST
-	ST056	Bldg 924 (UST)	Bioventing (1993)	IRA/RA	Let natural biological processes reduce contamination, but enhance the process by adding needed oxygen.	Completed	Proved effective in reducing contaminant levels and helped bring site to closure. Bioventing has sped up the natural degradation process significantly.	UST
-	ST059	Bldg 5026 (UST)	Intrinsic bioremediation (1993)	LTM/ natural attenuation	Let natural biological processes reduce contaminant levels.	Completed	Successfully reduced contaminant levels to bring site to closure.	UST
-	ST060	Bldg 592 (UST)	Abatement—Contaminated Soils Removed (1993)	Site remediation	Remove contaminated soil.	Clean closure completed 1993	Remediation goal was reached by soil removal; however, compared to other sites remediated using bioventing technologies, it is much more cost effective to treat UST contaminated soil on site.	UST
-	ST061	Bldg 870 (UST)	JP-4 Recovery/Residential vapor monitoring/ Bioventing (1992)	IRA/CA	Recover LNAPL and remediate soils to below action levels.	Recovering JP-4 since June 1992; testing several types of recovery systems	LNAPL recovery has been minimal (only 960 gallons), but ground-water plume size has not increased and contaminant levels are decreasing.	UST
-	ST061	Bldg 870 (UST)	Natural Attenuation (1993-Present)	RA	Modeling would produce favorable results to warrant full-scale study	LTM	Natural attenuation was well-documented, is actively occurring and has been monitored since 1994.	UST

**TABLE D-1
REMEDIAL ACTIONS, INTERIM REMEDIAL ACTIONS, AND TECHNOLOGY DEMONSTRATIONS
(2 of 7)**

OU	Site Code	Site Description	Action (Date Completed)	Purpose	Initial Expectation	Status	Outcome/Lessons Learned	Regulatory Program
-	ST063	Bldg 236 (UST)	Bioventing/GW monitoring (1992)	RA	Reduce soil contamination to below action levels.	Completed	Proved effective in reducing contaminant levels to help bring site to closure.	UST
-	ST064	Bldg 228 (UST)	Bioventing/GW monitoring (1992)	RA	Reduce contaminants in soil.	Completed	Site was successfully remediated.	UST
-	ST066	Bldg 4301	Bioventing/GW monitoring (1997)	IRA/RA	Reduce contaminant levels to below action levels.	Completed; DD signed June 1993		UST
-	ST067	Bldg 1705	Contaminated Soils Removal (1993)	IRA/RA	Remove contaminated soils around USTs.	Completed; DD signed September 1993	Proved effective to reduce contamination but at a relatively high cost.	GWP
-	ST068	Site 10779 (UST)	Contaminated Soils Removal; Bioventing/GW monitoring (1992)	RA	Remove contaminated soils around tanks and reduce remaining contamination through bioventing.	Completed soil removal in March 92. Bioventing completed.	Proved effective in reducing contaminant level and help bring site to closure. Remediation through bioventing was much more cost effective than soil removal.	UST
-	ST069	Bldg 722 (UST)	Abatement—Contaminated Soils Removal (1995)	Site remediation	Remove contaminated soil.	Clean closure in 1995	It is much more cost effective to treat UST contaminated soil on site.	UST
-	ST070	Bldg 1132 (UST)	Abatement—Contaminated Soils Removal (1995)	Site remediation	Remove contaminated soil.	Clean closure in 1995	It is much more cost effective to treat UST contaminated soil on site.	UST
-	ST071	JP-4 Refueling Spill (Bldg 914)	SVE, LNAPL recovery by vacuum extraction and ground-water monitoring	RA	Remove LNAPL from perched water bearing zone.	In operation; DD signed August 1991	Complex subsurface conductions and continued POL spills have extended this effort.	UST
-	ST071	JP-4 Refueling Spill (Bldg 914)	Dual Phase and vacuum extraction (1994)	TD	Remove LNAPL from perched water bearing zone and reduce contaminants in soil matrix	Completed	Did not prove effective in removing LNAPL	
-	ST073	Bldg 1286 (UST)	Contaminated Soils Removal; Bioventing/GW monitoring (1997)	RA	Remove contaminated soils around tanks and reduce remaining contamination through bioventing.	Completed soil removal and bioventing in progress	Proved effective in reducing contaminant level and help bring site to closure. Remediation through bioventing was much more cost effective than soil removal.	GWP
-	ST074	Bldg 260 (UST)	LNAPL recovery/Bioventing	IRA	Remove LNAPL and decrease soil contaminant levels.	In operation	Approximately 14,000 gallons of LNAPL have been removed. Bioventing in soils has proved effective.	UST
-	ST079	UTTR 40002 (UST)	Contaminated Soil Removal; Bioventing/GW monitoring (1994)	RA	Remove contaminated soils around tanks and reduce remaining contamination through bioventing.	Completed soil removal. Bioventing in progress.	Proved effective in reducing contaminant level and help bring site to closure. Remediation through bioventing has been much more cost effective than soil removal.	UST
-	ST083	Bldg 771 (UST)	Intrinsic bioremediation/GW monitoring (1994)	LTM/natural attenuation	Let natural biologic processes reduce contaminant levels.	Completed	Proved effective in reducing contaminant levels to help bring site to closure.	UST
-	ST085	USTs 1313, 1314	Bioventing/GW monitoring (1995)	IRA/RA	Reduce soil contamination to below action levels.	In progress; DD signed March 1996		GWP
-	ST086	Bldg 1134	Bioventing/GW monitoring (1997)	IRA/RA	Reduce soil contamination to below action levels.	Completed	Proved effective in reducing contaminant level and help bring site to closure. Remediation through bioventing was much more cost effective than soil removal.	UST

**TABLE D-1
REMEDIAL ACTIONS, INTERIM REMEDIAL ACTIONS, AND TECHNOLOGY DEMONSTRATIONS
(3 of 7)**

OU	Site Code	Site Description	Action (Date Completed)	Purpose	Initial Expectation	Status	Outcome/Lessons Learned	Regulatory Program
-	ST086	Bldg 1703	Bioventing/GW monitoring (1997)	IRA/RA	Reduce contaminant levels to below action levels.	Completed	Proved effective in reducing contaminant levels to help bring site to closure.	UST
-	ST086	Bldg 1904	Bioventing/GW monitoring (1997)	IRA/RA	Reduce soil contamination to below action levels.	Completed	Proved effective in reducing contaminant levels to help bring site to closure.	UST
-	ST086	Bldg 2025	Bioventing/GW monitoring (1997)	IRA/RA	Reduce contaminant levels to below action levels.	In progress		UST
-	ST086	Bldg 2104	Bioventing/GW monitoring (1997)	IRA/RA	Reduce soil contamination to below action levels.	Completed	Proved effective in reducing contaminant levels to help bring site to closure.	UST
-	ST086	Bldg 2203	Bioventing/GW monitoring (1997)	IRA/RA	Reduce contaminant levels to below action levels.	Completed July 95	Proved effective in reducing contaminant levels to help bring site to closure.	UST
-	ST086	Bldg 454	Vapor extraction	IRA/RA	Reduce contaminant levels to below action levels.	In progress. Closure planned early for FY98	Vapor extraction was very effective.	UST
-	ST087	Little Mountain Tank Farms	LNAPL extraction/GW monitoring	TD	Remove LNAPL and reduce contaminant levels.	In progress; DD is on hold	LNAPL recovery has been below expectations; skimmer pumps did not work at this site, currently bailing LNAPL on regular basis	GWP
-	ST088	Little Mountain Fire Training Area	Intrinsic remediation/GW monitoring (1997)	RA	Let natural biologic processes reduce contaminant levels.	Completed		GWP
1	Several	U1-303, U1-304	Seep/Spring Collection/Treatment Systems (1985)	IRA	Collect and treat contaminated ground-water discharge at these two seep and spring locations.	In operation, LTM	Operated as expected.	FFA
1	Several	U1-307	Seep/Spring Collection/Treatment System (1995)	IRA	Collect and treat contaminated ground water discharged from U1-307.	In operation, LTM	Operated as expected.	FFA
1	FT009	Fire Training Area 2	Bioventing (1995)	TD	Assess whether bioventing is an effective remedial technology at FTA-2.	Completed	Proved to be very successful for both soil and ground-water remediation. Ground water is now below MCLs.	FFA
1	FT009, LF001, 002	Landfill 3 & 4, Fire Training Area 1	Eastern IRA containment system upgrade	IRA		On hold		FFA
1	FT009, LF001, 002, WP002	Landfills 3 & 4, Chemical Disposal Pits 1 & 2, and Fire Training Areas 1 & 2	Cap and Slurry Wall (1987)	IRA	Significantly reduce recharge to OU 1 disposal sites and to reduce transport of contaminants to off-Base area's.	In operation, LTM	Initial testing indicated that the cap met permeability criteria, however, burrowing animals and deep rooted plants have compromised cap integrity. The slurry wall did not meet expectations. Lessons learned from this project suggests more stringent over site should be required during construction activities, maintenance of cap is required to maintain its effectiveness, and upgradient hydraulic capture is needed to maintain slurry wall effectiveness.	FFA
1	FT009, LF001, 002, WP002	Landfills 3 & 4, Chemical Disposal Pits 1 & 2, and Fire Training Areas 1 & 2	IWTP Hookup (1988/Upgraded 1994)	IRA	Transport contaminated ground water from OU 1 to IWTP for treatment.	In operation, LTM	System has operated as expected.	FFA
1	FT009, LF001, 002, WP002	Landfills 3 & 4, Chemical Disposal Pits 1 & 2, and Fire Training Areas 1 & 2	Ground-water control collection and treatment, CAP repair (2000)	RA	Collect and convey contaminated ground-water from OU1 to WTP for treatment	Under construction		FFA

**TABLE D-1
REMEDIAL ACTIONS, INTERIM REMEDIAL ACTIONS, AND TECHNOLOGY DEMONSTRATIONS
(4 of 7)**

OU	Site Code	Site Description	Action (Date Completed)	Purpose	Initial Expectation	Status	Outcome/Lessons Learned	Regulatory Program
1	FT009, WP0002	Chemical Disposal Pits 1 & 2, Fire Training Area 1	Surfactant Treatability Study Bench Test (1994)	TD	Assess if surfactants were an applicable technology for OU 1 contaminant removal.	Completed	Results suggested that it could be an effective technology but emulsion formation may cause long term problems in analyzing data.	FFA
1	LF001	Chemical Disposal Pits 1 & 2, and Western Area of OU 1	Replaced private well water supply with municipal water (residents) and seeps/springs (livestock) (1990)	IRA	Reduce exposure to contaminated ground water by providing an alternative water source.	In operation, LTM	Has reduced exposure of off-Base Resident to contaminated ground water.	FFA
1	WP002	Chemical Disposal Pit 1	Soil vapor extraction (1995)	TD	Assess applicability of SVE to remediate vadose zone soil at CDPs 1 and 2.	Completed	Removed a significant mass of contaminants, however, this mass was insignificant compared to the total mass of contaminants at CDPs 1 and 2.	FFA
1	WP002	Chemical Disposal Pits 1 & 2	Hookup ground-water treatment (1986)	IRA	Collect and treat contaminated OU 1 ground water.	In operation, LTM	Well spacing was not adequate for complete capture of contaminants. However, the system has demonstrated that capture is possible with adjustments to system design. Lessons learned included; the need to base system design on hydrogeology of site and extraction trenches are more effective than the wells.	FFA
1	WP002	Chemical Disposal Pits 1 & 2	A series of nine technology demonstrations (1995): 1. Ethanol Flushing (1995) 2. Air Sparging/Soil Vapor Extraction (1996) 3. In-Well Aeration/Vertical Cosolvent Solubilization (1996)	TD TD TD	To assess innovative technology effectiveness for OU 1 site remediation, to provide data to support the FS and ROD, and to provide engineering and cost data for full scale implementation.		Numerous technical and administrative lessons were learned and have been summarized in a memorandum that is available from the EMR OU 1 files.	FFA FFA FFA

**TABLE D-1
REMEDIAL ACTIONS, INTERIM REMEDIAL ACTIONS, AND TECHNOLOGY DEMONSTRATIONS
(5 of 7)**

OU	Site Code	Site Description	Action (Date Completed)	Purpose	Initial Expectation	Status	Outcome/Lessons Learned	Regulatory Program
			4. Cosolvent Mobilization (1996)	TD		Completed		
			5. Complexing Sugar Flush (1996)	TD		Completed		
			6. Surfactant Solubilization (1996)	TD		Completed		
			7. Surfactant Middle Phase Microemulsion (1996)	TD		Completed		
			8. Steam Injection (1996)	TD		Completed		
			9. Single Phase Micro-emulsions (1996)	TD		Completed		
1	WP002	Chemical Disposal Pits 1 & 2	Western OU 1 containment system	IRA		On hold		FFA
2	Several	Chemical Disposal Pit 3	Install new holding tank at IWTP (1993)	WW storage	Increase storage capacity at IWTP.	Completed	Fulfilled expectations by providing additional storage capacity	FFA
2	Several	Davis/Weber Canal	Seal leaks in canal near OU 2	RA	Reduce infiltration from canal.	Completed	Significant infiltration reduction	FFA
2	WP007	Seep U2-304	Seep Collection System (1999)	RA	Collect seep and convey to existing treatment system	Completed	Operating as expected	FFA
2	WP007	Chemical Pit 3	Shallow, off-Base ground-water Collection gallery; Treatment of springs; Air stripper; GAC (1987)	IRA	Treat storage water and surface water.	Replaced by permanent system in 1999	Has effectively treated ground water and surface water	FFA
2	WP007	Chemical Pit 3	DNAPL Recovery System— Evaluation/modification of treatment system (1993)	IRA	To remove DNAPL.	In operation, LTM	To date the SRS has removed over 35,000 gallons of DNAPL	FFA
2	WP007	Chemical Pit 3	Extraction Trench (1997)	RA	Will reduce off-Base contaminated ground-water plume	Completed Dec-97, in operation.	Construction went smoothly	FFA
2	WP007	Chemical Pit 3	Cap and Slurry Wall around source area; SVE source area; ground-water collection and treatment (1996, 1997)	RA	Contain contaminated ground water on Base.	In operation, LTM		FFA
2	WP007	Chemical Pit 3	Surfactant Flushing (1997, 1999)	TD	Test feasibility of this method to mobilize and remove contamination from soil matrix.	In progress	Very encouraging. Significant mass removals (>90%) were documented during 1997 trial. Expected completion date – Fall 2000	FFA
2	WP007	Chemical Pit 3	Steam Injection/Vapor Extraction (1997, 1999)	TD	Test feasibility of this method to mobilize and remove contamination from soil matrix.	Completed	Removed 2,400 gallons of product.	FFA
2	WP007	Chemical Pit 3	Surfactant Foam Test (1997, 1999)	TD	Test feasibility of contaminant removal in soil matrix using foam surfactant.	Completed	Surfactant successfully deployed in low permeability zone. Foam effective at controlling mobility at higher permeability zones.	FFA
2	WP007	Chemical Pit 3	Cometabolic bioventing test	TD	Assess the effectiveness of this technology to remove contaminants from soil matrix.	In progress	Expected completion date – mid 2000	FFA
2	WP007	Chemical Pit 3	Partitioning tracer test	TD	Determine remaining residual DNAPL.	Completed	Results indicate 1,100 gallons remaining. Full scale surfactant flood underway to remove DNAPL	FFA

TABLE D-1
REMEDIAL ACTIONS, INTERIM REMEDIAL ACTIONS, AND TECHNOLOGY DEMONSTRATIONS
(6 of 7)

OU	Site Code	Site Description	Action (Date Completed)	Purpose	Initial Expectation	Status	Outcome/Lessons Learned	Regulatory Program
3	ST004	Sodium Hydroxide Tank	Asphalt Cap (1993) Asphalt Cap Replaced (1999)	IRA/RA	Reduce infiltration and limit possible contaminant migration.	Continued annual inspection, LTM	Cap appears to be operating effectively.	FFA
3	ST018	Buildings 511 & 514	SVE (1997)	RA	Remove VOCs in soil.	Completed	Remedial action completed successfully. Site closed	FFA
3	ST018	Buildings 511 & 514 Vehicle Maintenance	Soil Vapor Extraction TD (1995)	TD	Test the feasibility of soil vapor extraction as a remedial alternative.	Completed	This testing showed that SVE was effective in reducing contaminant levels in the soil matrix.	FFA
3	WP005	Berman Pond	Cap (1984)	IRA	Reduce infiltration into perched ground water zone and reduce contaminant transport to the shallow aquifer.	Completed	Cap did not cover the entire areal extent of the pond so it was not effective in reducing infiltration. Additional capping required.	FFA
3	WP005	Berman Pond	Asphalt Cap (1997)	RA	Minimize subsurface water infiltration. Test perched water hydraulic properties to assess dewater feasibility..	Completed cap Dec 97		FFA
3	WP005	Berman Pond	Pond Dewatering (1995)	TD	Test small scale well field design to assess its dewatering capabilities.	Completed	The hydraulic properties for dewatering design were obtained.	FFA
3	WP005	Berman Pond	Expanded Pond Dewatering	TD/RA	Remove perched ground water.	In operation	Indicate that dewatering in the Berman Pond perched zone is possible, but cannot be achieved until infiltration into the perched zone is significantly reduced through cap construction. Retained as part of RA.	FFA
4	LF011	Ground-water Plume near Landfills 1 and 2	Ground-water contaminant and extraction system	RA	Contain source areas to control off-Base transport of TCE contaminated ground water.	Design complete. Awaiting resolution of off-base real estate issue.		FFA
4	LF011	Landfill 1	Ground-water Recovery and Treatment (horizontal drains and air stripper) (1993)	TD	Test feasibility of ground water extraction using horizontal drains and treatment by a shallow-tray air stripper.	Upgraded to permanent facility in 1996	To date the drain system drained and treated approximately 10.2 million gallons of ground water. Air stripper has been effective at meeting or exceeding discharge requirements.	FFA
4	LF011	Landfill 1	Ground-water Recovery and Treatment (horizontal drains and air stripper) (1996)	RA	Continued satisfactory operation.	In operation, LTM	Continued satisfactory operation.	FFA
4	LF011	Landfill 1	In-situ funnel and gate (MERD Technology) (1994)	TD	Test MERD Technology to remove the contaminants from ground-water	Completed	Technology was effective only for very short durations due to problems encountered with precipitation of various carbonates and hydroxides.	FFA
4	LF011	Landfill 1	Landfill cap (1996)	RA	Reduce infiltration into landfill	Completed, LTM		FFA
5	SD016	Bamberger Pond	Pond Liner	IRA	Limit storm water infiltration into ground water.	Deleted	Study results indicate metals contamination is related to natural processes.	FFA
5	SS017	Rail Shop	Soil Management System (1995)	IRA	Vapor extract VOCs from contaminated soil excavated from aeration curtain and from OU 5 and other site investigations.	In operation, LTM	Successfully reduced VOC levels in soil to allow for on-Base spreading of "clean" soils.	FFA

**TABLE D-1
REMEDIAL ACTIONS, INTERIM REMEDIAL ACTIONS, AND TECHNOLOGY DEMONSTRATIONS
(7 of 7)**

OU	Site Code	Site Description	Action (Date Completed)	Purpose	Initial Expectation	Status	Outcome/Lessons Learned	Regulatory Program
5	SS017	Rail Shop, off-Base	Expand Aeration Curtain (1996)	IRA	Treat TCE contaminated ground water as it leaves the Base and reduce contaminant levels to below MCLs.	In operation, LTM	Problems included Guar solution that broke down causing trench to collapse due to contaminated mixing water; lessons learned included: need to keep mixing waters clean.	FFA
5	SS017	Rail Shop, off-Base	Ground-Water Collection Trench	IRA	Collect and treat contaminated ground-water in off-Base locations.	Installation scheduled for Fall 2002		FFA
5	SS017	Rail Shop, off-Base	Ground-water extraction system (wells)	IRA	Pump and treat TCE contaminated ground-water in off-Base areas.	In operation, LTM	Performing as expected.	FFA
6	OT026	Off-Base Ground-water Plume	Pump and treatment system with air stripper (1996)	EE/CA	Collect and treat contaminated ground water.	In operation, LTM	Performing as expected.	FFA
6	OT026	Off-Base Springs and Pond	Off-Base Ground-water Treatment (springs), air stripper (1993)	EE/CA	Collect and treat contaminated ground-water in springs located off-Base.	In operation, LTM	Performed as expected.	FFA
6	OT026	On-Base Ground-water Plume	UVB/Air sparge SVE (1996)	TD	Assess effectiveness of UVB and air sparge SVE technologies to treat TCE contaminated ground-water at OU 6 to below MCL levels.	Completed	Technologies did not prove successful.	FFA
6	OT026	On-Base Ground-water Plume	Extraction wells, air stripping	RA	Collect and treat contaminated ground water.	In operation, LTM	Performing as expected.	FFA
7	ST031	Bldg 220 Underground	Removed oil-water separators, UST, Soil, and Capped, 1986	IRA	Remove contaminated soil	Completed	Reduced contaminant levels by removing contaminated soil. Very costly to dispose of contaminated soils.	FFA/ RCRA
8	OT033	On-Base Ground-water Plume	Southern Base boundary hydraulic containment (extraction wells)	IRA	Minimize the transport of ground-water contamination to off-Base areas.	Under construction since Oct 97 (to complete in early 1998)	Discharge to POTW allowed.	FFA
8	OT033	On-Base Ground-water Plume	In-well redox technology evaluation	TD	Reduction in ground-water contaminant levels.	Assessment delayed to allow further definition of plume in potential study area.		

DD	Decision Document	LTM	Long-Term Monitoring
DNAPL	Dense Non-Aqueous Phase Liquid	MERD	Metal-Enhanced Reductive Dehalogenation
EE/CA	Engineering Evaluation, Cost Analysis	PD	Pre-design
FFA	Federal Facility Agreement	POL	Petroleum, Oil and Lubricant
FY	Fiscal Year	POTW	Publicly-Owned Treatment Works
GAC	Granular Activated Carbon	RA	Remedial Action
GW	Ground Water	SVE	Soil Vapor Extraction
GWP	Ground-Water Protection Program	TD	Technology Demonstration
IRA	Interim Remedial Action	UDERR	Utah Division of Environmental Response and Remediation
IRA/CA	Interim Remedial Action/Corrective Action	UST	Underground Storage Tank
IROD	Interim ROD	UVB	In-Well Air Stripping Technology
IWTP	Industrial Wastewater Treatment Plant	VOCs	Volatile organic compounds
LNAPL	Light Non-Aqueous Phase Liquid	WW	Wastewater

TABLE D-2
AFCEE REMEDIATION MATRIX—HIERARCHY OF PREFERRED ALTERNATIVES
(1 of 1)

	POL-Vadose Zone (i.e., jet fuel, diesel)	POL-Excavated Soil	Floating Product Deep (>20 ft)	Floating Product Shallow (<20 ft) Low Permeability	Floating Product Shallow (<20 ft) High Permeability	Dissolved Fuel In Ground Water (BTEX)	Chlorinated Solvents In Vadose Zone (i.e., TCE)	Dissolved Chlorinated Solvents In Ground Water	Heavy Metals In Vadose Zone	Heavy Metals In Excavated Soil	POL Vapor Treatment	Chlorinate Solvent Vapor Treatment
Natural Attenuation/Assimilation	1	1	1	1	1	1	1	1	1	1		
Bioventing	2	4					3 co-metabolism					
Soil Vapor Extraction	3	5					2					
Heat Enhanced Vapor Extraction	4						4					
Low Permeability Cover/Cap	5						6		3			
Excavate and/or Haul	6	8					7		4	4		
Composting (no tilling)		2										
Land Farming		3								2		
Low Temp Thermal Desorp		6										
Incineration (High Temp)		7										
Apparent vs. Actual Studies			2	2	2							
Passive Extraction Wells			4	5	4							
Hand Bail If Appropriate			3	3	3							
Vacuum Assist Pumping				4	5							
Dual Pump System			5									
Air Sparging						2		2				
Passive Treatment Wall						3		3				
Conventional Pump and Treat						4		4				
Slurry Wall						5		5				
Stabilization							5		2	3		
Permitted Direct Emission											1	1
Flare											2	
Biological Filter											3	2 co-metabolism
Catalytic Incineration											4	3
On-site Regenerated Polymer											5	4
Carbon Adsorption											6	5

This matrix is an attempt to rank technologies that should be considered for use at common Air Force sites. Managers should use this hierarchy for screening technologies and should be able to justify why a particular technology was selected over others with lower numbers. For instance, if soil vapor extraction (3) is the selected technology for POL in the vadose zone, then managers should be able to justify why neither natural attenuation (1) nor bioventing (2) was selected. The natural attenuation/assimilation alternative should always be considered first and, if selected, should be based on a scientifically defensible risk assessment.

Appendix E

APPENDIX E

AREAS OF CONCERN AT UTTR

APPENDIX E

AREAS OF CONCERN AT UTTR

This appendix provides a summary listing of Areas of Concern at the Utah Test and Training Range-North (UTTR-North), Utah Test and Training Range-South (UTTR-South), and the UTTR-Wendover AFAF.

TABLE E-1
UTTR - NORTH AREAS OF CONCERN
 (1 of 12)

Site	Name	Location	Dimensions	Dates of Operation	Types of Operations	Description of Wastes	Release*
1	Debris pile, Checkpoint Charlie	West side of ridge south of Checkpoint Charlie	Some visible wastes present	1970-1980	Scrap metal and spent munitions debris collection and disposal	Scrap metal, spent munitions debris	N
2	Cluster Bomb Unit (CBU) Valley disposal trenches	Northeast side of CBU Valley	2 Earthen trenches, ~150 x 15 x 8 ft	1980s	Propagation tests	Scrap metal, spent munitions, construction debris	N
3	Craneris Complex munitions pit	Craneris Tactical Target Complex, 40 miles west-southwest of Oasis compound	Earthen trench, ~90 x 15 x 8 ft and adjacent inert ordnance pile	1983-Present	Collection and disposal of spent munitions debris	Spent ordnance from range clearing operations	N
4	Oil/water separator at Eagle Tower	Eagle Tower, next to the vehicle maintenance shop	Concrete 8 x 8 x 8 ft, plus small drain field	1972-Present	Fluids from vehicle maintenance operations	Fuels, waste oils, spent solvents	D
9	TTU residue pits	Sedal Pass	1 open earthen trench, ~75 x 15 x 8 ft and unknown number of similar trenches	1950-1991	Disposal of residual material generated during OB/OD at the TTU	Scrap metal, spent munitions debris	N
10	TTU munitions burn pit	Sedal Pass	1 trench 75 x 15 x 8 ft	1950s-1995	OB operations (1 acre, active treatment facility)	Scrap metal, residue ash, diesel fuel constituents	N
11	TTU operations area	Sedal Pass	3 sites; 2 overcrushed limestone, 1 concrete and steel	1950-Present	OB/OD operations (0.7 square mile, active TSDF)	Waste munitions and propellants	N
12	Chemical disposal pit #4	3 miles north of Oasis compound	1 gravel pit, ~15 x 20 ft	1973-1975	Disposal of waste oil, diesel fuel, solvents	Waste oil, diesel fuel, solvents	Y-1
13	Sewage lagoon	Northwest of Oasis compound	2 unlined lagoons	1968-Present	Collection of domestic sewage and wastewater	Domestic sewage and wastewater	P
14	Fire training area	0.25 miles north of Oasis compound	Circular earthen pit, ~60 ft in diameter	1968-1992	Fire training	Diesel fuel used to ignite fires and scrap metal	S

**TABLE E-1
UTTR - NORTH AREAS OF CONCERN
(2 of 12)**

Site	Name	Location	Dimensions	Dates of Operation	Types of Operations	Description of Wastes	Release*
15	Morale, Welfare, and Recreation (MWR) yard	Oasis compound	Gravel-covered yard, ~200 x 300 ft	1980-Present	Vehicle preparation for use as targets; vehicle and equipment storage	Vehicle fluid spills	S
16	Target yard	Oasis compound	Gravel-covered yard, ~200 x 300 ft	1980-Present	Vehicles and equipment storage	Vehicle fluid spills	S
17	CBU Valley detonation/construction debris craters (A and B)	North end CBU Valley	2 craters, each ~250 ft in diameter	1988-1989	Propagation test	Scattered construction debris and large craters, weathered propellant	N
19	Satellite accumulation site TE-05	East side of Building 10018	NA	1991-1993	Satellite accumulation area	Battery acid	N
20	Satellite accumulation site TE-06	Eagle range, north side, Building 40054	NA	1991-Present	Satellite accumulation area	Used antifreeze, waste oil	N
21	Satellite accumulation site TM-04	Oasis compound; MWR yard	NA	1991-Present	Satellite accumulation area	Waste oil, antifreeze	P
22	Satellite accumulation site TU-02	South side of Building 40065	NA	1993-Present	Satellite accumulation area	Residue and filters from recycling of antifreeze	N
24	Satellite accumulation site TR-05	Southwest of Building 40011	NA	1988-Present	Collection point for sites UM-04, TE-05, TE-06, TU-02, and TU-03	Used oil, paint waste, solvents, sulfuric acid, antifreeze recycling waste	N
25	Eagle range disposal pits - Addressed further under Sites 37 through 47	Eagle range	17 sites				
26	Bravo dump area	Eagle range	Area ñ 3,927 m ² ; Perimeter ñ 278 m	1970-1980	Scrap metal and spent munitions debris collection and disposal	Spent ordnance casings and used targets	N
27	LM motor test pads (Pads 1, 2, and 3)	West of Oasis compound	TBD	1962-Present	Testing of large rocket motors	Quench water	Y-2

**TABLE E-1
UTTR - NORTH AREAS OF CONCERN
(3 of 12)**

Site	Name	Location	Dimensions	Dates of Operation	Types of Operations	Description of Wastes	Release*
28	30mm firing range	Valley south of Candy Mountain	Area \approx 329 m ² ; Perimeter \approx 103 m	1978- Present	Test firing of 30mm cannons	Spent 30mm shell casings, projectiles	N
29	M60 firing range	North of road west of Little Papa	Area \approx 2,400,000 m ² ; Perimeter \approx 6,096 m	1960s- Present	Firing range	Spent shell casings and practice rounds	N
30	HAG munitions pits (A, B, and C)	HAG (A-North; B-Middle; C-South)	3 trenches, \sim 75 x 15 x 8 ft	?-Present	Bombing and gunnery range clearances	Scrap metal, spent munitions debris	N
31	Sulfuric acid spill	North side of water treatment plant	Unknown	1960s- 1985	Water treatment	Sulfuric acid spill from 3,000-gal above-ground storage tank (AST)	Y-3
32	Salvo area	North center of UTTR-North	5 square mile area within mudflats	1940s- Present	Emergency fuel and ordnance drop area	Jet fuel, live munitions	N
33	CBU Valley target yard	CBU Valley	Area \approx 20,418 m ² ; Perimeter \approx 546 m	Unknown	Scrap metal (destroyed vehicles) debris collection and disposal	Scrap metal (vehicles)	N
34	CBU Valley craters	CBU Valley	4 craters, each \sim 75 ft across	1980- Present	Propagation tests	Scrap metal, spent munitions and construction debris	N
35	Target 21 munitions pits (A through H)	Target 21, \sim 10 miles south-southwest of Eagle Range	8 earthen pits, each \sim 75 x 15 x 8 ft	\sim 1960- 1970	Spent ordnance and target debris collection and disposal	Spent munitions debris and empty metal and wooden containers	N
36E	Target 21 disposal trench	North side of access road to Target 21, 200ft northwest of Site 36W	70ft x 30ft x 6ft deep	Late 1950s to present	Disposal of debris from the Hill Genie Project and debris from Target 21	500, 1000, 2000 pound practice bomb parts, Mark 105 practice bombs, parachute material, scrap metal	N
36W	Target 21 disposal trench	South side of access road to Target 21, 1000ft west of the target	70ft x 30ft x 5ft deep	Late 1950s to present	Disposal of debris from the Hill Genie Project	500, 1000, 2000 pound practice bomb parts, parachute material, scrap metal, concrete, spent flares	N

**TABLE E-1
UTTR - NORTH AREAS OF CONCERN
(4 of 12)**

Site	Name	Location	Dimensions	Dates of Operation	Types of Operations	Description of Wastes	Release*
37	Disposal pits by main bomb circle #1 (Pit M-1)	Eagle range, 4000ft southwest of the Eagle range observation tower	120ft diameter	1975-Present	Target complex	Scrap metal, inert munitions with live spotting charges, 2 1/2 ton military truck, tires, mark 106 practice bombs, 6ft x 20ft steel tank	N
37W	West Track (WTAC) target buried tank and vehicle parts (Pits M-2 and M-3)	Eagle range, 1.1 miles west of the Eagle range observation tower	60ft x 100ft x 4 ft high	1975-present	Target complex	Three Sherman tanks, truck parts, inert munitions, practice bombs with live spotting charges, residues from a F-4 crash site	N
38W	Disposal pit in middle of west strafe run (M-4)	Eagle range, 0.35 miles southwest of the Eagle range observation tower	Unknown	1978-1980	Target complex disposal area	Scrap metal, spent and live 20-mm munitions, paint cans	N
38N	Disposal pit in middle of north strafe run (M-5)	Eagle range, 0.2 miles east of the Eagle range observation tower	Unknown	1978-1980	Target complex disposal area	Spent and live 20-mm munitions	N
39W	Disposal pit next to west strafe run (M-6)	Eagle range, 0.28 miles west of the Eagle range observation tower	Unknown pit dimensions, 10ft x 5 ft x 3ft high pile	1975-1983	Ordnance and target debris collection and disposal	Scrap metal, spent and live 20-mm munitions and debris	N
39N	Disposal pit next to north strafe run (M-7)	Eagle range, 0.5 miles northeast of the Eagle range observation tower	Unknown pit dimensions, several small piles	1975-1983	Ordnance and target debris collection and disposal	Scrap metal, spent and live 20-mm munitions and debris	N
40	Disposal pit at the iboneyard (M-8)	Eagle range, 2000ft west-northwest of the Eagle range iboneyard	75ft diameter	Unknown	Inert bombs and waste from target preparation	Inert bombs, wastes from target vehicle preparation	N
41	Disposal pit beneath break room (M-9)	Eagle range	15ft diameter, 18ft deep	Prior to 1979	Disposal of inert bombs and domestic garbage	Inert bombs and domestic garbage	N
42	Disposal pit north of north strafe run (M-10)	Eagle range, 0.54 miles northeast of the Eagle range observation tower	20ft diameter, 20ft deep	1978-1980	Spent ordnance and target debris collection and disposal	Scrap metal, spent and live 20-mm munitions and debris	N

**TABLE E-1
UTTR - NORTH AREAS OF CONCERN
(5 of 12)**

Site	Name	Location	Dimensions	Dates of Operation	Types of Operations	Description of Wastes	Release*
43	Bravo munitions trenches (M-11)	Eagle range, 2 miles southeast of the Eagle range observation tower	1000ft x 20ft, several 10-12ft deep trenches	Early to late 1980s	Spent ordnance and target debris collection and disposal	Scrap metal, spent munitions debris, practice bombs, 20-mm practice munitions, waste oil, solvents	N
44	Disposal pits at Target #18 (M-12, M-13, and M-14)	Eagle range, 1.25 miles northwest of the Eagle range observation tower	Four trenches. Eight surface debris sites, up to 25ft x 25 ft	Trenches 1980-1990 Surface Debris 1991-present	Spent ordnance and target debris collection and disposal from Target 18	Scrap metal, spent munitions debris	N
45	Disposal pit 50 ft southeast of vehicle maintenance (W-1)	Eagle range	TBD	1975-early 1980s	Disposal of wastes from the vehicle maintenance shop and administrative building	Vehicle parts, waste oil, waste solvents and fuels, paint, scrap metal, construction debris, 20mm munitions debris, 20 pound Bomb Dummy units	N
46	Disposal pit under water tank (W-2)	Eagle range	12ft x 10ft	1975-1978	Disposal of office trash	Office trash	N
47	Former dump area north of north strafe run (W-3)	Eagle range	20ft diameter x 20 ft deep	1980-1982	Disposal and burn of waste liquids (MEK, acetone, and paint), tires, and office trash	Waste liquids (MEK, acetone, and paint), tires, and office trash	N
48W	Big Papa craters and trench	Big Papa, 1.7 miles north of the intersection of Big Papa Road and Ash Avenue	2 craters, 40ft diameters, 4ft deep; trench 50ft x 120ft	Unknown	Disposal of propagation bomb testing debris	Wood planks, metal debris, spent rocket debris, Mark 36 practice bombs	N
48N	Big Papa test area north trench	Big Papa, 0.34 miles north of the intersection of Big Papa Road and Ash Avenue	25ft x 20ft	Late 1960s-1989	Disposal of residual material from open storage munitions testing	Scrap metal, wire, wood, parachute material, dummy bomb parts	N
48E	Big Papa trenches	Big Papa, 0.4 miles north of the intersection of Big Papa Road and Ash Avenue	2 trenches, ~250 x 75 x 10 ft and 140 x 35 x 10 ft	Late 1960s-1989	Disposal of residual material from static bomb propagation testing at the Big Papa area	Scrap metal, spent munitions debris, empty guided missile containers, live munitions and construction debris	N

**TABLE E-1
UTTR - NORTH AREAS OF CONCERN
(6 of 12)**

Site	Name	Location	Dimensions	Dates of Operation	Types of Operations	Description of Wastes	Release*
49	Munitions burial trench	1.0 miles north and 1.75 miles east of UTTR-North of UTTR-North south gate entrance	Unknown	1958-1964	Disposal trench for practice bombs	Practice bomb parts and debris	N
50	Munitions debris pile	1000ft southeast of Site 49	5ft x 15ft	Unknown	Collection and disposal of practice bomb and target debris	Practice bomb parts, spent flare canisters, metal scrap, ejection seat canisters	N
51	Strafing target S1 debris Pile#1	1.6 miles north of UTTR-North south gate entrance	20ft x 20ft x 6ft	1956-1958	Disposal pile for target material from Target S1	Debris material from Target S1, scrap metal, spent munitions debris, rocket propellant	N
52	Strafing target S1 debris Pile#2	1.7 miles north of UTTR-North south gate entrance	30ft x 30ft x 10ft	1956-1958	Disposal pile for target material from Target S1	Debris material from Target S1, scrap metal, spent munitions debris	N
53S	Practice bomb debris pile at Strafing target S1	1.0 miles north and 0.75 miles west of UTTR-North south gate entrance	30ft x 100ft	1956-1958	Disposal of practice bombs	Spent practice bombs	N
53N	Bomb Craters north of Site 53S	1.4 miles north and 1.5 miles west of UTTR-North south gate entrance	50ft x 110ft x 10 ft	1956-1958	One time detonation of 10,000 pound bombs	Metal scrap	N
54	Rocket Motor Burn Areas	1.6 miles north UTTR-North south gate entrance and 1.7 miles west of Lambert Boulevard	10ft x 10ft	Unknown	Rocket motor burn	Burnt rocket motor debris	N
55	Munitions burial trench	0.1 miles north and 0.2 miles west of UTTR-North south gate entrance	45ft x 135ft	Unknown	Unknown	Detonation cord, propellant, live and spent 50 caliber shells, potential CBU fragments	U

TABLE E-1
UTTR - NORTH AREAS OF CONCERN
 (7 of 12)

Site	Name	Location	Dimensions	Dates of Operation	Types of Operations	Description of Wastes	Release*
56	West of former Oasis Compound area burial trench	Northwest corner of intersection of Artic Road and Ash Avenue	Unknown	1956-1970	Disposal of spent munitions and target debris	Scrap metal, spent flares, sand filled bombs	N
56E	North of former Oasis Compound area	Northeast corner of intersection of Artic Road and Ash Avenue	30ft x 90ft	1950s-1970s	Borrow trench for construction projects	None suspected	N
57	Sink Valley Munitions Landfill	4 miles north of Oasis Compound and 0.5 miles west of Oasis Compound Road	Unknown	1958-1966	Disposal of target and munitions debris	Weathered propellant, metal, wood, bomb debris, window glass	N
58	Debris pile	0.3 miles west of the intersection of Charlie road and Big Papa Road	25ft diameter x 2ft high	Early 1970s	Rocket motor impaler tests and munitions disposal	75 caliber shell casings, CBU spinners, concrete, rebar, vehicle parts,	N
59	Laser tunnel target pad	0.5 miles east of Target 13	300ft diameter	Early 1980s	Smart bomb target practice	Wood, metal fragments and debris	N
60	Bomb crater propagation testing debris	900 ft east of Little Papa test pad	120ft diameter	1969-1988	Disposal of debris from propagation testing at Little Papa testing pad	Concrete, rebar, shipping containers, scrap metal, spent and possible live munitions debris, flare canisters, weathered propellant	N
61	Bomb crater spent flare debris dump	600ft south of Little Papa test pad	50ft diameter	1969-1988	Propagation testing at Little Papa testing pad	Spent flares, metal, concrete debris, wood	N
62	HAG munitions trench	Western edge of the coffin in the HAG	30ft x 70ft x 8ft deep	1965-1975	Disposal trench for spent and live munitions	Ordnance	N
63	North debris filled shallow depression	Three miles west of Little Papa test pad	100ft x 30ft	Late 1950s	Disposal area for target debris	Empty 55 gallon drums, scrap metal, spent munitions, wood scraps	N

**TABLE E-1
UTTR - NORTH AREAS OF CONCERN
(8 of 12)**

Site	Name	Location	Dimensions	Dates of Operation	Types of Operations	Description of Wastes	Release*
63S	Target debris accumulation area	200 yards south of Site 63	Debris scattered over 480ft	Late 1950s	Disposal area for target debris	Empty 55 gallon drums, tanker shell, aircraft fuel tanks, metal debris	N
64	Spent rocket motor debris pile	1.5 miles west of Candy Mountain	10ft diameter	1964-1965	Disposal of spent rotor motors	Rocket motor debris	U
65	Target 24 open munitions trench	Western edge of Target 24	20ft x 75ft x 6 ft deep	Early 1960s to early 1990s	Disposal of spent munitions debris from Target 24	Spent and live munitions	N
66	Target 24 buried munitions trenches	Southeast corner of Target 24	Unknown	1955-early 1970s	Spent ordnance and target debris disposal	CBUs, unexploded bombs, electronic and inert material	N
67	Target 13 and Target 23 open munitions trenches	600ft east of Target 13	25ft x 75ft x 6ft deep	1964-1988	Spent ordnance and target debris collection and disposal	Spent and live munitions, empty CBU dispensers, tires, scrap metal, wooden munitions crates	N
68	Diddle Knoll Ravine	3 miles north of UTTR-North south gate entrance	30ft x 70ft	Early 1960s-mid-1970s	Radio station general solid waste disposal	Tin cans, wood scrap, glass, broken florescent light bulbs, metal debris	N
69	Target 13 buried munitions trench	0.5 miles east of Target 13	Unknown	1956-early 1980s	Spent ordnance and target debris collection and disposal	Live fuses, spent flares, practice bombs	N
70	F-16 crash debris pile	To be determined	To be determined	To be determined	To be determined	To be determined	U
71	Somokey Sam propellant casings	To be determined	To be determined	To be determined	To be determined	To be determined	U
72	Detonation craters	1.25 miles west of UTTR-North south gate entrance	10ft x 30ft trench and 8 crater	Unknown	Possible disposal of munitions debris and test detonations	Unknown ñ potential munitions	U
73	Open burn area	0.36 miles north of UTTR-North south gate entrance and 0.17 miles west of Lambert Boulevard	100ft x 50ft	Unknown	Open burn area	Metal, glass, charcoal, vitrified soil	N

TABLE E-1
UTTR - NORTH AREAS OF CONCERN
 (9 of 12)

Site	Name	Location	Dimensions	Dates of Operation	Types of Operations	Description of Wastes	Release*
74	Craters south of Target 24	To be determined	To be determined	To be determined	To be determined	To be determined	U
75	Corrosion test site north	East of Target 21, 1200ft west of Lambert Boulevard and target access road intersection	Three trenches in an area 30ft x 150ft x 4ft deep	1973-1984	Corrosion test site for empty agent orange 55-gallon drums	Steel drums, waste sludge, fly ash	N
75S	Corrosion test site south	East of Target 21, 1200ft west of Lambert Boulevard and target access road intersection	Three trenches in an area 30ft x 150ft x 4ft deep	1973-1984	Corrosion test site for empty agent orange 55-gallon drums	Steel drums, waste sludge, fly ash	N
76	Agent Orange test site	East of Target 21, 900 feet west of Lambert Boulevard and target access road intersection	60ft x 60ft subdivided into four quadrants	1972-1974	Agent Orange application test site	1000 pounds, 2000 pounds, 2000 pounds and 4000 pounds per acre application rates in respective quadrants	Agent Orange
77	Rocket motor burn site	1.6 miles north of UTTR-North south gate entrance and 1.7 miles west of Lambert Boulevard	6ft x 18ft	Unknown	Rocket motor burn site	Debris from rocket motor	N
78	Debris filled crater	1.8 miles north of UTTR-North south gate entrance and 0.47 miles west of Lambert Boulevard	35ft diameter, 3ft deep	Unknown	Disposal pile for debris from Target S1	Bomb parts, metal debris	N
79	Open trench	300ft west of Site 78	150ft long x 3ft deep trench and 20ft diameter x 5ft deep depression	Unknown	Possible detonation of 2.75 inch rockets	Red and brown propellant	N
80	Rocket motor burn site	2.2 miles north of UTTR-North south gate entrance and 1.6 miles west of Lambert Boulevard	8ft x 25ft	Unknown	Rocket motor burn site	Debris from rocket motor	N

TABLE E-1
UTTR - NORTH AREAS OF CONCERN
 (10 of 12)

Site	Name	Location	Dimensions	Dates of Operation	Types of Operations	Description of Wastes	Release*
81	Rocket motor burn site	300ft east of Site 80	7ft x 20ft	Unknown	Rocket motor burn site	Debris from rocket motor	N
82	Rocket motor burn site	2.1 miles north of UTTR-North south gate entrance and 1.8 miles west of Lambert Boulevard	8ft x 12ft	Unknown	Rocket motor burn site	Debris from rocket motor	N
83	Detonation Crater	0.92 miles north UTTR-North south gate entrance and 0.26 miles west of Lambert Boulevard	25ft diameter	Unknown	Disposal of spent propellant canisters and spent flares	Burnt propellant and flare canisters	N
84	Rocket motor burn site	2.2 miles north of UTTR-North south gate entrance and 1.7 miles west of Lambert Boulevard	12ft x 12ft	Unknown	Rocket motor burn site	Debris from rocket motor	N
85	Open trench adjacent to the fuse drop site	1600ft west of the intersection of Charlie Road and Ash Avenue	25ft x 100ft	Late 1950s-mid-1960s	Launch site for unguided missiles	Spent rocket motor casings, launch debris, live Cluster Bomb Unit casings, 3-55 gallon drums, 2 wooden posts	N
86	Open trench	1800ft south of the intersection of Charlie Road and Ash Avenue	15ft x 80ft	Late 1960s-early 1970s	Shelter tests	No debris in trench. Spent flare, one 2-mm casing in vicinity of trench	N
87	Tank trends and partially buried debris	0.8 miles southeast of the intersection of Charlie Road and Ash Avenue	Two 50ft diameter areas	Unknown	Possible detonation sites	Metal debris, electrical wire	N
88	Buried drums	1.5 miles east of Oasis Compound	Buried drums	Unknown	Drum disposal	Unknown	U

**TABLE E-1
UTTR - NORTH AREAS OF CONCERN
(11 of 12)**

Site	Name	Location	Dimensions	Dates of Operation	Types of Operations	Description of Wastes	Release*
89	Tire target circle	0.6 miles west of Site 63-North	800ft diameter	Unknown	Target	Tires, bomb and other metallic debris, wood scrap, 55-gallon drum (no top or bottom), dark brown degraded substance approximately 10 inches in diameter	N
90	S1 Strafe shack	1.4 miles north of UTTR-North south gate entrance and 0.9 miles west of Lambert Boulevard	15ft x 5 ft x 9ft high	Unknown	Debris disposal from Target S1	Burnt canvas, glass, metal, light bulbs, nails, wood	N
91	Staging location for target material	1.37 miles north of Checkpoint Alpha along Charlie Road	Unknown	Early 1970s-1980s	Staging area for target material	25% full 55 gallon drum of Agent orange (shipped to Defense Reauthorization and Marketing Office in 1992 and disposed of), wooden target silhouettes, tires	N
92	Burial trench near Sink Valley	1.1 miles east of Little Papa test pad	90ft x 250ft	1979-1986	Disposal of debris from propagation testing at Little Papa test pad	B-52 airplane parts, spent and live munitions	N
93	Open trench with debris	1.3 miles north of UTTR-North south gate entrance and 1.7 miles west of Lambert Boulevard	15ft x 40ft x 3ft deep	Unknown	Unknown ñ possible detonation area	No debris in the trench. Metal debris is scattered around the trench.	N
94	CBU Valley debris trench	0.81 miles east-northeast of Checkpoint Alpha in CBU Valley	30ft x 300ft x 4 ft deep	Early 1060s-mid-1970s	Disposal of munitions debris from Eagle and CBU Valley ranges	Practice bombs, ejection booster rockets, land mine debris, bouncing betty anti-personnel bomb debris, live 20-mm munitions, wood and scrap metal	N

TABLE E-1
UTTR - NORTH AREAS OF CONCERN
 (12 of 12)

Site	Name	Location	Dimensions	Dates of Operation	Types of Operations	Description of Wastes	Release*
95	CBU Valley crater with debris	0.66 miles east-northeast of Checkpoint Alpha in CBU Valley	90ft diameter, 25ft deep	Mid-1970s-mid1980s	Disposal of munitions debris from CBU Valley range	Practice bombs, concrete, empty munitions boxes, spent 20- and 40-mm munitions casings, wood and scrap metal	N
96	Burial trench near fuse drop site	1375ft southwest of the intersection of Charlie Road and Ash Avenue	20ft x 100ft	Unknown	Unknown	Unknown	N
97	Crater with 55-gallon drum and motor burn debris	1.52 miles north of UTTR-North south gate entrance and 1.8 miles west of Lambert Boulevard	20ft diameter, 3ft deep	Unknown	Unknown	Empty 55-gallon drum, burned rocket motor debris	N

- * CBU Cluster bomb unit
 D Discharge to drainfield
 HAG Helicopter Air-to-Ground Gunnery Range
 N None known
 P Potential surface release
 S Suspected surface spill
 U Unknown
 Y Yes
 Y-1 Release of approximately 500,000 gallons of waste engine oil, diesel fuel, and solvents
 Y-2 Release of approximately 40,000 gallons of rocket motor test burn quench water
 Y-3 Spill of sulfuric acid from a 3,000-gallon AST in 1986. Soil removed and replaced. Ground was covered with asphalt.

TABLE E-2
UTTR-SOUTH AF AND WENDOVER AFAFR-UTAH AREAS OF INTEREST
(1 of 2)

Range	Class	AOI Number	AOI Name	AOI Type	General Location	Brief Description	Recommended Further Actions
UTTR-South AF	I	S01UT	Impact Crater	Crater	Eastern portion of the range, southeast of Kittycat Mountain	An impact crater containing pink water.	<ul style="list-style-type: none"> ◆ Implement a worker awareness program which identifies the AOI as a potentially hazardous area ◆ Conduct further investigation to include collecting samples to identify if a hazardous substance, pollutant, or contaminant release has occurred at the AOI
		S05UT	Debris Pile	Pile	Eastern portion of the range, northwest of Kittycat Mountain	A pile of used military munitions and non-hazardous materials, including a potential UXO.	<ul style="list-style-type: none"> ◆ Implement a worker awareness program which identifies the AOI as a potentially hazardous area ◆ Conduct further investigation, including: <ul style="list-style-type: none"> ● Contacting EOD to determine whether UXO are or were located at this AOI ● Conducting a site visit to determine if there is evidence of a hazardous substance, pollutant, or contaminant release at this AOI ◆ Move used military munitions and non-hazardous materials to the permitted Wildcat Range Monofill
		S07UT	SALVO Area	Target/Test Area	Western portion of the range	The area has historically been used to jettison ordnance or fuel from military aircraft during emergency situations.	<ul style="list-style-type: none"> ◆ Implement a worker awareness program which identifies the AOI as a potentially hazardous area ◆ Conduct further investigation to collect samples to identify if a hazardous substance, pollutant, or contaminant release has occurred at this AOI
		S09UT	Ore Processing Station	Structure	Western portion of the range, south of Mosquito Willy's	An old ore processing station that predates military use of the area, likely used in conjunction with Gold Hill related mining activities.	<ul style="list-style-type: none"> ◆ Implement a worker awareness program which identifies the AOI as a potentially hazardous area ◆ Conduct further investigation to collect samples to identify if a hazardous substance, pollutant, or contaminant release has occurred at this AOI
		S11UT	Debris Pile	Pile	Eastern portion of the range, northeast of Sand Island	The area contains a pile of tires, four or more 55-gallon drums, and black stained soil.	<ul style="list-style-type: none"> ◆ Implement a worker awareness program which identifies the AOI as a potentially hazardous area ◆ Conduct further investigation to collect samples to identify if a hazardous substance, pollutant, or contaminant release has occurred at this AOI
		S12UT	Debris Pile	Pile	Western portion of the range, adjacent to Mosquito Willy's	The area contains several drums, metal debris, and black stained soil.	<ul style="list-style-type: none"> ◆ Implement a worker awareness program which identifies the AOI as a potentially hazardous area ◆ Conduct further investigation to collect samples to identify if a hazardous substance, pollutant, or contaminant release has occurred at this AOI
		S13UT	Reactor Meltdown Test Grid	Target/Test Area	Southern portion of the range, along the southern UTTR-South AF boundary	The UTTR-South AF portion of a sampling network grid used during reactor meltdown tests conducted by the Air Force at DPG.	<ul style="list-style-type: none"> ◆ Implement a worker awareness program which identifies the AOI as a potentially hazardous area ◆ Conduct further investigation, including: <ul style="list-style-type: none"> ● Reviewing additional documentation regarding the reactor meltdown test results/activities ● Collecting samples to identify if residual radiation is present at this AOI
	II	S02UT	Burial Crater	Crater	Eastern portion of the range, east of Kittycat and Wildcat Mountains	A partially filled impact crater in which used military munitions were buried.	<ul style="list-style-type: none"> ◆ Implement a worker awareness program which identifies the AOI as a potentially hazardous area ◆ Conduct further investigation to delineate the AOI's boundaries using non-intrusive methods ◆ Restrict access to the site ◆ Prepare a Site Management Plan

**TABLE E-2
UTTR-SOUTH AF AND WENDOVER AFAFR-UTAH AREAS OF INTEREST
(2 of 2)**

Range	Class	AOI Number	AOI Name	AOI Type	General Location	Brief Description	Recommended Further Actions
UTTR-South AF (Continued)	II	S03UT	Debris Pile	Pile	Eastern portion of the range, east of Kittycat and Wildcat Mountains	A pile of used military munitions and non-hazardous materials, some of which may be partially buried.	<ul style="list-style-type: none"> ◆ Implement a worker awareness program which identifies the AOI as a potentially hazardous area ◆ Conduct further investigation to delineate the AOI's boundaries using non-intrusive methods ◆ Restrict access to the site ◆ Prepare a Site Management Plan
		S04UT	Burial Trenches	Trench	Eastern portion of the range, southeast of Wildcat Mountain	Series of covered trenches in which used military munitions were buried.	<ul style="list-style-type: none"> ◆ Implement a worker awareness program which identifies the AOI as a potentially hazardous area ◆ Conduct further investigation to delineate the AOI's boundaries using non-intrusive methods ◆ Restrict access to the site ◆ Prepare a Site Management Plan
		S06UT	Inert Scrap Burial Area	Trench	Eastern portion of the range, west of Kittycat Mountain	An inert scrap burial area identified on a 1967 range map.	<ul style="list-style-type: none"> ◆ Implement a worker awareness program which identifies the AOI as a potentially hazardous area ◆ Conduct further investigation, including: <ul style="list-style-type: none"> ● Conducting a site visit to locate the burial area ● Delineating the AOI's boundaries using non-intrusive methods after the burial area is located ◆ Restrict access to the site ◆ Prepare a Site Management Plan
		S08UT	Inert Scrap Burial Area	Trench	Western portion of the range, east of the SALVO Area	An inert scrap burial area identified on a 1967 range map.	<ul style="list-style-type: none"> ◆ Implement a worker awareness program which identifies the AOI as a potentially hazardous area ◆ Conduct further investigation, including: <ul style="list-style-type: none"> ● Conducting a site visit to locate the burial area ● Delineating the AOI's boundaries using non-intrusive methods after the burial area is located ◆ Restrict access to the site ◆ Prepare a Site Management Plan
	III	S10UT	Potential Burial Trench	Trench	Eastern portion of the range, east of Wildcat Mountain	A portion of the trench appears to have been filled. However, no used military munitions, hazardous materials, or non-hazardous materials were observed in the area.	<ul style="list-style-type: none"> ◆ Implement a worker awareness program which identifies the AOI as a potentially hazardous area ◆ Conduct further investigation to determine whether used military munitions are buried at the AOI using non-intrusive methods
Wendover AFAFR-Utah	II	W01UT	Detonation Craters	Crater	Western portion of the range, east of the state line gravel road	Five craters from the detonation and burning of Thiokol Minuteman I and II rocket motors. Target residue may have been buried in the craters.	<ul style="list-style-type: none"> ◆ Implement a worker awareness program which identifies the AOI as a potentially hazardous area ◆ Conduct further investigation to determine whether used military munitions are buried at the AOI using non-intrusive methods

AOI Area of Interest
 DPG Dugway Proving Ground
 EOD Explosive Ordnance Disposal
 UTTR-South AF Utah Test and Training Range-South Air Force
 UXO Unexploded Ordnance
 Wendover AFAFR Wendover Air Force Auxiliary Field Range

APPENDIX F

HILL AFB ENVIRONMENTAL SETTING

Appendix F

APPENDIX F

HILL AFB ENVIRONMENTAL SETTING

This appendix contains an overview of the physical setting in which Hill AFB is located. Included are brief discussions of the geographic setting; geology; hydrogeology; hydrology; and climate, demography, and ecology of the Base.

Geographic Setting. Hill AFB is located immediately west of the Wasatch Mountains on the former Weber River delta. It is included in the East Shore hydrogeologic region of northern Utah, which consists of the east side of the Lake Bonneville Basin. The Wasatch Fault, which separates the Basin and Range from the Middle Rocky Mountain province, occurs a few miles east of the Base. Land forms in the Basin and Range are generally characterized by alternating, north trending block-faulted mountains and intermontane basins flanked by alluvial fans and outwash slopes. The local geomorphology and geology in the East Shore area were shaped by Lake Bonneville during the Pleistocene Epoch (from 2 million to 10,000 years ago). Lake Bonneville subsequently receded due to climatic changes and drainage through the Snake River leaving the Great Salt Lake.

Hill AFB occupies approximately 6,700 acres of a delta terrace of sediments deposited by the Weber River as it flowed into Lake Bonneville. The delta surface has slight to moderate relief with elevations varying from approximately 4,600 feet above sea level along the western boundary of Hill AFB to 5,045 feet above sea level along the eastern boundary. In contrast, the Wasatch Mountains, about four miles to the east, rise abruptly to an elevation of over 9,500 feet. The Great Salt Lake, about 12 miles west of Hill AFB, is presently at an elevation of 4,203 feet above sea level.

Local Geology. The surficial and near-surface geology of the East Shore area was mapped by Feth and others (1966) as unconsolidated deposits of gravel, sand, silt, and clay. These deposits are grouped into the Alpine and Provo Formations, deposited during the Alpine and Provo stages of Lake Bonneville. The Provo Formation, which overlies the Alpine consists of gravel and sand while the Alpine Formation is characterized by gravel, sand, clay, and silt with interbedded layers of fine sand and clay. The most distinctive feature of the Alpine Formation is a slabby

salmon pink to reddish brown well-consolidated clay. The Provo Formation is generally 10 to 30-feet thick in the vicinity of Hill AFB, whereas sections of the Alpine Formation are 101 to 135 feet thick (Feth and others, 1966; USGS, 1988).

Differentiation between the Alpine and Provo formations in the vicinity of Hill AFB can be difficult due to wave action on the surface of the delta as the elevation of Lake Bonneville fluctuated. The surface sediments were eroded and redeposited, which produced an uneven erosional contact between the two formations. While the contact is not well defined, subsurface investigations at many Hill AFB locations have revealed coarser sandy silt and gravel deposits overlying silty clays and fine sands. These findings are consistent with the interpretations of Feth and others (1966) and the USGS (1988).

Hydrogeology. The East Shore hydrogeologic region of northern Utah is divided into several subdistricts based on hydrogeologic characteristics. Hill AFB is included in the Weber Delta subdistrict, which occupies about 140 square miles and is bounded by the Wasatch Mountains and the Great Salt Lake to the east and west, respectively. The northern and southern boundaries were determined based on changes in well yields. Although the Weber Delta subdistrict is underlain predominantly by fine-grained materials, large well yields have been observed. Despite the variability in the quality of ground water in the subdistrict, the water quality is generally good with low total dissolved solids and calcium to calcium-magnesium bicarbonate water types.

Usable quantities of ground water can be obtained from three primary aquifers in the Weber Delta subdistrict. The first is an unnamed, deep unconfined aquifer along the mountain front that is characterized by coarse-grained sediments. Sediments become finer and more stratified with distance from the mountains, where two deep, confined aquifers exist. These two aquifers, the Sunset and Delta, are considered the principal aquifers of the East Shore area. They occur at depths of approximately 250 to 400 feet and 500 to 700 feet below the ground surface, respectively. Shallow ground water also occurs in

flood plain deposits along stream channels, in isolated perched aquifers, and regionally in the valley lowlands within a few feet of the ground surface.

Ground water in the Weber Delta subdistrict generally flows from recharge areas along the front of the Wasatch Range toward the west and southwest to discharge areas along the Great Salt Lake. Recharge to the shallow aquifers occurs by seepage from the Weber River, streams, and canals; and by infiltration of precipitation and excess irrigation water. Recharge to the shallow aquifers also results from upward ground-water flow from underlying water-bearing units. Recharge to deeper, confined, aquifers occurs through subsurface inflow from fractures and joints in the consolidated rocks of the Wasatch Range and from under-flow from the deep unconfined aquifer near the mountain front. Most discharge from the principal aquifers is to wells, springs, and the shallow aquifers near the Great Salt Lake. Ground water in the shallow aquifers is discharged to drains, streams, and springs, and to the atmosphere through evapotranspiration.

Hydrology and Climate. The natural drainage patterns of Hill AFB have been altered over the years as the Base has developed. Surface water runoff is diverted into a series of ponds near the Base boundaries. The ponds retain the runoff until it evaporates or infiltrates into the ground. During heavy precipitation events, the retention ponds have overflowed into nearby storm sewers and natural drainages. The Davis-Weber canal runs around the outside perimeter of the east, north, and west sides of the Base and is used to transport and store irrigation water from April to October each year. The Davis-Weber canal is privately-owned and is not used to transport water to or from Hill AFB.

The climate in the vicinity of Hill AFB is temperate and semi-arid. Mean monthly temperatures are lowest in January, with an average maximum temperature about 31.8 degrees Fahrenheit (° F) and an average minimum temperature of 21.7° F. The highest temperatures occur during July when maximum temperatures average about 82.5° F and the minimum average is 63.9° F. The frost-free growing season is from May through September. The average annual precipitation recorded during the period 1978 to 1990 at a gauging station located in Riverdale (one-half mile northeast of the Base) was 19.8 inches. The majority of precipitation falls from October through May. May is usually the wettest month, and June and July are the driest months. Average annual evaporation is approximately 45 inches of water per

year. Winds at Hill AFB are predominantly from the east and south at generally less than 10 miles per hour.

Population. The Hill AFB area is part of the Wasatch Front, which is generally defined by Weber, Davis, Morgan, Salt Lake, Utah, and Tooele counties. The Wasatch Front comprises the geographic area along the west slope of the Wasatch Mountains. The Wasatch Front has seen rapid population growth in recent years; during the period from 1970 to 1995, the combined population of Weber, Davis, Morgan, Salt Lake, and Tooele counties grew from an estimated 710,000 to 1.24 million, an increase of 75 percent. The estimated 1995 combined population of Davis and Weber Counties was 392,000, which showed an increase of 76 percent over 1970. Communities adjacent to the Base are Clearfield, Layton, Sunset, Clinton, Roy, South Weber and Riverdale, collectively have a population of about 185,000. Table F-1 presents the regional population figures beginning in 1970 and includes population projections through the year 2005.

Housing and commercial development have increased commensurate with this population growth in areas adjacent to Hill AFB. The period between 1970 and 1985 saw a 69 percent increase in the number of housing units in Weber and Davis Counties, resulting in a total of 102,000 units by 1985.

Employment. Total employment along the Wasatch Front area has generally kept pace with the population growth. During the period of 1970-1995, total employment in the region grew from an estimated 264,000 to 475,000 jobs. Weber and Davis Counties showed a combined 60 percent jobs increase during this 15-year period. Government (federal, state, and local) is the largest single employer in these counties (as well as the State of Utah overall), comprising 53 and 27 percent of employment in Davis and Weber Counties, respectively, and 22 percent of state-wide employment. The economic base of these counties is heavily dependent on federal employment, and Hill AFB is a major employer. Other large employers, such as Eimco, Kennecott Utah Copper Division, and Alliant now employ several hundred people in the area, but the majority of the region's non-government employment is in small or medium industry and businesses.

Land Use. Surrounding land use is varied, and includes uses as diverse as agriculture and heavy industry. In general, areas to the west of the Base are highly developed

with a high population density, while the areas east of the Base contain large open and agricultural tracts. Lands to the north, northeast, and south show intermediate levels of development, with residential and business/light industry distributed among open tracts of land.

Flora. Hill AFB is located in a geographic region that would typically support a mountain-brush type native plant community. Dominant vegetation in this plant community includes scrub oak (*Quercus gambelii*), big sagebrush (*Artemisia tridentata*), rabbit brush (*Chrysothamus* sp.), and western wheatgrass (*Agropyron smithii*). However, much of Hill AFB has been developed, and the area is populated by introduced species. Only a small remnant of the native plant community occurs at the northern portion of the Base. Other micro environments also occur at Hill AFB. One such environment is the storm-water retention basins that support vegetation associated with wetlands including sedge grasses (*Carex* sp.), sandbar willow (*Salix exigua*), and cattails (*Typha latifolia*) (Hill AFB, 1989). Although Hill AFB supports a broad variety of plant life, currently no threatened or endangered plant species have been identified. The *Natural Resource Management Plan for Hill Air Force Base, Utah* provides a complete listing of the flora found on Base (Hill AFB, 1989).

Fauna. The wildlife found at Hill AFB are common to mountain-brush habitat and the western United States. Wildlife are most frequently found in the relatively undisturbed northern area of the Base. Wildlife in this area consists of a variety of large and small mammals, birds, amphibians and reptiles. Common residents include: mule deer (*Odocoileus hemionus*), fox (*Vulpes vulpes*), coyotes (*Canis latrans*), mice (*Peromyscus* sp.), shrews (*Sorex* sp.), weasels (*Mustela frenata*), cottontail (*Sylvilagus nuttalli*) and jack rabbits (*Lepus* sp.), lizards, pheasants (*Phasianus colchicus*), meadow larks (*Stumella neglecta*), horned larks (*Eremophila alpestris*), magpies (*Pica pica*), and killdeers (*Charadrius vociferus*). Wildlife species found in the wetlands include mallard ducks (*Anas platyrhynchos*) and great blue herons (*Ardea herodias*). Two endangered species, the American bald eagle (*Haliaeetus leucocephalus*) and the peregrine falcon (*Falco peregrinus*), may use Hill AFB. Bald eagles from the northern latitudes winter along streams and lakes throughout Utah and have been observed at the Weber River just north of the Base. Peregrine falcons have been reintroduced in the marshes along the Great Salt Lake and also could be occasional visitors to the area. Aside from these two species, no threatened or endangered species have been identified at Hill AFB.

TABLE F-1
REGIONAL POPULATION TRENDS AND PROJECTIONS

	1970	1980	1985	1990	1995	2000	2005
State of Utah	1,059,273	1,474,000	1,665,600	1,722,950	1,957,700	2,130,000	2,343,100
Wasatch Front Region (a)	709,441	941,195	1,051,854	1,104,400	1,237,500	1,337,800	1,465,800
Davis County	99,028	147,509	171,261	187,900	215,400	236,000	259,300
Weber County	124,130	139,890	157,525	158,300	176,600	196,700	210,400

Source: Wasatch Front Regional Council (January 1996)(Projections rounded to nearest 100 persons)

(a) Participating Counties: Davis, Weber, Morgan, Salt Lake, and Tooele

Appendix G

APPENDIX G

EMR TECHNICAL DOCUMENTS SUMMARY

APPENDIX G

EMR TECHNICAL DOCUMENTS SUMMARY

This appendix lists primary technical documents that have been generated for each Operable Unit and the associated data loading status. Most documents are stored in both

paper and electronic format. More detailed information regarding specific reports and data accessibility is available from EMR.

TABLE G-1
HILL AFB TECHNICAL DOCUMENTS/DATA LOADING SUMMARY
FOR OPERABLE UNITS
(1 of 36)

Operable Unit	Title	Date	EIMS and IRPIMS Status
1	An Investigation of Ground and Surface Water Pollution in the Vicinity of the Deactivated Landfill and Burn Pit	1976	Data not entered into IRPIMS-compatible format due to data quality
1	Leachate Investigation at Hill AFB Landfill	1981	Data not entered into IRPIMS-compatible format due to data quality
1	Final Submittal Impermeable Cap/Drainage Controls Landfill No. 3 Chemical Pits 1 & 2 Hill AFB, Utah	Jun 1985	Data not entered into IRPIMS-compatible format due to data quality
1	Feasibility Study for Site 1	1987	Data entered into EIMS in IRPIMS-compatible format by contractor
1	Soil Testing Landfill Cell #3 and Chem Pits #1 and #2 Hill Air Force Base, Utah	Mar 1987	Data not entered into IRPIMS-compatible format due to data quality
1	Remedial Investigation/Feasibility Study Work Plan	Apr 1988	Not applicable (contains no original analytical data)
1	Quality Assurance Project Plan	Apr 1988	Not applicable (contains no original analytical data)
1	Data Analysis Report for Operable Unit 1, Hill AFB, Utah	Aug 1989	Data entered into EIMS in IRPIMS-compatible format by contractor
1	Remedial Investigation/Feasibility Study for Operable Unit 1	1989	Data entered into EIMS in IRPIMS-compatible format by contractor
1	Program Data Analysis Report	Aug 1989	Data entered into EIMS in IRPIMS-compatible format by contractor
1	Slope Stability Summary Report	1990	Not applicable (contains no original analytical data)
1	Final Addendum A-E Work Plan and Safety, Health, and Emergency Response Plan	Jan 1990	Not applicable (contains no original analytical data)
1	Final Addendum A-E Quality Assurance Project Plan (Final Addendum)	Jan 1990	Not applicable (contains no original analytical data)
1	A-E Work Plan and Safety, Health and Emergency Response Plan	Jan 1990	Not applicable (contains no original analytical data)
1	Quality Control Summary Report for Operable Unit 1	Mar 1991	Not applicable (contains no original analytical data)
1	Indicator Chemical Selection Technical Memorandum for Operable Unit 1	Mar 1991	Not applicable (contains no original analytical data)
1	Exposure Pathway Summary Technical Memorandum for Operable Unit 1	Mar 1991	Not applicable (contains no original analytical data)
1	Draft Final Baseline Risk Assessment for Operable Unit 1	Nov 1991	Not applicable (contains no original analytical data)
1	Remedial Investigation Report for Operable Unit 1	Feb 1992	Data entered into EIMS in IRPIMS-compatible format by contractor
1	Assembled Alternatives Screening Technical Memorandum for Operable Unit 1	Mar 1992	Not applicable (contains no original analytical data)
1	Remedial Investigation/Feasibility Study Work Plan Addendum for Operable Unit 1	Jun 1992	Not applicable (contains no original analytical data)
1	Slope Stability Study Report for Operable Unit 1	Aug 1992	Not applicable (contains no original analytical data)
1	Detailed Analysis of Alternatives Technical Memorandum for Operable Unit 1	Sept 1992	Not applicable (contains no original analytical data)
1	Final Research Report for Aquifer Classification	Oct 1992	Not applicable (contains no original analytical data)
1	Monitoring Plan for Operable Unit 1	Nov 1992	Not applicable (contains no original analytical data)

TABLE G-1
HILL AFB TECHNICAL DOCUMENTS/DATA LOADING SUMMARY
FOR OPERABLE UNITS
(2 of 36)

Operable Unit	Title	Date	EIMS and IRPIMS Status
1	Review of Existing Landfill Gas Venting System and Landfill Gas Sampling Procedures Work Plan Addendum for Operable Unit 1	Nov 1992	Not applicable (contains no original analytical data)
1	Treatability Study Work Plan for Light Non-Aqueous Phase Liquid Recovery at Operable Unit 1	Jan 1993	Not applicable (contains no original analytical data)
1	Treatability Study Work Plan for Soil Vapor Extraction at Operable Unit 1	Jan 1993	Not applicable (contains no original analytical data)
1	Treatability Study Work Plan for Ultraviolet Oxidation at Operable Unit 1	Jan 1993	Not applicable (contains no original analytical data)
1 and 4	Treatability Study Work Plan for Sheet Pile Test Walls at Operable Units 1 and 4	Jun 1993	Not applicable (contains no original analytical data)
1	Sheet Pile Constructability Evaluation at Operable Units 1, 2, and 4	Oct 1993	Data entered into EIMS in IRPIMS-compatible format by contractor
1	Preprint Final Remedial Investigation Report Addendum for Operable Unit 1	Nov 1993	Data entered into EIMS in IRPIMS-compatible format by contractor
1	Work Plan for Hydrogeologic Investigation for Operable Unit 1	Nov 1993	Not applicable (contains no original analytical data)
1	First Quarter Data Evaluation for 1993 Ground-water and Surface Water Sampling for Operable Unit 1	Dec 1993	Data entered into EIMS in IRPIMS-compatible format by contractor
1	Landfill Removal Action Flowchart and Detailed Cost Estimating Model for Operable Unit 1	Jan 1994	Not applicable (contains no original analytical data)
1	Final Quality Control Summary Report for the Phase II Operable Unit 1 Remedial Investigation	Jan 1994	Not applicable (contains no original analytical data)
1	Second Quarter Data Evaluation for 1993 Ground-water and Surface Water Sampling for Operable Unit 1	Feb 1994	Data entered into EIMS in IRPIMS-compatible format by contractor
1	Final Surfactant Flushing Treatability Study Work Plan for Operable Unit 1	Apr 1994	Not applicable (contains no original analytical data)
1	Third Quarter Data Evaluation for 1993 Ground-water and Surface Water Sampling for Operable Unit 1	Apr 1994	Data entered into EIMS in IRPIMS-compatible format by contractor
1	Interim Draft Final Feasibility Study Report for Operable Unit 1	May 1994	Not applicable (contains no original analytical data)
1	Amendment to the Remedial Investigation/Feasibility Study Quality Assurance Project Plan for Operable Unit 1	May 1994	Not applicable (contains no original analytical data)
1	Final Quality Control Summary Report for Operable Unit 1	Aug 1994	Not applicable (contains no original analytical data)
1	Fifth Monitoring Round Data Evaluation for Operable Unit 1	Aug 1994	Data entered into EIMS in IRPIMS-compatible format by contractor
1	Fourth Quarter Data Evaluation for 1993 Ground-Water and Surface Water Sampling for Operable Unit 1	Sept 1994	Data entered into EIMS in IRPIMS-compatible format by contractor
1	Final Soil Vapor Extraction and Bioventing Treatability Study Work Plan for Operable Unit 1	Sept 1994	Not applicable (contains no original analytical data)
1	Waterloo Barrier System Sheet Pile & Sealant Installation Report Operable Unit #1	Oct 1994	Not applicable (contains no original analytical data)
1	Final Environmental Assessment and Baseline Survey for Operable Unit 1 (RP sites LF01, LF03, WP02, FT09, OT14, FT81, and WP80)	Dec 1994	Not applicable (contains no original analytical data)

TABLE G-1
HILL AFB TECHNICAL DOCUMENTS/DATA LOADING SUMMARY
FOR OPERABLE UNITS
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Operable Unit	Title	Date	EIMS and IRPIMS Status
1	Seventh Monitoring Round Data Evaluation for Operable Unit 1	Jan 1995	Data entered into EIMS in IRPIMS-compatible format by contractor
1	Final Sampling and Analysis Plan Addendum Spring 1995 for Operable Unit 1	Apr 1995	Not applicable (contains no original analytical data)
1	Engineering Evaluation/Cost Analysis of Containment Alternatives for Operable Unit 1	Apr 1995	Not applicable (contains no original analytical data)
1	Final Existing Containment System Evaluation and Pre-Design Data Report for Operable Unit 1	Apr 1995	Data entered into EIMS in IRPIMS-compatible format by contractor
1	Operable Unit 1 Field Sampling Plan Delivery Order 5061 April 1995 through March 1996	May 1995	Not applicable (contains no original analytical data)
1	Eighth Monitoring Round Data Evaluation for Operable Unit 1	May 1995	Data loaded into EIMS in IRPIMS-compatible format by contractor
1	Summary Letter Report of Spring 1995 Miscellaneous Operable Unit 1 Field Investigation	Aug 1995	Data loaded into EIMS in IRPIMS-compatible format by contractor
1	Interim Report: Evaluation of Bench Test Results for the Surfactant Flushing Treatability Study at Operable Unit 1	Aug 1995	Data entered into EIMS in IRPIMS-compatible format by contractor
1	Ninth Monitoring Round Data Evaluation for Operable Unit 1	Sept 1995	Data loaded into EIMS in IRPIMS-compatible format by contractor
1	Final Engineering Evaluation/Cost Analysis of Containment Alternatives for Operable Unit 1	Oct 1995	Not applicable (contains no original analytical data)
1	Fall 1995 Delivery Order 5075 Field Investigation Work Plan for Operable Unit 1 (RP Sites LF01, LF03, WP02, FT09, OT14, FT81, and WP80)	Oct 1995	Not applicable (contains no original analytical data)
1	Memorandum Request for a Removal Action for Operable Unit 1, Hill Air Force Base, UT	Oct 1995	Not applicable (contains no original analytical data)
1	Final Fall 1995 Field investigation Work Plan for Operable Unit 1	Oct 1995	Not applicable (contains no original analytical data)
1	Tenth Monitoring Round Data Evaluation for Operable Unit 1	Nov 1995	Data loaded into EIMS in IRPIMS-compatible format by contractor
1	Site-Specific Technical Report for Bioslurper Testing at Landfill 3, Operable Unit 1 and Building 870, Hill AFB, Utah	Jan 1996	Not applicable (contains no original analytical data)
1	Final Soil Vapor Extraction and Bioventing Treatability Study Evaluation Report For Operable Unit 1	Jan 1996	Not applicable (contains no original analytical data)
1	SERDP gINT Logs-AATDF/SERDP Treatability Studies	Feb 1996	Data loaded into EIMS in IRPIMS-compatible format by contractor
1	gINT Logs-Ethanol Flushing Treatability Study	Feb 1996	Data loaded into EIMS in IRPIMS-compatible format by contractor
1	Summary Letter Report for Sheet Pile Installation Delivery Order 5057	Feb 1996	Not applicable (contains no original analytical data)
1	Fall 1995 DO 5075 Field Investigation Work Plan for Operable Unit 1	Feb 1996	Not applicable (contains no original analytical data)
1	Technical Review of Operable Unit 1 Groundwater Containment System Hill Air Force Base, Utah	Mar 1996	Not applicable (contains no original analytical data)
1	Report on Soil-Bentonite/Site Liquid Compatibility Hill Air Force Base Operable Unit 1, Salt Lake City, Utah	Mar 1996	Not applicable (contains no original analytical data)

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FOR OPERABLE UNITS
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Operable Unit	Title	Date	EIMS and IRPIMS Status
1	Final Summary Letter Report of Summer/Fall 1995 for Operable Unit 1	Mar 1996	Not applicable (contains no original analytical data)
1	Final Comprehensive Remedial Investigation Report for Operable Unit 1, Hill Air Force Base, Utah	Mar 1996	Not applicable (contains no original analytical data)
1	Draft Proposed Plan Hill Air Force Base Operable Unit 1	Mar 1996	Not applicable (contains no original analytical data)
1	Revised Interim Draft Final Feasibility Study Report for Operable Unit 1	Mar 1996	Not applicable (contains no original analytical data)
1	Draft Phase II Work Plan for the Eight Treatability Studies of Operable Unit 1	Apr 1996	Not applicable (contains no original analytical data)
1	Operable Unit 1 and Operable Unit 8 Field Sampling Plan April 1996 Through March 1997 Delivery Order 5085	May 1996	Not applicable (contains no original analytical data)
1	Operable Unit 1 and Operable Unit 8 Field Sampling Plan April 1996 Through March 1997 Delivery Order 5085	May 1996	Not applicable (contains no original analytical data)
1	Eleventh Monitoring Round Data Evaluation for Operable Unit 1	Jun 1996	Data loaded into EIMS in IRPIMS-compatible format by contractor
1	Well Survey Summary and Recommendation Letter Report	Sept 1996	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
1	EA/BS Update	Sept 1996	Not applicable (contains no original analytical data)
1	Final OU 1 Letter Reports for Data From March 1990 through March 1996	Sept 1996	Not applicable (contains no original analytical data)
1	Final Work Plan for a Demonstration of Remediation by Natural Attenuation for Groundwater at OU 1	Nov 1996	Not applicable (contains no original analytical data)
1	Data Validation Summary Report for the Twelfth Sampling Round At Operable Unit 1 and the Third Sampling Round At Operable Unit 8	Nov 1996	Data loaded into EIMS in IRPIMS-compatible format by contractor
1	Final OU 1 Letter Reports for the Twelfth Sampling Round at OU 1	Nov 1996	Not applicable (contains no original analytical data)
1	South Weber Number 2 October/November Sampling Results Letter Report	Nov 1996	Not applicable (contains no original analytical data)
1	Treatability Studies for Metal Enhanced Reductive Dehalogenation, 12 Oct 96	Feb 1997	Data loaded into EIMS in IRPIMS-compatible format by contractor
1	Final Field Manual for Site Activities at Operable Unit 1: Quality Assurance Project Plan: Health and Safety Plan: and, Field Procedures	Mar 1997	Not applicable (contains no original analytical data)
1	Final Phase 1 Landfill 3 and 4 Work Plan for Operable Unit 1	Mar 1997	Not applicable (contains no original analytical data)
1	In-Situ Cosolvent Flushing for Enhanced Solubilization of a Complex NAPL: Comprehensive Field-Scale Evaluation	May 1997	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
1	Final Phase 1 Groundwater Pre-Design Data Collection Work Plan for Operable Unit 1	May 1997	Not applicable (contains no original analytical data)
1	Data Evaluation Summary Report for Thirteenth Sampling Round at Operable Unit 1 at Hill Air Force Base, Utah	May 1997	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
1	Final Phase 2 Landfill 3 and 4 Work Plan for Operable Unit 1	Jun 1997	Not applicable (contains no original analytical data)

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Operable Unit	Title	Date	EIMS and IRPIMS Status
1	Final Operable Unit 1 Work Plan for Statistical Evaluation of Baseline Concentrations	Jun 1997	Not applicable (contains no original analytical data)
1	Final Work Plan for Demonstration of Bioventing of Non-Petroleum Hydrocarbon Contamination at Hill Air Force Base, UT	Jun 1997	Not applicable (contains no original analytical data)
1	Draft-Final Report Field Evaluation of Cosolvent-Enhanced In-Situ Remediation	Jul 1997	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
1	Final Environmental Baseline Survey for Operable Unit 1	Jul 1997	Not applicable (contains no original analytical data)
1	Environmental Baseline Survey for The Hill Field Elementary School Outdoor Learning Center	Jul 1997	Not applicable (contains no original analytical data)
1	Data Evaluation Summary Report for Fourteenth Sampling Round at Operable Unit 1 at Hill Air Force Base, Utah	Aug 1997	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
1	Final Phase 2 Groundwater Pre-Design Data Collection Work Plan for Operable Unit 1	Sep 1997	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
1	Aqua Track Survey HAFB OU 1 Results Obtained from energizing OU1-652 and the MAMS East Fence	Nov 1997	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
1	AATDF Final Report: Laboratory and Field Evaluation of Single-Phase Microemulsion (SPME) for Enhanced In-Situ Remediation of Contaminated	Nov 1997	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
1	Data Evaluation Summary Report for Fifteenth Sampling Round at Operable Unit 1 at Hill Air Force Base, Utah	Nov 1997	Date of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
1	Demonstration of Steam Injection as and Enhanced Source Removal Technology for Aquifer Restoration (OU 1) Applied Research Associates	Dec 1997	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
1	Final Report Demonstration of Bioventing for Remediation of Chlorinated Solvent Contamination at Hill AFB, Ogden UT, Data Package, Vol II	Jan 1998	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
1	Final Report Demonstration of Bioventing for Remediation of Chlorinated Solvent Contamination at Hill AFB, Ogden, UT, Vol 1	Jan 1998	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
1	Feasibility Study for Operable Unit 1	Jan 1998	Not applicable (contains no original analytical data)
1	Proposed Plan for Operable Unit 1	Jan 1998	Not applicable (contains no original analytical data)
1	Final South Weber No. 2 Monitoring Well Installation Work Plan for Operable Unit 1	Mar 1998	Not applicable (contains no original analytical data)
1	Data Evaluation Summary report for Sixteenth Sampling Round at operable Unit 1	Mar 1998	Date of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
1	Record of Decision and Responsiveness Summary for Operable Unit 1	Sept 1998	Date of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
1	Analytical Data Report for the Seventeenth Groundwater Sampling Round at OU 1	Mar 1999	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
1	Analytical Data Validation Summary Report for OU 1 Investigations in 1997 and 1998	Mar 1999	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
1	Landfill 3 and 4 Summary Investigation Report	Mar 1999	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
1	Analytical Data Validation Report for the 18 th Groundwater Sampling Round at OU 1	Apr 1999	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor

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Operable Unit	Title	Date	EIMS and IRPIMS Status
1	OU 1 Pre-Design Summary Investigation Report Volumes 1 and 2	Aug 1999	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
1	Aqua Track Survey Hill AFB OU 1 Energizing from OU1-304, Survey from Profiles over Landfill 3 and North Arm of Landfill 4; Energizing from OU1-303	Not available	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
1	Aqua Track Survey HAFB OU 1 – Results Obtained from Energizing Seeps on the East and North Sides of Landfill 4, Data for Seeps OU 1- 303, 304, 305	Not available	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
1	Analytical Data Validation Report for the Spring 1999 Operable Unit 1 Spring, Seep, and Surface Water Sampling Round	Sep-1999	Not applicable (contains no original analytical data)
1	Analytical Data Validation Report for the Spring 1999 Operable Unit 1 Spring, Seep, and Surface Water Sampling Round	Nov-1999	Data entered into EIMS in IRPIMS-compatible format by contractor
1	Remedial Action Work Plan Operable Unit 1	Nov-1999	EIMS/IRPIMS status unknown
1	Remedial Design Report and Work Plan Operable Unit 1	Feb-2000	Not applicable (contains no original analytical data)
1	Summer 1999 Operable Unit 1 Groundwater Monitoring Well Sampling Round	Feb-2000	Not applicable (contains no original analytical data)
1	Analytical Data Validation report for the Fall 1999 Operable Unit 1 Groundwater Monitoring Well Sampling Round	Feb-2000	EIMS/IRPIMS status unknown
1	Operable Unit 1 Monitoring Point Closure Report	Feb-2000	Data entered into into EIMS in IRPIMS-compatible format by contractor
1	Operable Unit 1 Response to Comments Volume 1 of 2	Mar-2000	Not applicable (contains no original analytical data)
1	Remediation by Natural Attenuation Treatability Study for Operable Unit 1	May-2000	EIMS/IRPIMS status unknown
1,3,4	Analytical Data Validation Report for the HAFB Landfills 1,3 and 4 Gamma Emitting Radionuclide Groundwater Sampling Round	Feb-2000	EIMS/IRPIMS status unknown
2	Quality Assurance Project Plan	May 1988	Not applicable (contains no original analytical data)
2	Health and Safety Plan	May 1988	Not applicable (contains no original analytical data)
2	Remedial Investigation/Feasibility Work Plan	May 1988	Not applicable (contains no original analytical data)
2	Informal Technical Information Report for Soil and Gas Survey Conducted along Perimeter Road and Spoils Area, Hill AFB, Utah	Feb 1989	Data not entered into IRPIMS-compatible format due to poor data quality
2	Draft Lithologic Logs for Chemical Disposal Pit 3 Hill AFB Ut 1, 11	Sep 1989	Data not entered into IRPIMS-compatible format due to poor data quality
2	Draft Lithologic Logs for Chemical Disposal Pit 3 Hill AFB, UT 1, II	Sep 1989	Data not entered into IRPIMS-compatible format due to poor data quality
2	OU 2-5 Installation Restoration Program Final Conceptual Design Report Source Recovery and Groundwater Pre-treatment System at Operable 2	Jun 1990	Not applicable (contains no original analytical data)
2	Draft Site Characterization Summary for Operable Unit 2 (four volumes), Hill AFB, Utah	Aug 1990	Data not entered into IRPIMS-compatible format due to poor data quality
2	Final Report Site Evaluation Report for Perimeter Road and the Spoils Area, Hill AFB, Utah	Aug 1990	Data not entered into IRPIMS format due to poor data quality

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Operable Unit	Title	Date	EIMS and IRPIMS Status
2	Source Recovery System at Operable Unit 2 Design Analysis Report	Nov 1990	Not applicable (contains no original analytical data)
2	Response to US EPA and Utah Department of Health Comments on First Draft of Site Characterization Summary	Feb 1991	Not applicable (contains no original analytical data)
2	Final Focused Feasibility Study	Feb 1991	Not applicable (contains no original analytical data)
2	Source Removal System at OU 2 Construction Specs	Apr 1991	Not applicable (contains no original analytical data)
2	Technical Memorandum Identification of Chemicals of Potential Concern at Operable Unit 2	May 1991	Not applicable (contains no original analytical data)
2	Technical Memorandum Exposure Assessment at Operable Unit 2	May 1991	Not applicable (contains no original analytical data)
2	OU2-13 Final Decision Document for Perimeter Road, Site SS21, Hill AFB, UT	Jun 1991	Not applicable (contains no original analytical data)
2	OU 2-14 Final Record of Decision for Interim Action at Operable Unit 2	Aug 1991	Not applicable (contains no original analytical data)
2	Data presentation and QA/QC Evaluation for Soil Samples Collected at Operable Unit 2 (two volumes)	Oct 1991	Data loaded into EIMS in IRPIMS-compatible format by contractor
2	Data presentation and QA/QC Evaluation for Surface Water Samples Collected at Operable Unit 2	Nov 1991	Data loaded into EIMS in IRPIMS-compatible format by contractor
2	Data presentation and QA/QC Evaluation for Ground-Water Samples Collected at Operable Unit 2 (four volumes)	Nov 1991	Data loaded into EIMS in IRPIMS-compatible format by contractor
2	Draft Assembled Alternatives Screening Memorandum for Operable unit 2 Site WP07	Mar 92	Not applicable (contains no original analytical data)
2	Baseline Risk Assessment	Mar 1992	Not applicable (contains no original analytical data)
2	Draft Detailed Analysis of Alternatives Memorandum for Operable Unit 2 Sites WP07, SS21	May 1992	Not applicable (contains no original analytical data)
2	100% Design Industrial Waste Treatment Plant Modifications Construction Specifications	Jun 1992	Not applicable (contains no original analytical data)
2	Remedial Investigation for Operable Unit 2	July 1992	Data entered into EIMS in IRPIMS-compatible format by contractor
2	Draft Final Addendum to the Work Plan for Operable Unit 2 Sites WP07, SS21	Aug 1992	Not applicable (contains no original analytical data)
2	Research Report Nonparametric Stratigraphic Interpretation for Drill Log Data	Oct 1992	Not applicable (contains no original analytical data)
2	Final Work Plan for the Surfactant Treatability Study for OU 2	Nov 1992	Not applicable (contains no original analytical data)
2	Draft Evaluation of Treatment System Alternatives for the OU 2 Off-Base Seeps and Springs	Nov 1992	Not applicable (contains no original analytical data)
2	Final Surfactant Study Work Plan Assessment for Operable Unit 2	Mar 1993	Not applicable (contains no original analytical data)
2	Final Feasibility Study Report for Operable Unit 2 Sites WP07, SS21: Volume 1 of 2 Report	Apr 1993	Not applicable (contains no original analytical data)
2	Final Feasibility Study Report for Operable Unit 2 Sites WP07, SS21: Volume 2 of 2 – Appendicies	Apr 1993	Not applicable (contains no original analytical data)
2	Final Report Groundwater Sampling May 93- Feb 95 Vol 1 of 2	May 1993	Data entered into EIMS in IRPIMS-compatible format by contractor
2	Final Revised Work Plan for the Surfactant Treatability Study for Operable Unit 2	Aug 1993	Not applicable (contains no original analytical data)

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Operable Unit	Title	Date	EIMS and IRPIMS Status
2	Final Engineering Evaluation/Cost Analysis for Operable Unit 2 Sites WP07, SS21 Non-Source Area Seeps and Springs	Aug 1993	Not applicable (contains no original analytical data)
1,2	Sheet Pile Constructability Evaluation Operable Units 1, 2 and 4	Oct 1993	Not applicable (contains no original analytical data)
2	Technical Addendum to the Surfactant Screening/Analytical Development Memorandum for Operable Unit 2	Oct 1993	Not applicable (contains no original analytical data)
2	Final Construction Specifications for Non-Source Area Seeps and Springs Collection and Treatment System Improvements @ OU 2	Nov 1993	Not applicable (contains no original analytical data)
2	Technical Report Interpretation of Drilling Log Data: DLOG3D-A Probabilistic Tool for Analyzing Soil Variability	Nov 1993	Not applicable (contains no original analytical data)
2	OU 2 Property Owners Data Packages for August 1993 Groundwater Sampling Event	Nov 1993	Data entered into EIMS in IRPIMS-compatible format by contractor
2	OU 2: Addendum to the Feasibility Study for OU 2	Feb 1994	Not applicable (contains no original analytical data)
2	OU 2 Property Owners Data Packages for November 1993 Groundwater Sampling Event	Feb 1994	Data entered into EIMS in IRPIMS-compatible format by contractor
2	Final Results of the Surfactant Treatability Study for Operable Unit 2	Feb 1994	Data entered into EIMS in IRPIMS-compatible format by contractor
2	Final Work Plan for the DNAPL/Aquifer Pumping Tests at Operable Unit 2	Mar 1994	Not applicable (contains no original analytical data)
2	Project Work Plan Operable Unit 2 Well Replacement and Installation	Apr 1994	Not applicable (contains no original analytical data)
2	OU 2 Property Owners Data Packages for February 1994 Groundwater Sampling Event	Apr 1994	Data entered into EIMS in IRPIMS-compatible format by contractor
2	Addendum to the Remedial Investigation Report for Operable Unit 2, 1993	Apr 1994	Data entered into EIMS in IRPIMS-compatible format by contractor
2	Addendum to the Feasibility Report for Operable Unit 2, 1993	Apr 1994	Data entered into EIMS in IRPIMS-compatible format by contractor
2	Proposed Plan for Operable Unit 2, 1994	Apr 1994	Not applicable (contains no original analytical data)
2	Revised Draft In Situ Steam Enhanced Recovery Process Innovative Technology Evaluation Report	May 1994	Not applicable (contains no original analytical data)
2	Quality Assurance Project Plan Operable Unit 2 Groundwater Sampling	Jun 1994	Not applicable (contains no original analytical data)
2	Work Plan for Site Demonstration of Praxis Environmental Technologies, Inc. Steam Injection Vacuum Extraction Process Phase 1	Jul 1994	Not applicable (contains no original analytical data)
2	Final Aquifer Data Evaluation Report.	Aug 1994	Data entered into EIMS in IRPIMS-compatible format by contractor
2	Technical Memorandum OU 2, Well Replacement and Installation.	Aug 1994	Not applicable (contains no original analytical data)
2	OU 2 Property Owners Data Packages for the May 1994 Groundwater Sampling Event	Aug 1994	Data entered into EIMS in IRPIMS-compatible format by contractor
2	US EPA Site Program Pre-Demonstration Site Characterization Sampling and Analysis Work Plan	Sep 1994	Not applicable (contains no original analytical data)
2	OU 2 Property Owners Data Packages for the August 1994 Groundwater Sampling Event	Oct 1994	Data entered into EIMS in IRPIMS-compatible format by contractor

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Operable Unit	Title	Date	EIMS and IRPIMS Status
2	Final Geophysical Electrical Resistance Mapping Report Operable Unit 2	Nov 1994	Data entered into EIMS in IRPIMS-compatible format by contractor
2	OU 2 Property Owners Data Packages for the November 1994 Groundwater Sampling Event	Jan 1995	Data entered into EIMS in IRPIMS-compatible format by contractor
2	Final Operating Manual Source Recovery System Interim Remedial Action OU 2	Feb 1995	Not applicable (contains no original analytical data)
2	Final Aquifer Pumping Test Report/DNAPL Recovery Optimization Source Recovery System Interim Remedial Action, OU 2	Feb 1995	Data entered into EIMS in IRPIMS-compatible format by contractor
2	Final System Evaluation Report SRS Commissioning, Startup, and Initial Operation Remedial Action, OU 2	Feb 1995	Not applicable (contains no original analytical data)
2	OU 2 Ground Water Sampling Summary May 1993 through February 1995	Feb 1995	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	Final US EPA Site Program Pre-Demonstration Report for Praxis In Situ Thermally Enhanced Extraction Technology	Apr 1995	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	DLOG3D Application at Operable Unit 2 Hill Air Force Base	May 1995	Not applicable (contains no original analytical data)
1, 2	A Cultural Resources Assessment of Hill Air Force Base Operable Units 1, 2, and 4, in South Weber, Utah	Jun 1995	Not applicable (contains no original analytical data)
2	Final Environmental Assessment for OU 2 (IRP Sites, WP07, SS21) Environmental Baseline Survey and Finding of No Significant IMPACT	Jun 1995	Not applicable (contains no original analytical data)
2	OU 2 Property Owners Data Packages for the February 1995 Groundwater Sampling Event	Jun 1995	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	Final Canal Lining Effectiveness Evaluation Operable Unit 2	Jun 1995	Not applicable (contains no original analytical data)
2	Comprehensive Remedial Investigation Report for Operable Unit 1	Jun 1995	Data loaded into EIMS in IRPIMS-compatible format by contractor
2	Photolytic Destruction Demonstration Final Report	Sep 1995	Data loaded into EIMS in IRPIMS-compatible format by contractor
2	Final 3-Mile Pipeline Design Options Report	Oct 1995	Not applicable (contains no original analytical data)
2	OU 2 Property Owners Data Packages for the August 1995 Groundwater Sampling Event	Nov 1995	Data loaded into EIMS in IRPIMS-compatible format by contractor
2	Final Report Groundwater Sampling May 93-Feb 95	Dec 1995	Data loaded into EIMS in IRPIMS-compatible format by contractor
2	Phase I Work Plan Demonstration of Surfactant-Enhanced Aquifer Remediation of DNAPLs at Hill Air Force Base	Mar 1996	Not applicable (contains no original analytical data)
2	Remedial Action Work Plan Appendix A Technical Memorandum for Construct Schedules A & B	Mar 1996	Not applicable (contains no original analytical data)
2	OU 2 Ground Water Sampling Summary April 1995 through March 1996	Mar 1996	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	Final Summary Report OU 2 Groundwater Sampling (Apr 95-Mar 96)	Apr 1996	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	Health and Safety Plan for Demonstration of Surfactant-Enhanced Aquifer Remediation of DNAPLs at Hill Air Force Base	Apr 1996	Not applicable (contains no original analytical data)

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Operable Unit	Title	Date	EIMS and IRPIMS Status
2	Phase 1 Sampling and Analysis Plan: Quality Assurance Project Plan: Field Sampling Data. Demonstration of Surfactant-Enhanced Aquifer	Apr 1996	Not applicable (contains no original analytical data)
2	Technical Review of Operable Unit 2 Hill Air Force Base, Utah	May 1996	Not applicable (contains no original analytical data)
2	Technical Specifications Operable Unit 2 Remedial Design, Containment Wall, North Interceptor Trench, Treatment Plant	May 1996	Not applicable (contains no original analytical data)
2	Phase 2 Work Plan for Hill Air Force Base SEAR Demonstration	Jun 1996	Not applicable (contains no original analytical data)
2	Draft Final Work Plan Demonstration of In Situ Aquifer Restoration from Dense Solvent Contamination by Enhanced Thermal Extraction,	Jun 1996	Not applicable (contains no original analytical data)
2	Phase II Work Plan for Hill Air Force Base SEAR Demonstration	Jun 1996	Not applicable (contains no original analytical data)
2	Phase 2 Sampling and Analysis Plan: Quality Assurance Project Plan: Field Sampling Plan. Demonstration of Surfactant-Enhanced Aquifer	Jul 1996	Not applicable (contains no original analytical data)
2	Revision 1 Site Health and Safety Plan for Source Removal System Operable Unit 2	Aug 1996	Not applicable (contains no original analytical data)
2	Record of Decision and Responsiveness Summary for Operable Unit 2	Sept 1996	Not applicable (contains no original analytical data)
2	Phase 2a Work Plan-Initial Field Work AATDF Surfactant/Foam Process for Aquifer Remediation	Oct 1996	Not applicable (contains no original analytical data)
2	OU 2 September 1996 Sampling Event Summary Tables and Figures	Dec 1996	Not applicable (contains no original analytical data)
2	Monitoring DNAPL Pumping Using Integrated Geophysical Techniques	Jan 1997	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	Phase IIb Work Plan Work AATDF Surfactant/Foam Process for Aquifer Remediation	Mar 1997	Not applicable (contains no original analytical data)
2	Final Cost and Performance Report Source Recovery System Operable Unit 2	Mar 1997	Not applicable (contains no original analytical data)
2	Final Health and Safety Plan Demonstration of In Situ Aquifer Restoration from Dense Solvent Contamination by Thermal Enhanced Extraction	Apr 1997	Not applicable (contains no original analytical data)
2	Final Work Plan for a Demonstration of Remediation by Natural Attenuation for Groundwater at OU 2	May 1997	Not applicable (contains no original analytical data)
2	OU 2 March 1997 Sampling Event Summary Tables and Figures	May 1997	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	OU 2 Property Owners Data Packages for the March 1997 Groundwater Sampling Event	May 1997	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	Final UCS O&M and Performance Verification Plan Operable Unit 2	Jul 1997	Not applicable (contains no original analytical data)
2	Quality Assurance Project Plan for Superfund Innovative Technology Evaluation Praxis Environmental Technology, Inc. Thermally Enhanced	Jul 1997	Not applicable (contains no original analytical data)
2	Project Work Plan Operable Unit 2 Phase 3 Pre-Design Field Investigation	Oct 1997	Not applicable (contains no original analytical data)
2	AATDF Surfactant/Foam Process for Aquifer Remediation	Nov 1997	Not applicable (contains no original analytical data)

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Operable Unit	Title	Date	EIMS and IRPIMS Status
2	Report Repository 1997 Operation and Performance Reports Source Recovery System Operable Unit 2	Dec 1997	Not applicable (contains no original analytical data)
2	Final Technical Memorandum Operable Unit 2 Remedial Design Investigation, Monitoring Wells U2-086 and U2-087	Dec 1997	Not applicable (contains no original analytical data)
2	OU 2 Property Owners Data Packages for the September 1997 Groundwater Sampling Event	Dec 1997	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	Final Phase I Site Characterization Activities Report for the Dense Nonaqueous Phase Liquid (DNAPL) Source Delineation Project	Jan 1998	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	Design Data Colleciton Work Plan-Cometabolic Bioventing Field Test Operable Unit 2, Hill AFB, Utah	Jan 1998	Not applicable (contains no original analytical data)
2	Final Demonstration of Surfactant-Enhanced Aquifer Remediation of Chlorinated Solvent DNAPL at Operable Unit 2, Hill AFB, Utah	Jan 1998	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	Final Phase II PITT Well Field Design Report for the Dense Nonaqueous Phase Liquid (DNAPL) Source Delineation Project, Operable Unit 2	Jan 1998	Not applicable (contains no original analytical data)
2	Draft Phase I Site Characterization Activities Report Addendum for the Dense Nonaqueous Phase Liquid (DNAPL) Source Delineation Project	Feb 1998	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	Monitor Well Inventory Photo Log Operable Unit 2	Feb 1998	Not applicable (contains no original analytical data)
2	Final Dense Nonaqueous Phase Liquid (DNAPL) Source Delineation Work Plan, Operable Unit 2	Feb 1998	Not applicable (contains no original analytical data)
2	Monitor Well Inventory Photo Log Operable Unit 2	Feb 1998	Not applicable (contains no original analytical data)
2	Dec 1997 Final Remedial Action Work Plan Sched. A & B Constructions	Mar 1998	Not applicable (contains no original analytical data)
2	Complex Resistivity Geophysics Demonstration, Final Report	Mar 1998	Not applicable (contains no original analytical data)
2	Dec '97 Final Remedial Design Investigation Monitoring Wells U2-086 & U2-087	Mar 1998	Not applicable (contains no original analytical data)
2	OU 2 Property Owners Data Packages for the March 1998 Groundwater Sampling Event	Mar 1998	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	Final Summary Report Operable Unit 2 Groundwater Sampling (April 1996 – March 1997)	Jul 1998	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	Final Phase IV PITT Model and Design Report for the Dense Nonaqueous Phase Liquid (DNAPL) Source Delineation Project, OU 2	Jul 1998	Not applicable (contains no original analytical data)
2	Griffith Pool Well Field at OU 2 Construction Specifications	Sep 1998	Not applicable (contains no original analytical data)
2	Draft Source Recovery System Modification Report Operable Unit 2	Oct 1998	Not applicable (contains no original analytical data)
2	Report Repository 1998 Operation and Performance Source Recovery System Operable Unit 2	Dec 1998	Not applicable (contains no original analytical data)
2	OU 2 Property Owners Data Packages for the September 1998 Groundwater Sampling Event	Dec 1998	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	Site Safety and Health Plan Radian HAFB Griffith Pool Well Field	Dec 1998	Not applicable (contains no original analytical data)
2	Final Work Plan Treatability Study for Remediation of Griffith Pool	Dec 1998	Not applicable (contains no original analytical data)

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HILL AFB TECHNICAL DOCUMENTS/DATA LOADING SUMMARY
FOR OPERABLE UNITS
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Operable Unit	Title	Date	EIMS and IRPIMS Status
2	OU 2 Property Owners Data Packages for the September 1998 Groundwater Sampling Event	Dec 1998	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	Work Plan for Environmental Fate of TCE at Operable Unit 2 and Operable Unit 4	Jan 1999	Not applicable (contains no original analytical data)
2	Technical Memorandum Phase III Field Investigation for Pre-Design and Plume Characterization Operable Unit 2	Jan 1999	Not applicable (contains no original analytical data)
2	December 1998 Sampling Event Summary for Operable Unit 2	Jan 1999	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	Construction Report Schedule B Remedial Action North Interceptor Trench and Air Stripper Treatment Plant Operable Unit 2	Feb 1999	Not applicable (contains no original analytical data)
2	Construction Report Spring U2-326 Ground Water Extraction Trench Remedial Action	Apr 1999	Not applicable (contains no original analytical data)
2	Construction Report: Spring U2-326 Ground Water Extraction Trench Remedial Action	Apr 1999	Not applicable (contains no original analytical data)
2	Final Revision 3 Site Health and Safety Plan OU 2	May 1999	Not applicable (contains no original analytical data)
2	Dense Nonaqueous Phase Liquid (DNAPL) Source Delineation Project Final Report Operable Unit 2	Sep 1999	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	Final Summary Report Operable Unit 2 Groundwater Sampling (June1998-March 1999)	Jun 1999	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	Long-term Groundwater Monitoring Project: Analytical Data Validation Report for the Summer 1999 Operable Unit 2 Groundwater Monitoring Well Sampling Round	Sep 1999	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	Technical Memorandum :Phase III Field Investigation for Pre-Design and Plume Characterization Operable Unit 2	Jan 1999	Not applicable (contains no original analytical data)
2	Final Report : DNAPL Extraction Report Griffith Pool Operable Unit 2	Sep 1999	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
2	Final Report : Source Recovery System Modification Report Operable Unit 2	Jun 1999	Not applicable (contains no original analytical data)
2	Operation & Maintenance Manual Non-Source Area Seeps and Springs Collection and Treatment System Improvements Operable Unit 2	Not Available	Not applicable (contains no original analytical data)
2	DNAPL Extraction Report Griffith Pool Operable Unit 2	Sep-1999	EIMS/IRPIMS status unknown
2	Supplemental Work Plan, Griffith Pool Partitioning Interwell Tracer Test, OU2	Oct-1999	Not applicable (contains no original analytical data)
2	Analytical Data Validation Report for the Summer 1999 Operable Unit 2 Groundwater Monitoring Well Sampling Round	Jan-2000	EIMS/IRPIMS status unknown
2	Analytical Data Validation Report for the Fall 1999 Operable Unit 2 Groundwater Monitoring Well Sampling Round	Feb-2000	EIMS/IRPIMS status unknown
2	Remedial Action Report Operable Unit 2 North Inceptor Trench, Spring U2-326 Inceptor Trench, Containment Wall, and Air Stripper Treatment Plant	Mar-2000	EIMS/IRPIMS status unknown
3	Draft Final Report Hill AFB IRP, Phase IIA Preliminary Survey Report	Sept 1982	Data not entered into EMIS or IRPIMS-compatible format

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HILL AFB TECHNICAL DOCUMENTS/DATA LOADING SUMMARY
FOR OPERABLE UNITS
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Operable Unit	Title	Date	EIMS and IRPIMS Status
3	Final Report, Installation Restoration Program Phase IIB IRP Survey	Sept 1984	Data not entered into EMIS or IRPIMS-compatible format
3	Master Quality Assurance Plan	Apr 1986	Not applicable (contains no original analytical data)
3	Layton Plume Work Plan	July 1987	Not applicable (contains no original analytical data)
3	Installation Restoration Program Phase II – Confirmation Quantification Stage 2, Vol 1-Report & Appendices A & B	Nov 1987	Not applicable (contains no original analytical data)
3	Site Inspection Report, Remedial Investigation and Feasibility Study (RI/FS) of the Refueling Vehicle Maintenance Facility and Berman Pond, Hill AFB, Utah	Jan 1988	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
3	Site Inspection Report, for the Remedial Investigation and Feasibility Study (RI/FS) of the Sodium Hydroxide Tank Site and the IWTP Sludge Drying Beds, Hill AFB, Utah	Feb 1988	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
3	Installation Restoration Program Site Inspection Report, for the Remedial Investigation and Feasibility Study (RI/FS) of the Sodium Hydroxide Tank Site	Feb 1988	Not applicable (contains no original analytical data)
3	Preliminary Assessment Storm Water Retention Pond 3	Jun 1988	Not applicable (contains no original analytical data)
3	Remedial Investigation Work Plans for the Remedial Investigation Feasibility Study of the Sodium Hydroxide Tank Site and the IWTP Sludge Drying Beds	Jun 1988	Not applicable (contains no original analytical data)
3	Draft Geophysical Investigation Area of Sodium Hydroxide Tank Site and IWTP Sludge Drying Beds, Hill AFB, Utah	Jul 1988	Data has not been loaded into EMIS or IRPIMS-compatible format
3	Work Plan for the Remedial Investigation/Feasibility Study of Berman Pond and the Refueling Vehicle Maintenance Facility Area	Aug 1988	Not applicable (contains no original analytical data)
3	Soil Organic Vapor Survey Report Industrial Waste Treatment Plant Area, Hill AFB, Utah	Oct 1988	Data has not been loaded into EMIS or IRPIMS-compatible format
3	Work Plan for the Site Evaluation at Pond 3	Nov 1988	Not applicable (contains no original analytical data)
3	Summary of Site Characterization Data Collected During 1988, IWTP Area	1989	Data has not been loaded into EMIS or IRPIMS-compatible format
3	Data Compilation Report, RI/FS Berman Pond and Building 514 Area	Mar 1989	Data loaded into EIMS in IRPIMS-compatible format by contractor
3	Layton Ground-Water Investigation, Final Report (two volumes), Hill AFB, Utah	Mar 1989	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
3	Technical Memorandum, Development of Alternatives for RI/FS	May 1989	Not applicable (contains no original analytical data)
3	Technical Memorandum, Baseline Risk Assessment for the RI/FS	Jun 1989	Not applicable (contains no original analytical data)
3	Technical Memorandum Screening of Alternatives for the RI/FS	Jun 1989	Not applicable (contains no original analytical data)
3	Remedial Investigation Report for Operable Unit 3, Internal Draft	July 1989	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
3	Site Characterization for OU 3	Jul 1989	Not applicable (contains no original analytical data)
3	Technical Memorandum; Mathematical Model of Groundwater Flow and Contaminant Transport for Operable Unit 3	Sep 1989	Not applicable (contains no original analytical data)

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HILL AFB TECHNICAL DOCUMENTS/DATA LOADING SUMMARY
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Operable Unit	Title	Date	EIMS and IRPIMS Status
3	Addendum to the Remedial Investigation Work Plans	Dec 1989	Data entered into IRPIMS-compatible format by contractor
3	Technical Memorandum, Mathematical Model of Ground-Water Flow and Contaminant Transport	Dec 1989	Not applicable (contains no original analytical data)
3	Pond 3 Site Evaluation, Final Report (two volumes) Hill AFB, Utah	Oct 1990	Data entered into EIMS in IRPIMS-compatible format by contractor
3	Remedial Investigation Report	Apr 1991	Data entered into EIMS in IRPIMS-compatible format by contractor
3	Focused RI/FS for the Sodium Hydroxide Tank Site	Sept 1991	Data entered into EIMS in IRPIMS-compatible format by contractor
3	Focused RI/FS for the IWTP Sludge Drying Bed	Sept 1991	Data entered into EIMS in IRPIMS-compatible format by contractor
3	Baseline Risk Assessment	Dec 1991	Not applicable (contains no original analytical data)
3	Draft Final Baseline Risk Assessment for Operable Unit 3	Dec 1991	Not applicable (contains no original analytical data)
3	Proposed Plan for a CERCLA/IRP Interim Action at the Sodium Hydroxide Tank Site	Jan 1992	Not applicable (contains no original analytical data)
3	Focused RI/FS for the Sodium Hydroxide Tank Site at Operable Unit 3	Jan 1992	Data entered into EIMS in IRPIMS-compatible format by contractor
3	Remedial Investigation Report for Operable Unit 3, Draft Final	Apr 1992	Data entered into EIMS in IRPIMS-compatible format by contractor
3	Assembled Alternatives Screening Technical Memorandum for Operable Unit 3	Mar 1992	Not applicable (contains no original analytical data)
3	Record of Decision for Interim Action at Operable Unit 3 Site ST04, Hill AFB, UT	Sep 1992	Not applicable (contains no original analytical data)
3	IWTP Investigation at OU 3, Laboratory Data Validation	Sep 1992	Data entered into EIMS in IRPIMS-compatible format by contractor
3	RI/FS Study W.P. Addendum (IRP Sites, ST04, WP05, WP06, ST18, SD23, OT33, SD34)	Nov 1992	Not applicable (contains no original analytical data)
3	IWTP Leak Investigation (IRP Site WP06) (Interim Report)	Dec 1992	Data entered into EIMS in IRPIMS-compatible format by contractor
3	Remedial Investigation/Feasibility Study Work Plan	Feb 1993	Data entered into IRPIMS-compatible format by contractor
3	Site Characterization and Soil Vapor Extraction Treatability Study Work Plan for the Refueling Vehicle Maintenance Facility	Feb 1993	Not applicable (contains no original analytical data)
3	Draft Final Site Characterization and Soil Vapor Extraction Treatability Study Work Plan for the Refueling Vehicle Maintenance Facility	Feb 1993	Not applicable (contains no original analytical data)
3	Draft: Focused RI/FS for the Refueling Vehicle Maintenance Facility at OU 3 (RIP Site St-18)	Mar 1993	Not applicable (contains no original analytical data)
3	Draft Final Focused Remedial Investigation Feasibility Study for the Refueling Vehicle Maintenance Facility (Building 511 and 514) at Operable Unit 3	May 1993	Not applicable (contains no original analytical data)
3	Final Technical Specifications and Design Drawings for Construction of a Pavement Cap at the Sodium Hydroxide Tank Site (Site ST04) Operable Unit 2	Jul 1993	Not applicable (contains no original analytical data)
3	Final Technical Specifications and Design Drawings for Construction of a Pavement Cap at the Sodium Hydroxide Tank Site (Site ST04) Operable Unit 3	Jul 1993	Not applicable (contains no original analytical data)

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HILL AFB TECHNICAL DOCUMENTS/DATA LOADING SUMMARY
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Operable Unit	Title	Date	EIMS and IRPIMS Status
3	Draft Final Report, Installation Restoration Program Phase II Survey	Nov 1993	Data not loaded into EIMS or IRPIMS-compatible format
3	Draft Final Dewatering Treatability Study Work Plan for Berman Pond, Operable Unit 3	Apr 1994	Not applicable (contains no original analytical data)
3	Letter Work Plan for Operable Unit 3	Apr 1994	Not applicable (contains no original analytical data)
3	Draft Final Phase II Remedial Investigation Report for Operable Unit 3	Aug 1994	Data loaded into EIMS in IRPIMS-compatible format by contractor
3	Final Basewide Engineering Evaluation/Cost Analysis for Contaminated Seeps and Springs	Jun 1994	Not applicable (contains no original analytical data)
3	Final Remedial Action Report for the Sodium Hydroxide Tank Site (IRP Site ST04) Hill Air Force Base, Utah Operable Unit 3	Sep 1994	Not applicable (contains no original analytical data)
3	Final Remedial Investigation/Baseline Risk Assessment Addendum for Operable Unit 3	Mar 1995	Data loaded into EIMS in IRPIMS-compatible format by contractor
3	Final Feasibility Study for Operable Unit 3	Mar 1995	Data entered into EIMS in IRPIMS-compatible format by contractor
3	Proposed Plan for Operable Unit 3	Mar 1995	Not applicable (contains no original analytical data)
3	Final Quality Control Summary Report for the Phase II Remedial Investigation for Operable Unit 3	Mar 1995	Data entered into EIMS in IRPIMS-compatible format by contractor
3	IWTP Batch Tank Upgrade Soil Sampling Letter Report	Mar 1995	Data entered into EIMS in IRPIMS-compatible format by contractor
3	Final Phase 2 Remedial Investigation Report for Operable Unit 3 (IRP Sites ST04, WP05, WP06, ST18, SD23, OT33, and SD34): Volume 2- Appendices	Mar 1995	Data entered into EIMS in IRPIMS-compatible format by contractor
3	Final Letter Work Plan Addendum to the Dewatering Treatability Study Work Plan for Berman Pond	Jul 1995	Not applicable (contains no original analytical data)
3	Final letter Work Plan Addendum to the Dewatering Treatability Study Work Plan for Berman Pond	Jul 1995	Not applicable (contains no original analytical data)
3	Draft IWTP Cap Inspection Letter Report	Jul 1995	Not applicable (contains no original analytical data)
3	Record of Decision for Operable Unit 3	Oct 1995	Not applicable (contains no original analytical data)
3	Well Survey Summary and Recommendation Letter Report	Sept 1996	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
3	100% Technical Specifications - SVE System Remedial Design	Sept 1996	Not applicable (contains no original analytical data)
3	Final Remedial Action Work Plan	Sept 1996	Not applicable (contains no original analytical data)
3	Final Expanded Dewatering Treatability Study - Technical Memorandum for Berman Pond	Dec 1996	Data entered into EIMS in IRPIMS-compatible format by contractor
3	100% Technical Specifications - Cap Remedial Design	Jan 1997	Not applicable (contains no original analytical data)
3	Final Cost Estimate for Berman Pond Cap	Feb 1997	Not applicable (contains no original analytical data)
3	Final Remedial Design Report and Work Plan	Feb 1997	Not applicable (contains no original analytical data)
3	Final Cost Estimate for Berman Pond Cap Operable Unit 3	Feb 1997	Not applicable (contains no original analytical data)
3	Design of Modifications to Existing Storm Water Collection System and Pond No. 3 Containment Study	Apr 1997	Not applicable (contains no original analytical data)

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HILL AFB TECHNICAL DOCUMENTS/DATA LOADING SUMMARY
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Operable Unit	Title	Date	EIMS and IRPIMS Status
3	Final Remedial Action Construction Quality Assurance Plan Operable Unit 3	May 1997	Not applicable (contains no original analytical data)
3	Berman Pond OU 3 Traffic Control Plan	Jul 1997	Not applicable (contains no original analytical data)
3	Final Berman Pond Dewatering System Piezometer Installation Work Plan for Operable Unit 3	Jan 1998	Not applicable (contains no original analytical data)
3	Final Construction Completion Report for OU 3 B-514 SVE System	May 1998	Not applicable (contains no original analytical data)
3	Final Remedial Action Construction Quality Assurance Plan Operable Unit 3	May 1998	Not applicable (contains no original analytical data)
3	Construction Completion Report for Operable unit 3 Building 514 SVE System	May 1998	Not applicable (contains no original analytical data)
3	Annual Inspection of the Berman Pond Asphalt Cap	Aug 1998	Not applicable (contains no original analytical data)
3,4,7	Draft Hill AFB CERCLA Cap System Site Safety and Health Plan	Aug 1998	Not applicable (contains no original analytical data)
3	Annual Inspection of the Sodium Hydroxide Tank Site Cap	Sep 1998	Not applicable (contains no original analytical data)
3	Final Construction Report for Operable Unit 3 Berman Pond Asphalt Cap	Nov 1998	Not applicable (contains no original analytical data)
3	Construction Photo Log for OU 3 B-514 SVE System. Vol I and Vol II	Nov 1998	Not applicable (contains no original analytical data)
3	Final Annual Report for OU 3	Dec 1998	Not applicable (contains no original analytical data)
3	Final Annual Report for Operable Unit 3	Dec 1998	Not applicable (contains no original analytical data)
3	Inspection, Operation, and Maintenance Plan for Hill AFB CERCLA Cap System	May 1999	Not applicable (contains no original analytical data)
3	Final Remedial Action Project Close-Out Report for Operable Unit 3	Apr 1999	Not applicable (contains no original analytical data)
3	Letter Assessing Building 514 SVE System Attainment of Clean-up Goals	Apr 1999	Data of appropriate quality loaded into EIMS in IRPIMS compatible format by contractor
3,4,7	Final Inspection, Operations, and Maintenance Plan for Hill AFB CERCLA Cap Systems	May 1999	Not applicable (contains no original analytical data)
3	Storm Drain System Repair and Concrete Planter Demolition Operable Unit 3 Berman Pond	Oct-1999	Not applicable (contains no original analytical data)
3	Annual Report for Operable Unit 3 Sodium Hydroxide Tank Site and Berman Pond	Nov-1999	Data entered into EIMS in IRPIMS-compatible format by contractor
3	Analytical Data Validation Report for the Fall 1999 Operable Unit 3 Groundwater Monitoring Well Sampling Round	Feb-2000	EIMS/IRPIMS status unknown
3	Analytical Data Validation Report for the Spring 1999 Operable Unit 3 Groundwater Monitoring Well Sampling Round	Feb-2000	EIMS/IRPIMS status unknown

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HILL AFB TECHNICAL DOCUMENTS/DATA LOADING SUMMARY
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Operable Unit	Title	Date	EIMS and IRPIMS Status
4	Remedial Investigation Landfills 1 and 2 Work Plan	May 1988	Data entered into EIMS in IRPIMS-compatible format by contractor
4	Remedial Investigation Landfills 1 and 2 Quality Assurance Plan	May 1988	Not applicable (contains no original analytical data)
4	Remedial Investigation Health and Safety Plan, Landfills 1 and 2	Oct 1989	Not applicable (contains no original analytical data)
4	Technical Memorandum Second Draft Site Characteristics Summary Report, First Phase of Remedial Investigation Operable Unit 4, Landfills 1&2	Jan 1990	Not applicable (contains no original analytical data)
4	Technical Memorandum Development of Alternatives for Operable Unit 4 RI/FS	Jan 1990	Not applicable (contains no original analytical data)
4	Technical Memorandum Screening of Alternatives for Operable Unit 4	Mar 1990	Not applicable (contains no original analytical data)
4	Remedial Investigation Report Landfills 1 & 2 Vol. 2 – Baseline Risk Assessment	Aug 1990	Not applicable (contains no original analytical data)
4	Remedial Investigation Report Operable Unit 4, Landfills 1 and 2: Volume 2 – Baseline Risk Assessment	Aug 1990	Not applicable (contains no original analytical data)
4	Final Draft Vol 1 Report Remedial Investigation Report for OU 4	Sep 1991	Not applicable (contains no original analytical data)
4	Remedial Investigation Report for Operable Unit 4, Vol. 2 Baseline Risk Assessment	Nov 1991	Not applicable (contains no original analytical data)
4	Draft Remedial Action Objectives Technical Memorandum, OU 4	Jan 1992	Not applicable (contains no original analytical data)
4	Technical Memorandum Assembled Alternatives Screening for Operable Unit 4 (IRP Sites LF11, LF12, OT20, OT41)	Feb 1992	Not applicable (contains no original analytical data)
4	Feasibility Study at Operable Unit 4 Scope of Services Task 2.b.1 Records and Remedial Investigation Scoping Review: Data Quality Review: ARAR	Feb 1992	Not applicable (contains no original analytical data)
4	Remedial Investigation Report (Vol. 1)	Jun 1992	Data entered into EIMS in IRPIMS-compatible format by contractor
4	Remedial Investigation Report for Operable Unit 4	Sept 1992	Data entered into EIMS in IRPIMS-compatible format by contractor
4	Baseline Risk Assessment Addendum, Vol. 2, Addendum to RI Report for Operable Unit 4	1993	Not applicable (contains no original analytical data)
4	Addendum to the Final RI Report for Operable Unit 4	Feb 1993	Not applicable (contains no original analytical data)
4	Final Addendum to Remedial Investigation Report for OU 4	Apr 1993	Not applicable (contains no original analytical data)
4	Slope Stability and Horizontal Drain Performance Work Plan for Operable Unit 4	May 1993	Not applicable (contains no original analytical data)
4	Final Addendum to Remedial Investigation Report for Operable Unit 4 Volume 2 – Final Baseline Risk Assessment Addendum	Jul 1993	Not applicable (contains no original analytical data)
4	Private Residence Collection & Analysis of Air Samples as Part of the Hill AFB Environmental Study of OU 4	Aug 1993	Data entered into EIMS in IRPIMS-compatible format by contractor
4	Proposed Plan for Operable Unit 4	Sept 1993	Not applicable (contains no original analytical data)

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Operable Unit	Title	Date	EIMS and IRPIMS Status
4	Feasibility Study Report for Operable Unit 4	Sept 1993	Not applicable (contains no original analytical data)
4	Treatability Study Work Plan for Metal Enhanced Reductive Dehalogenation at Operable Unit 4	Oct 1993	Not applicable (contains no original analytical data)
4	Work Plan for Landfill Cap Pre-Design Data Acquisition	Nov 1993	Not applicable (contains no original analytical data)
4	Final Soil Vapor Extraction Pre-Design Work Plan for OU 4 (IRP Sites FL11, FL12, OT20, OT41, OT42)	Jan 1994	Not applicable (contains no original analytical data)
4	Environmental Assessment for Operable Unit 4	Jan 1994	Not applicable (contains no original analytical data)
4	Environmental Baseline Survey for Operable Unit 4	Jan 1994	Not applicable (contains no original analytical data)
4	Phase I Remedial Design Report for Operable Unit 4	May 1994	Not applicable (contains no original analytical data)
4	Surface Treatment Canister Design Letter Report, Treatability Study for Metal-Enhanced Reductive Dehalogenation, Operable Unit 4	May 1994	Not applicable (contains no original analytical data)
4	Record of Decision for Operable Unit 4	Jun 1994	Not applicable (contains no original analytical data)
4	Remedial Design Work Plan for Operable Unit 4	Jun 1994	Not applicable (contains no original analytical data)
4	Performance Monitoring Report No. 1 Surface Treatment Canister	Aug 1994	Data of appropriate quality loaded into EIMS in IRPIMS compatible format by contractor
4	Landfill 1 Delineation Report Operable Unit 4 (IRP Site LF11)	Sep 1994	Data of appropriate quality loaded into EIMS in IRPIMS compatible format by contractor
4	Performance Monitoring Report No. 2 Surface Treatment Canister	Dec 1994	Data of appropriate quality loaded into EIMS in IRPIMS compatible format by contractor
4	Soil Vapor Extraction Re-Design Work Plan for Operable Unit 4	Jan 1995	Not applicable (contains no original analytical data)
4	Final Remedial Design Work Plan for Operable Unit 4 (IRP Sites LF11, LF12, OT20, OT41, OT42)	Feb 1995	Not applicable (contains no original analytical data)
4	Drawings for the Construction of the Operable Unit 4 Landfill Cap	Feb 1995	Not applicable (contains no original analytical data)
4	Evaluation of Surface Treatment Canister Performance, Operable Unit 4, Hill Air Force Base, Utah	Feb 1995	Data of appropriate quality loaded into EIMS in IRPIMS compatible format by contractor
4	Technical Memorandum in Support of Proposed Explanation of Significant Differences for OU 4 Landfill Contents Remedy	Mar 1995	Not applicable (contains no original analytical data)
4	Proposed Explanation of Significant Differences, Landfill Contents Remedy	Mar 1995	Not applicable (contains no original analytical data)
4	Phase I Remedial Design Technical Specifications Operable Unit 4	May 1995	Not applicable (contains no original analytical data)
4	Phase I Remedial Design Remedial Action Work Plan OU 4	May 1995	Not applicable (contains no original analytical data)
4	Air Stripper Evaluation Report for Operable Unit 4	May 1995	Data of appropriate quality being loaded into IRPIMS-compatible format by contractor
4	Horizontal Drain Performance Evaluation and Hydrogeology Summary Report	May 1995	Data entered into EIMS in IRPIMS-compatible format by contractor
4	Final Treatability Study of Metal-Enhanced Reductive Dehalogenation Operable Unit 4	Aug 1995	Data entered into EIMS in IRPIMS-compatible format by contractor
4	Final Cost Benefit Analysis for Groundwater Containment and Treatment for Operable Unit 4 (IRP Sites LF11, LF12, OT20, OT41, OT42)	Aug 1995	Not applicable (contains no original analytical data)

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Operable Unit	Title	Date	EIMS and IRPIMS Status
4	Final Construction Quality Assurance Plan Operable Unit 4 Phase 1 Remedial Action	Aug 1995	Not applicable (contains no original analytical data)
4	Maps, Groundwater Treatment System Upgrade	Nov 1995	Not applicable (contains no original analytical data)
4	Field Sampling Plan for Defining the Extent of the Off-Base Trichloroethene Plume	Mar 1996	Not applicable (contains no original analytical data)
4	Final Remedial Action Work Plan Horizontal Drain Upgrades for OU 4	Apr 1996	Not applicable (contains no original analytical data)
4	Final Submittal Technical Specifications Horizontal Drain Upgrades for OU 4	Apr 1996	Not applicable (contains no original analytical data)
4	100% Design Drawings Horizontal Drain Upgrade OU 4	Apr 1996	Not applicable (contains no original analytical data)
4	Groundwater Monitoring in the Area of Operable Unit 4, Hill Air Force Base, Utah, 1991 – 1994: Volume 1	Jul 1996	Data entered into EIMS in IRPIMS-compatible format by contractor
4	Final Revised Conceptual Model	Aug 1996	Data entered into EIMS in IRPIMS-compatible format by contractor
4	Well Survey Summary and Recommendation Letter Report	Sept 1996	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
4	Final Construction Quality Assurance Plan OU 4 Phase 2 Remedial Action	Sep 1996	Not applicable (contains no original analytical data)
4	Final Construction Report OU 4 Phase 1 Remedial Action Landfill Cap and Drain System	Sep 1996	Not applicable (contains no original analytical data)
4	Groundwater Monitoring in the Area of Operable Unit 4, Hill Air Force Base, Utah, 1994 - 1995: Volume 2	Oct 1996	Data entered into EIMS in IRPIMS-compatible format by contractor
4	Supplemental Information for OU 4 Field Investigations Conducted Under DO 5026	Nov 1996	Not applicable (contains no original analytical data)
4	Numerical Modeling and Remediation System Recommendations Report	Nov 1996	Data entered into EIMS in IRPIMS-compatible format by contractor
4	Inspection of Phase I Construction	Dec 1996	Not applicable (contains no original analytical data)
4	Field Sampling Plan Operable Unit 4 Phase 2 Pre-Design Field Investigation	Feb 1997	Not applicable (contains no original analytical data)
4	Interim O&M Manual for Landfill Cap	Feb 1997	Not applicable (contains no original analytical data)
4	Landfill Cap Inspection Report	Feb 1997	Not applicable (contains no original analytical data)
4	Groundwater Monitoring in the Area of Operable Unit 4, Hill Air Force Base, Utah, 1995 – 1996: Volume 3	Mar 1997	Data entered into EIMS in IRPIMS-compatible format by contractor
4	Final Work Plan for a Demonstration of Remediation by Natural Attenuation for Groundwater at OU 4	May 1997	Data entered into EIMS in IRPIMS-compatible format by contractor
4	Seeps and Springs Monitoring Work Plan Addendum	May 1997	Not applicable (contains no original analytical data)
4	Technical Memorandum, Interim Submittal Operable Unit 4, Phase III Pre-Design Field Investigation for Groundwater Extraction, Drainlines B&D	Jun 1997	Data entered into EIMS in IRPIMS-compatible format by contractor
4	Operation and Maintenance Manual for Horizontal Drain Upgrades	Jun 1997	Data entered into EIMS in IRPIMS-compatible format by contractor
4	Quarterly Operations Monitoring and Optimization Report	June 1997	Data of appropriate quality entered into EIMS in IRPIMS-compatible format by contractor
4	Appendix F Quality-Control Checklist for Groundwater Quality Analyses Jan 1993 – Sep 1996 Groundwater Monitoring in the Area of OU 4 HAFB UT 1995	Jul 1997	Not applicable (contains no original analytical data)

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Operable Unit	Title	Date	EIMS and IRPIMS Status
4	Operable Unit 4 Trend Analysis Report	Jul 1997	Not applicable (contains no original analytical data)
4	Final (Revised) Construction Report OU 4 Phase I Remedial action Landfill Cap and Drain System	Aug 1997	Not applicable (contains no original analytical data)
4	Operation and Maintenance Manual for Horizontal Drain Upgrades	Aug 1997	Not applicable (contains no original analytical data)
4	Final Environmental Baseline Survey of Six Off-Base Properties at Operable Unit 4	Aug 1997	Not applicable (contains no original analytical data)
4	Final Environmental Baseline Survey of Six Off-Base Properties at Operable Unit 4	Aug 1997	Not applicable (contains no original analytical data)
4	Final OU 4 Pre-Design Field Investigation for the Groundwater Extraction Trench System Technical Memorandum	Aug 1997	Data of appropriate quality entered into EIMS in IRPIMS-compatible format by contractor
4	Final Remedial Action Report for the Landfill 1 Cap Site (IRP Site LF11)	Aug 1997	Not applicable (contains no original analytical data)
4	Quarterly Report OU 4 Quarterly Operations Monitoring and Optimization Report	Sep 1997	Data of appropriate quality entered into EIMS in IRPIMS-compatible format by contractor
4	Seeps and Springs Remedial Action Work Plan	Sep 1997	Not applicable (contains no original analytical data)
4	Interim Operation & Maintenance Manual Groundwater Extraction System OU 4	Oct 1997	Not applicable (contains no original analytical data)
4	Annual Report for OU 4	Nov 1997	Not applicable (contains no original analytical data)
4	Quarterly Report OU 4 Quarterly Operations Monitoring and Optimization Report Dec 97	Dec 1997	Data of appropriate quality entered into EIMS in IRPIMS-compatible format by contractor
4	Final Groundwater Modeling Study for Remedial Alternatives OU 4	Jan 1998	Not applicable (contains no original analytical data)
4	Final Remedial Action Report Phase II Remedial Action Horizontal Drain Upgrades OU 4	Jan 1998	Not applicable (contains no original analytical data)
4	Final Construction Report Phase II Remedial Action Horizontal Drain Upgrade OU 4	Jan 1998	Not applicable (contains no original analytical data)
4	Central Weber Sewer Improvement District Quarterly Ground Water Treatment System Performance Evaluation 1 Dec 97 – 28 Feb 98	Mar 1998	Not applicable (contains no original analytical data)
4	Ground-Water Monitoring in the Area of OU 4 HAFB UT Oct 96 thru Sep 97 Vol. IV	Mar 1998	Data of appropriate quality entered into EIMS in IRPIMS-compatible format by contractor
4	Quarterly Report OU 4 Quarterly Operations Monitoring and Optimization Report	Mar 1998	Data of appropriate quality entered into EIMS in IRPIMS-compatible format by contractor
4	Annual Inspection Report Operable Unit 4	Jun 1998	Data of appropriate quality loaded into EIMS in IRPIMS compatible format by contractor
4	Annual Inspection Report OU 4	Jul 1998	Not applicable (contains no original analytical data)
4	Draft Health and Safety Plan for Kd Study Operable Unit 4	Jul 1998	Not applicable (contains no original analytical data)
4	Cost and Performance Report for Horizontal Drain System Operable Unit 4	Jul 1998	Data of appropriate quality loaded into EIMS in IRPIMS compatible format by contractor
4	Operation and Maintenance Plan OU 4 Remedial Action Systems Volume 1 Landfill Cap and SVE Drain System Text and Appendices A-K	Aug 1998	Not applicable (contains no original analytical data)

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Operable Unit	Title	Date	EIMS and IRPIMS Status
4	Final Kd Field Sampling Plan Operable Unit 4	Aug 1998	Not applicable (contains no original analytical data)
4	Operation & Maintenance Plan OU 4 Remedial Action Systems	Aug 1998	Not applicable (contains no original analytical data)
4	Operation & Maintenance Monthly and Quarterly Report Repository Horizontal Drain Upgrade System OU 4	Sep 1998	Not applicable (contains no original analytical data)
4	Annual Inspection of Landfill 1 Cap and SVE Drain System	Sep 1998	Not applicable (contains no original analytical data)
4	Remedial Design Report and Work Plan Phase III Groundwater Extraction Trench System OU 4 Remedial Design	Oct 1998	Not applicable (contains no original analytical data)
4	Performance Monitoring Recommendations Report Operable Unit 4	Oct 1998	Data of appropriate quality loaded into EIMS in IRPIMS compatible format by contractor
4	Final Field Sampling and Analysis Plan for Landfill Contaminant Mass Analysis Operable Unit 4	Nov 1998	Not applicable (contains no original analytical data)
4	Final Annual Report for Operable Unit 4	Dec 1998	Not applicable (contains no original analytical data)
4	Final Remedial Design Report and Work Plan Phase III Groundwater Extraction Trench System OU 4	Jan 1999	Not applicable (contains no original analytical data)
4	Construction Cost Estimate Phase III Groundwater Extraction Trench System OU 4 Remedial Design	Jan 1999	Not applicable (contains no original analytical data)
4	Remedial Action Work Plan Phase III Groundwater Extraction Trench System OU 4	Jan 1999	Not applicable (contains no original analytical data)
4	Final Operation & Maintenance Plan OU 4 Remedial Action Systems Volume 3 – Horizontal Drain Upgrade System Appendix K	Jan 1999	Not applicable (contains no original analytical data)
4	Construction Documents for OU 4 Remedial Design Ground Water Extraction Trench System West Drain Line (Schedule A) and East Drain Line	Jan 1999	Not applicable (contains no original analytical data)
4	Final Operation & Maintenance Plan OU 4 Remedial Action Systems Volume 2 – Horizontal Drain Upgrade System Text and Appendices A-J	Jan 1999	Not applicable (contains no original analytical data)
4	Quarterly Monitoring Report October 1998 Sampling Event OU 6	Jan 1999	Data of appropriate quality loaded into EIMS in IRPIMS compatible format by contractor
4	Final Remedial Action Work Plan Phase III Groundwater Extraction Trench System OU 4	Jan 1999	Not applicable (contains no original analytical data)
4	Construction Cost Estimate Phase III Groundwater Extraction Trench System OU 4 Remedial Design	Jan 1999	Not applicable (contains no original analytical data)
4	Operation & Maintenance Plan OU 4 Remedial Action Systems Volume 2 – Horizontal Drain Upgrade System Text and Appendices A-J	Jan 1999	Not applicable (contains no original analytical data)
4	Semi-Annual Inspection of Landfill 1 Cap and SVE Drain System	Feb 1999	Not applicable (contains no original analytical data)
4	Central Weber Sewer Improvement District Quarterly Ground Water Treatment System Performance Evaluation December 1, 1998 through	Mar 1999	Data of appropriate quality loaded into EIMS in IRPIMS compatible format by contractor

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Operable Unit	Title	Date	EIMS and IRPIMS Status
4	Quarterly Monitoring Report January 1999 Sampling Event OU 6	Mar 1999	Data of appropriate quality loaded into EIMS in IRPIMS compatible format by contractor
4	Quarterly Summary Report OU 4 (Dec 98 – Feb 99)	Mar 1999	Data of appropriate quality loaded into EIMS in IRPIMS compatible format by contractor
4	Final Performance Monitoring Recommendation Report Operable Unit 4	Apr 1999	Data of appropriate quality loaded into EIMS in IRPIMS compatible format by contractor
4	Annual Inspection Record OU 4	Jul 1999	Not applicable (contains no original analytical data)
4	Restoration and Practicability Report for OU 4	Aug 1999	Data of appropriate quality loaded into EIMS in IRPIMS compatible format by contractor
4	Final Quality Control Plan OU 4 Horizontal Drain Upgrade System	Aug 1999	Not applicable (contains no original analytical data)
4	Quarterly Seeps and Springs Sampling Reports	Dec 1995 to Aug 1999	Data of appropriate quality loaded into EIMS in IRPIMS compatible format by contractor
4	Cost and Performance Report for the Horizontal Drain System Operable Unit 4	Sep-1999	Not applicable (contains no original analytical data)
4	Cost and Performance Report for the Horizontal Drain System Operable Unit 4	Sep-1999	Not applicable (contains no original analytical data)
4	Annual Report for Landfill 1 Cap Operable Unit 4	Nov-1999	Not applicable (contains no original analytical data)
4	Analytical Data Validation Report for the Summer 1999 Operable Unit 4 Groundwater Monitoring Well Sampling Round	Jan-2000	EIMS/IRPIMS status unknown
4	Semi-Annual Report for Landfill 1 Operable Unit 4	Feb-2000	Not applicable (contains no original analytical data)
4	Analytical Data Validation Report for the Fall 1999 Operable Unit 4 Groundwater Monitoring Well Sampling Round	Feb-2000	EIMS/IRPIMS status unknown
4	Cost and Performance Report for the Horizontal Drain System Operable Unit 4	Mar-2000	Not applicable (contains no original analytical data)
4	Central Weber Sewer Improvement District Quarterly Compliance Report for OU4 January - March 2000	Apr-2000	EIMS/IRPIMS status unknown
4	Central Weber Sewer Improvement District Quarterly Compliance Report for OU4 April - July 2000	Jul-2000	EIMS/IRPIMS status unknown
5	Technical Proposal IRP Activities for the Herbicide Orange Test Area Bamberger Pond, US Tooele Rail Depot at Hill Air Force Base, Utah	Oct 1987	Not applicable (contains no original analytical data)
5	IRP Site Inspection, Remedial Investigation and Feasibility Study for Bamberger Pond and U.S. Army Tooele Rail Shop Hill AFB, UT and Decision Document for Herbicide Orange Test Area, Utah Test and Training Range, Sampling and Analysis Plan	Feb 1989	Data of appropriate quality entered into EIMS in IRPIMS-compatible format by contractor
5	IRP Site Inspection, Remedial Investigation and Feasibility Study for Bamberger Pond and U.S. Army Tooele Rail Shop Hill AFB, UT and Decision Document for Herbicide Orange Test Area, Utah Test and Training Range, Final Work Plan	Feb 1989	Data of appropriate quality entered into EIMS in IRPIMS-compatible format by contractor
5	Decision Document for Herbicide Orange Test Area	Jan 1989	Not applicable (contains no original analytical data)

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Operable Unit	Title	Date	EIMS and IRPIMS Status
5	Data Summary Report, Vol 1, Tooele Rail Shop	Jan 1992	Data entered into EIMS in IRPIMS-compatible format by contractor
5	Data Summary Report, Vol II, Bamberger Pond	Jan 1992	Data entered into EIMS in IRPIMS-compatible format by contractor
5	Technical Memorandum Records Search for OU 5 Site SS17	Mar 1992	Not applicable (contains no original analytical data)
5	Chemical Data Acquisition Plan (CDAP) for Operable Unit 5 Sites SS17 and SD16	Jun 1992	Not applicable (contains no original analytical data)
5	Proposed Air Sampling Protocol for OU 5, Air Monitoring in Sunset, Utah	May 1993	Not applicable (contains no original analytical data)
5	Technical Memorandum Summary of QA/QC Activities for Soil and Groundwater Samples (8 March – 5 May 1993) at Operable Unit 5 Sites	Jul 1993	Not applicable (contains no original analytical data)
5	Site Safety and Health Plan (SSHP) for Operable Unit 5 Sites SS17 and SD16	Sep 1993	Not applicable (contains no original analytical data)
5	Groundwater Sampling Plan Operable Unit 5	Oct 1993	Not applicable (contains no original analytical data)
5	Chemical Data Acquisition Plan (CDAP) for OU 5 Sites SS17 and SD16	Nov 1993	Not applicable (contains no original analytical data)
5	Laboratory Reports of Chemical Analytical Data for Groundwater Samples (10 Sep-28 Oct 93) for OU 5 Sites SS21 & SD 16 Vol 1	Nov 1993	Data entered into EIMS in IRPIMS-compatible format by contractor
5	Technical Memorandum Field Drain Study for Operable Unit 5 Sites SS17 and SD16	Dec 1993	Not applicable (contains no original analytical data)
5	Addendum Chemical Data Acquisition Plan (CDAP) for Operable Unit 5 Site SS17 and SD16	Mar 1994	Data entered into EIMS in IRPIMS-compatible format by contractor
5	OU 5 Sampling Data 21 Apr 93, 29 Apr 93, 30 Apr 93, 3 May 93, 13 May 93	May 1994	Data entered into EIMS in IRPIMS-compatible format by contractor
5	OU 5 Sampling Data 21 Apr 93, 29 Apr 93, 30 Apr 93, 3 May 93, 13 May 93	May 1994	Data entered into EIMS in IRPIMS-compatible format by contractor
5	Final, Groundwater Sampling Plan, OU 5	Jun 1994	Not applicable (contains no original analytical data)
5	Final, Environmental Baseline Survey OU 5 Pumping Test – Lot 0139	Aug 1994	Not applicable (contains no original analytical data)
5	Final Work and Safety Plan Vegetative Uptake Study for Operable Unit 5	Aug 1994	Not applicable (contains no original analytical data)
5	Final Environmental Assessment for OU 5 Sites SS17, SD16	Aug 1994	Not applicable (contains no original analytical data)
5	Final, Pumping Test Work Plan for Operable Unit 5	Sep 1994	Not applicable (contains no original analytical data)
5	Operable Unit 5 Treatability Study Air-Sparge Hydrocyclone Test Plan, Hill Air Force Base	Oct 1994	Not applicable (contains no original analytical data)
5	Final Environmental Baseline Survey for Installation & Expansion of Aeration Curtain at OU 5	Nov 1994	Not applicable (contains no original analytical data)
5	Final EE/CA for Operable Unit 5	Dec 1994	Not applicable (contains no original analytical data)
5	Final Baseline Risk Assessment for Operable Unit 5	Feb 1995	Not applicable (contains no original analytical data)
5	Final Treatability Study Work Plan for Operable Unit 5 Hill Air Force Base	Jan 1995	Not applicable (contains no original analytical data)

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Operable Unit	Title	Date	EIMS and IRPIMS Status
5	Technical Memorandum for Groundwater Investigation, Bamberger Pond, OU 5, Hill AFB	Feb 1995	Not applicable (contains no original analytical data)
5	Final RI for Operable Unit 5	May 1995	Data entered into EIMS in IRPIMS-compatible format by contractor
5	Final Soil Management System Construction Quality Assurance/Quality Control Plan	Jul 1995	Not applicable (contains no original analytical data)
5	Final Construction Quality Assurance/Quality Control Plan for Off-Base Aeration Curtain Treatment System Operable Unit 5	Jul 1995	Not applicable (contains no original analytical data)
5	Final Long Term Monitoring Annual Report 1995 Operable Unit 5	Aug 1995	Not applicable (contains no original analytical data)
5	Draft Final, Environmental Assessment for Clinton City Water Line	Aug 1995	Not applicable (contains no original analytical data)
5	Long Term Monitoring Report for OU 5	Aug 1995	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
5	Final Environmental Baseline Survey for the Phase 3 Removal Action	Oct 1995	Not applicable (contains no original analytical data)
5	Final Risk Assessment for Homegrown Vegetable Pathway at OU 5 Delivery Order 5041	Oct 1995	Not applicable (contains no original analytical data)
5	Final Environmental Baseline Survey for the Phase 4 Removal Action	Oct 1995	Not applicable (contains no original analytical data)
5	Final Soils Management Work Plan Operable Unit 5	Nov 1995	Not applicable (contains no original analytical data)
5	Final Hill AFB OU5 EE/CA Phase 2 and 3 Data Report	Feb 1996	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
5	Final Action Memorandum Operable Unit 5, Hill AFB	Mar 1996	Not applicable (contains no original analytical data)
5	Final Addendum to the Final Soils Management Work Plan Operable Unit 5, Hill AFB	Apr 1996	Not applicable (contains no original analytical data)
5	Final Performance Evaluation of the Aeration Curtain Operable Unit 5	Apr 1996	Not applicable (contains no original analytical data)
5	Long Term Monitoring Report for OU 5	July 1996	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
5	Final Work Plan for a Demonstration of Remedial by Natural Attenuation for Groundwater OU 5	Oct 1996	Not applicable (contains no original analytical data)
5	Technical Review of Off-Base 300 West Groundwater Extraction Trench Design for OU 5	Nov 1996	Not applicable (contains no original analytical data)
5	Final Long Term Monitoring Report July 1996 through October 1996 Operable Unit 5	Jan 1997	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
5	Technical Memorandum for Soils Reuse	Feb 1997	Not applicable (contains no original analytical data)
5	Final Aeration Curtain Startup Manual Operable Unit 2	Mar 1997	Not applicable (contains no original analytical data)
5	Final Construction Quality Assurance/Quality Control Plan for On-Base Northwest Groundwater Extraction System Operable Unit 5	Mar 1997	Not applicable (contains no original analytical data)

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Operable Unit	Title	Date	EIMS and IRPIMS Status
5	Work Plan, Phase 1 – Design of Bamberger Pond Modifications and Related Modifications to the Base Stormwater Drainage System	May 1997	Not applicable (contains no original analytical data)
5	Final Groundwater Sampling and Analysis Plan Operable Unit 5	Jun 1997	Not applicable (contains no original analytical data)
5	Well Installation and Aquifer Testing Work Plan	Sep 1997	Not applicable (contains no original analytical data)
5	Final Aeration Curtain Monitoring Well Installation and Groundwater Sampling Work Plan	Nov 1997	Not applicable (contains no original analytical data)
5	Final Remediation by Natural Attenuation Treatability Study for Operable Unit 5	Dec 1997	Not applicable (contains no original analytical data)
5	Final, Phase 2 As-Built Package, OU 5	Jan 1998	Not applicable (contains no original analytical data)
5	Groundwater Monitoring Report Bamberger Pond June through December 1997 OU 5	Jan 1998	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
5	Draft Long Term Monitoring Report March 1997 – September 1997 Operable Unit 5	Jan 1998	Not applicable (contains no original analytical data)
5	Bamberger Pond Site Investigation Letter Report	Feb 1998	Not applicable (contains no original analytical data)
5	Final Operations Report Phase II Groundwater Extraction System OU 5	Apr 1998	Not applicable (contains no original analytical data)
5	Aquifer Testing Letter Report Bamberger Pond OU 5	Apr 1998	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
5	OU 5 1998 Groundwater Sampling Plan	Apr 1998	Not applicable (contains no original analytical data)
5	Final, OU 5 Well Installation Work Plan Bamberger Pond	May 1998	Not applicable (contains no original analytical data)
5	Final, Strategic Plan for OU 5	Jun 1998	Not applicable (contains no original analytical data)
5	Final Conceptual Design Report Bamberger Pond Modifications to the Base Stormwater Drainage System	Jul 1998	Not applicable (contains no original analytical data)
5	Final Report – Stormwater Model for the Bamberger Pond – DRMO Pond Watersheds	Jul 1998	Not applicable (contains no original analytical data)
5	Aeration Curtain Monitor Well Installation Letter Report	Oct 1998	Not applicable (contains no original analytical data)
5	Risk Evaluation for Meadow Park in Clinton, UT	Nov 1998	Not applicable (contains no original analytical data)
5	Statistical Analysis of Metals in Groundwater, OU 5, Bamberger Pond, Hill AFB	Nov 1998	Not applicable (contains no original analytical data)
5	Final Work Plan for the Enhanced Bioremediation at Phase II at OU 5	Jan 1999	Not applicable (contains no original analytical data)
5	Economic Evaluation of Alternatives for the OU 5 Phase 1 System – Final	Apr 1999	Not applicable (contains no original analytical data)
5	Summary of Results from the Aeration Curtain Sparge Pipe Cleaning Operations Under DO 5099: Task 4.2.8	May 1999	Not applicable (contains no original analytical data)
5	Draft Remedial Investigation/Feasibility Study Work Plans for Operable Units 5 and 9	May 1999	Not applicable (contains no original analytical data)
5	Draft Long Term Monitoring Report March 1998 through February 1999 Operable Unit 5	May 1999	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
5	Long Term Monitoring Report March 1998 through February 1999 Operable Unit 5	Dec-1999	EIMS/IRPIMS status unknown
5,9	Remedial Investigation/Feasibility Study Work Plans for Operable Units 5 and 9	May-2000	Not applicable (contains no original analytical data)

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Operable Unit	Title	Date	EIMS and IRPIMS Status
5	Fate and Analysis of Arsenic and Manganese in the Vicinity of Bamberger Pond OU 5 Volume 1	Jun-2000	Not applicable (contains no original analytical data)
5	Fate and Analysis of Arsenic and Manganese in the Vicinity of Bamberger Pond OU5 Volume 2	Jun-2000	Not applicable (contains no original analytical data)
6	Final Report Phase 2b IRP Survey: Volume 1 – Text	Sep 1984	Data not entered into EMIS or IRPIMS-compatible format
6	Installation Restoration Program Phase 2 – Confirmation/Quantification Stage 2: Volume 1 – Report and Appendices A and B	Nov 1987	Data not entered into EMIS or IRPIMS-compatible format
6	Site Evaluation Work Plan for Building 1915	Nov 1988	Data of appropriate quality entered into EIMS in IRPIMS-compatible format by contractor
6	Preliminary Assessment Building 1915 Hill Air Force Base, Utah	Jun 1988	Not applicable (contains no original analytical data)
6	Final Report Site Evaluation Report for Building 1915, Hill AFB, Utah	Oct 1989	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
6	Work Plan for Site Evaluation Study	Aug 1991	Not applicable (contains no original analytical data)
6	Quality Assurance Project Plan for Site Evaluation Study	Aug 1991	Not applicable (contains no original analytical data)
6	Health and Safety Plan for Site Evaluation	Aug 1991	Not applicable (contains no original analytical data)
6	Technical Memorandum Summary of Operable Unit 6 Round 1 QA/QC Activities	Mar 1992	Not applicable (contains no original analytical data)
6	Technical Memorandum Summary of Operable Unit 6 Round 2 QA/QC Activities	Apr 1992	Not applicable (contains no original analytical data)
6	Final Off Base Water Rights Search – Sections 13, 14, 24 of T5N, R2W & Section 12 of T4N R2W	Nov 1992	Not applicable (contains no original analytical data)
6	Pond 6: Site Specific Health & Safety Plan for Preliminary Assessment/Site Investigation at Pond 6 HAFB, UT: 7	Dec 1992	Not applicable (contains no original analytical data)
6	Final Work Plan for Preliminary Assessment/Site Investigation for Bldg 1946 Evaporation Pond	Dec 1992	Not applicable (contains no original analytical data)
6	Site Evaluation Study Report	Dec 1992	Data entered into EIMS in IRPIMS-compatible format by contractor
6	Air Monitoring Data Summary for the Craigdale Subdivision: Operable Unit 6	Feb 1993	Data entered into EIMS in IRPIMS-compatible format by contractor
6	Quality Assurance/Quality Control Technical Memorandum and Raw Analytical Data for Operable Unit 6 Water Sample	Feb 1993	Not applicable (contains no original analytical data)
6	Final Remedial Investigation/Feasibility Study Work Plan Operable Unit 6 Sites ST22 and OT26	May 1993	Not applicable (contains no original analytical data)
6	Final Remedial Investigation/Feasibility Study Health and Safety Plan OU 6 Sites ST22 and OT26	May 1993	Not applicable (contains no original analytical data)
6	Craigdale Area Research Results for Operable Unit 6	May 1993	Not applicable (contains no original analytical data)
6	Final Remedial Investigation/Feasibility Study Sampling and Analysis Plan Operable Unit 6 Sites ST22 and OT 26	May 1993	Not applicable (contains no original analytical data)
6	Final Preliminary Assessment/Site Investigation Building 1946 Evaporation Pond: Volume 1	Aug 1993	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor

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Operable Unit	Title	Date	EIMS and IRPIMS Status
6	Final Preliminary Assessment/Site Investigation Building 1946 Evaporation Pond: Volume 2	Aug 1993	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
6	Final Preliminary Assessment/Site Investigation Pond 6, Vol 1	Sep 1993	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
6	Final Preliminary Assessment/Site Investigation Pond 6, Volume II	Sep 1993	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
6	Air Monitoring Data Summary for the Craigdale Subdivision OU 6	Nov 1993	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
6	RI Report for Operable Unit 6	Jan 1995	Not applicable (contains no original analytical data)
6	RI Data	Jan 1994	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
6	Agency for Toxic Substances and Disease Registry Health Consultation for Hill Air Force Base Operable Unit 6	Jul 1994	Not applicable (contains no original analytical data)
6	Bidding Information and Construction Specifications – Treatability Study Implementation OU 6	Sep 1994	Not applicable (contains no original analytical data)
6	Site Specific Health and Safety Plan for Treatability Study Implementation Operable Unit 6	Oct 1994	Not applicable (contains no original analytical data)
6	Final Engineering Evaluation/Cost Analysis Operable Unit 6	Oct 1994	Not applicable (contains no original analytical data)
6	Final Treatability Study Work Plan Operable Unit 6 Sites ST22 and OT26	Oct 1994	Not applicable (contains no original analytical data)
6	Final Environmental Baseline Survey for the Phase I Removal Action Collection System at OU 6	Nov 1994	Not applicable (contains no original analytical data)
6	Final Environmental Baseline Survey for the Phase II Removal Action Collection System at OU 6	Nov 1994	Not applicable (contains no original analytical data)
6	Final Environmental Assessment for Operable Unit 6	Dec 1994	Not applicable (contains no original analytical data)
6	Final Off-Base Extraction and Treatment System Design Operable Unit 6	Feb 1995	Not applicable (contains no original analytical data)
6	Sampling and Analysis Plan Technology Demonstration Operable Unit 6	Apr 1995	Not applicable (contains no original analytical data)
6	Baseline Risk Assessment for Operable Unit 6	May 1995	Not applicable (contains no original analytical data)
6	Pump Test Work Plan Operable Unit 6	Jun 1995	Not applicable (contains no original analytical data)
6	Final Remedial Investigation Report for Operable Unit 6 (Sites ST22 and OT26) Vol 1 – text: Vol 2 – Appendices	Jul 1995	Not applicable (contains no original analytical data)
6	Technical Memorandum for Aquifer Pumping Test Operable Unit 6 Technology Demonstration Site, Hill AFB, Utah	Aug 1995	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
6	Interim IAS/SVE Test Technology Demonstration Report OU 6	Sep 1995	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
6	Technology Performance Application Analysis of In Situ Air Sparging Operable Unit 6	Apr 1996	Not applicable (contains no original analytical data)
6	Final Desorption Study Report Operable Unit 6	Apr 1996	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
6	Ground Water Sampling Summary October 1995 through April 1996	Apr 1996	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
6	Startup and Optimization Work Plan for the Phase I Groundwater Treatment System OU 6, HAFB, Utah	Jun 1996	Not applicable (contains no original analytical data)

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Operable Unit	Title	Date	EIMS and IRPIMS Status
6	Final Feasibility Study Report Operable Unit 6, Sties ST22, OT26	Sep 1996	Not applicable (contains no original analytical data)
6	Final Proposed Plan for Operable Unit 6	Nov 1996	Not applicable (contains no original analytical data)
6	Final Startup & Optimization Summary Report for the Phase 1 Groundwater Treatment System OU 6	Dec 1996	Not applicable (contains no original analytical data)
6	Action Memorandum OU 6	Dec 1996	Not applicable (contains no original analytical data)
6	Preliminary Results for the UVB Test Hill AFB, OU 6, Technology Demonstration	Feb 1997	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
6	Final Pre-Design Work Plan Operable Unit 6	Mar 1997	Not applicable (contains no original analytical data)
6	Final Work Plan for a Demonstration of Remediation by Natural Attenuation for Groundwater at OU 6	May 1997	Not applicable (contains no original analytical data)
6	Pre-Design Memorandum Operable Unit 6	May 1997	Not applicable (contains no original analytical data)
6	Technology Performance & Application Analysis of UVB Groundwater Circulating Well Technology	Jul 1997	Not applicable (contains no original analytical data)
6	Attachment to the Technology Performance and Application Analysis of UVB Groundwater Circulating Well Technology Operable Unit 6	Jul 1997	Not applicable (contains no original analytical data)
6	Well Installation and Aquifer Testing Work Plan Operable Unit 6	Jul 1997	Not applicable (contains no original analytical data)
6	Expert Peer Review and Advisory Panel Review for In Situ Air Sparging and UVB Treatability Studies at Hill AFB	Jul 1997	Not applicable (contains no original analytical data)
6	Final Record of Decision OU 6 Sites ST022, OTO26, SD408	Aug 1997	Not applicable (contains no original analytical data)
6	Report Repository Performance Evaluation Report Craigdale Pump and Treat System Operable Unit 6 September 1996 – August 1997	Aug 1997	Not applicable (contains no original analytical data)
6	Report Repository Performance Evaluation Report Craigdale Pump and Treat System OU 6	Aug 1997	Not applicable (contains no original analytical data)
6	Final Operation & Maintenance Manual Craigdale Pump and Treat System Operable Unit 6: Volume 1 of 2-Text & Appendices A-J	Sep 1997	Not applicable (contains no original analytical data)
6	Final Treatment Options Report Operable Unit 6 Hill Air Force Base, Utah	Sep 1997	Not applicable (contains no original analytical data)
6	Final Operation & Maintenance Manual Craigdale Pump and Treat System Operable Unit 6: Volume 2 of 2-Appendix K	Sep 1997	Not applicable (contains no original analytical data)
6	Draft/Final Remedial Design/Remedial Action Work Plan	Dec 1997	Not applicable (contains no original analytical data)
6	On-Base Aquifer Testing and Well Installations Report Operable Unit 6	Mar 1998	Not applicable (contains no original analytical data)
6	Baseline Technical Memorandum Craigdale Pump and Treat System OU 6	Apr 1998	Not applicable (contains no original analytical data)
6	100% Groundwater Extraction and Treatment System for OU 6 Construction Specifications	May 1998	Not applicable (contains no original analytical data)
6	Ground-Water Evaluation and Treatment System for OU 6 Quality Assurance/Quality Control Plan	Jul 1998	Not applicable (contains no original analytical data)
6	Report Repository 2 nd Year of Operation Performance Evaluation Report Craigdale Pump and Treat System OU 6	Aug 1998	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor

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Operable Unit	Title	Date	EIMS and IRPIMS Status
6	Quarterly Monitoring Report July 1998 Sampling Event	Sep 1998	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
6	Report Repository 3 rd Year of Operation Performance Evaluation	Jan 1999	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
6	Report Craigdale Pump and Treat System OU 6	Jan 1999	Not applicable (contains no original analytical data)
6	Quarterly Monitoring Report October 1998 Sampling Event	Jan 1999	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
6	Quarterly Monitoring Report January 1999 Sampling Event OU 6	Mar 1999	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
6	Startup Work Plan On-Base Pump and Treat System OU 6	Apr 1999	Not applicable (contains no original analytical data)
6	Final Interim PCB Contaminated Soil Removal Report for Electrical Substation No. 2	Jun 1999	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
6	Construction Report – On-Base Extraction Treatment System	Jul 1999	Not applicable (contains no original analytical data)
6	Draft Remedial Action Report On-Base Extraction Treatment System	Jul 1999	Not applicable (contains no original analytical data)
6	Final Construction Photo Log On-Base Extraction and Treatment System OU 6	Jul 1999	Not applicable (contains no original analytical data)
6	Site Health and Safety Plan OU 6 Pump and Treat System	Jul 1999	Not applicable (contains no original analytical data)
6	Final Quality Control Plan OU 6 Craigdale Pump and Treat System	Aug 1999	Not applicable (contains no original analytical data)
6	Construction Report On-Base Extraction and Treatment System Operable Unit 6	Sep-1999	Not applicable (contains no original analytical data)
6	Semi-Annual Monitoring Report October 1999 Sampling Event Operable Unit 6	Dec-1999	Data partially present in database
6	Remedial Action Report On-Base Extraction and Treatment System, Operable Unit 6	Mar-2000	Not applicable (contains no original analytical data)
6	Analytical Data Validation Report for the Operable Unit 6 Groundwater Monitoring Well Verification Sampling Round	Mar-2000	EIMS/IRPIMS status unknown
6	Operation & Maintenance Manual On-Base Pump and Treat System Operable Unit 6 Volume 1 of 2 Text & Appendices A - I	Jul-2000	Not applicable (contains no original analytical data)
6	Operation & Maintenance Manual On-Base Pump and Treat System Operable Unit 6 Volume 2 of 2 Appendix J	July-2000	Not applicable (contains no original analytical data)
7	Phase II - Confirmation/Quantification Stage 1 (Technical Operations Plan) Building 220 Investigation	Oct 1985	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
7	Installation Restoration Program Phase II - Confirmation/Quantification Stage 1, Building 220, Paint Hangar Final Report for Period September 1985 through September 1987, Hill AFB, Utah (three volumes)	May 1988	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
7	Final Field Sampling for a Soils Investigation at Two Chromium Dump Sites in Layton, Utah	Nov 1989	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor

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Operable Unit	Title	Date	EIMS and IRPIMS Status
7	Work Plan and Health and Safety Plan for a Site Evaluation of Chromium Contaminated Soils Beneath Building 225 and at Base Supply Well 6	Feb 1990	Not applicable (contains no original analytical data)
7	Summary Report of Chromium Cleanup at Two Sites in Layton, Utah	Apr 1990	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
7	Site Characterization Report for a Portion of Building 225 and Site Investigation of Fill Soils at Base Supply Well 6	Dec 1991	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
7	Remedial Investigation/Feasibility Study Work Plan	Jan 1993	Not applicable (contains no original analytical data)
7	Remedial Investigation/Feasibility Study Sampling and Analysis Plan	Jan 1993	Not applicable (contains no original analytical data)
7	Remedial Investigation/Feasibility Study Health and Safety Plan	Jan 1993	Not applicable (contains no original analytical data)
7	Remedial Investigation/Feasibility Sludge Sampling and Analysis Plan (SAP Addendum for OU 7)	Oct 1993	Not applicable (contains no original analytical data)
7	Final Remedial Investigation/Feasibility Study Sampling & Analysis Plan (SAP) Addendum for Operable Unit 7 (IRP Sites SS27, ST31, and SS32)	Apr 1994	Not applicable (contains no original analytical data)
7	Final Phase I Site Characterization Technical Memorandum for Operable Unit 7 (IRP Sites SS27, ST31, and SS32)	Apr 1994	Not applicable (contains no original analytical data)
7	Remedial Investigation/Feasibility Study Report for Operable Unit 7	Feb 1995	Data of appropriate quality loaded into IRPIMS-compatible format by contractor
7	Proposed Plan for Operable Unit 7	Feb 1995	Data of appropriate quality loaded into IRPIMS-compatible format by contractor
7	Record of Decision for Operable Unit 7	Sep 1995	Not applicable (contains no original analytical data)
7	Remedial Design/Remedial Action Work Plan for Operable Unit 7	Aug 1996	Not applicable (contains no original analytical data)
7	Well Survey Summary and Recommendation Letter Report	Sept 1996	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
7	Inspection and Maintenance Plan for the Remedial Action at Operable Unit 7	Dec 1996	Not applicable (contains no original analytical data)
7	Remedial Action Health and Safety Plan for Operable Unit 7	Dec 1996	Not applicable (contains no original analytical data)
7	Remedial Action Project Close-out Report for Operable Unit 7	Aug 1998	Not applicable (contains no original analytical data)
7	Gamma/Neutron Logging of U7-201 through U7-206	Aug 1998	Not applicable (contains no original analytical data)
7	Baseline Inspection of Floor Slab	Aug 1998	Not applicable (contains no original analytical data)
7	Gamma/Neutron Logging of U7-201 through U7-206	Oct 1998	Not applicable (contains no original analytical data)
7	Final Annual Report for Operable Unit 7	Dec 1998	Data of appropriate quality loaded into EIMS in IRPIMS compatible format by contractor
7	Gamma/Neutron Logging of U7-201 through U7-206	May 1999	Not applicable (contains no original analytical data)

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Operable Unit	Title	Date	EIMS and IRPIMS Status
7	Annual Inspection Report on Operable Unit 3 Berman Pond, Sodium Hydroxide Tank Site, Operable Unit 4 Landfill 1, Operable Unit 7 Building 225 Floor Slab	Oct-1999	Not applicable (contains no original analytical data)
7	Annual Report for Operable Unit 7 Building 225 Floor Slab	Nov-1999	Not applicable (contains no original analytical data)
7	Analytical Data Validation Report for the Spring 1999 Operable Unit 7 Groundwater Monitoring Well Sampling Round	Jan-2000	EIMS/IRPIMS status unknown
8	Layton Plume Work Plan	Jul 1987	Not applicable (contains no original analytical data)
8	Layton Groundwater Investigation Draft Report (Text)	Jul 1988	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
8	Layton Groundwater Investigation Final Report Revision (Text)	Mar 1989	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
8	Layton Groundwater Investigation Revision: Appendices	May 1989	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
8	Final Site Monitoring Plan for Operable Unit 8	Jun 1994	Not applicable (contains no original analytical data)
8	Site Monitoring Plan for Operable Unit 8	Jun 1994	Not applicable (contains no original analytical data)
8	Submittal of Treatability Study Technical Memorandum for OU 8	Nov 1994	Not applicable (contains no original analytical data)
8	Draft Final Environmental Assessment for Operable Unit 8	Dec 1994	Not applicable (contains no original analytical data)
8	Final Data Summary and Recommendations Report for OU 8	Jan 1995	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
8	First and Second Monitoring Rounds Data Evaluation for Operable Unit 8	Mar 1995	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
8	Remedial Investigation/Feasibility Study Work Plans for Operable Unit 8	Mar 1995	Not applicable (contains no original analytical data)
8	Data Summary and Recommendations Report	Jun 1995	Data of appropriate quality entered into EIMS in IRPIMS-compatible format
8	RI/FS Work Plans for Operable Unit 8	Jun 1995	Not applicable (contains no original analytical data)
8	Interim Remedial Action Focused Feasibility Study for Base Boundary Operable Unit 8	July 1995	Not applicable (contains no original analytical data)
8	IRA Proposed Plan for Operable Unit 8	Aug 1995	Not applicable (contains no original analytical data)
8	Letter Work Plan Addendum for Operable Unit 8	Sept 1995	Not applicable (contains no original analytical data)
8	IRA Field Work Data Summary and Remedial Design Technical Memorandum	Mar 1996	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
8	Operable Units 1 and 8 Field Sampling Plan, April 1996 through March 1997	May 1996	Not applicable (contains no original analytical data)
8	Analytical Quality Control Summary Report	May 1996	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
8	Well Survey Summary and Recommendation Letter Report	Sept 1996	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
8	Letter Work Plan for OUs 3 and 8	Sept 1996	Not applicable (contains no original analytical data)
8	Data Validation Summary Report for the Twelfth Sampling Round at Operable Unit 1 and the Third Sampling Round at Operable Unit 8	Nov 1996	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor

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Operable Unit	Title	Date	EIMS and IRPIMS Status
8	Low Flow Sampling Letter Report Work Plan	Dec 1996	Not applicable (contains no original analytical data)
8	OU 8 Off-Base Drainage Survey, Water User Survey, and Residential Survey Letter Report	Dec 1996	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
8	Final IRA Remedial Design	June 1997	Not applicable (contains no original analytical data)
8	OU 8 Low-Flow Sampling Evaluation Letter Report.	Jan 1997	Data of appropriate quality loaded into EIMS in IRPIMS compatible format by contractor
8	Final Record of Decision for an Interim Remedial Action at Operable Unit 8.	May 1997	Not applicable (contains no original analytical data)
8	Final IRA Remedial Design.	Jun 1997	Not applicable (contains no original analytical data)
8	Final Interim Remedial Action Letter Work Plan for Operable Unit 8.	Jun 1997	Not applicable (contains no original analytical data)
8	Data Validation Summary Report for the Fourth Sampling Round Operable Unit 8.	Jun 1997	Data of appropriate quality loaded into EIMS in IRPIMS compatible format by contractor
8	Final Interim Remedial Action Construction Quality Assurance Plan for Operable Unit 8.	Jun 1997	Not applicable (contains no original analytical data)
8	Final Remedial Investigation Letter Work Plan Operable Unit 8.	Aug 1997	Not applicable (contains no original analytical data)
8	Final Baseline Ground-water Monitoring Work Plan, Operable Unit 8 Interim Remedial Action.	Aug 1997	Not applicable (contains no original analytical data)
8	Operable Unit 8 Second Round of Interim Remedial Action Baseline Monitoring.	Nov 1997	Associated data to be loaded under Field Work Data Summary Letter Report for DO 5090.
8	Data Final Operable Unit 8 Interim Remedial Action Statistical Evaluation of Baseline Concentrations Report.	Sep 1998	Associated data loaded under Field Work Data Summary Letter Report data load.
8	Draft Remedial Investigation Letter Work Plan for Operable Unit 8.	Sep 1998	Not applicable (contains no original analytical data)
8	Final Interim Remedial Action Report for Operable Unit 8.	Sep 1998	Not applicable (contains no original analytical data)
8	Draft Final Remedial Hydraulic Containment Containment System Operation and Maintenance Plan Operable Unit 8.	Oct 1998	Not applicable (contains no original analytical data)
8	Field Work Data Summary Letter Report.	Dec 1998	Data appropriated quality loaded into EIMS in IRPIMS compatible format by contractor
8	Final Construction Completion Report for Operable Unit 8 Interim Remedial Action Hydraulic Containment System.	Jan 1999	Not applicable (contains no original analytical data)
8	Report Repository Operation and Performance Reports Interim Remedial Action Hydraulic Containment System Operable Unit 8.	May 1998- Apr 1999	Not applicable (contains no original analytical data)
8	Draft Remedial Investigation Letter Work Plan for Operable Unit 8.	Jun 1999	Not applicable (contains no original analytical data)
8	Remedial Investigation Letter Work Plan for Operable Unit 8	Sep-1999	Not applicable (contains no original analytical data)
8	Operable Unit 8 IRA Statistical Evaluation of Baseline Concentrations Report	Oct-1999	EIMS/IRPIMS status unknown
8	Strategic Plan for Operable Unit 8	Mar-2000	Not applicable (contains no original analytical data)
8	Interim Remedial Action Hydraulic Containment System Operation and Maintenance Plan for Operable Unit 8 Volume I of III- Report and Appendices A-K	Mar-2000	Not applicable (contains no original analytical data)

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Operable Unit	Title	Date	EIMS and IRPIMS Status
8	Interim Remedial Action hydraulic Containment System Operation and Maintenance Plan for Operable Unit 8 Volume II of III- Appendix L, Sections 1-3	Mar-2000	Not applicable (contains no original analytical data)
8	Interim Remedial Action Hydraulic Containment System Operation and Maintenance Site-Specific Safety and Health Plan for Operable Unit 8	Mar-2000	Not applicable (contains no original analytical data)
8	Data Summary Letter Report for Operable Unit 8	Mar-2000	Not applicable (contains no original analytical data)
9	Site Specific Health and Safety Plan for Preliminary Site Assessment/Site Investigation at Pond 6 Hill Air Force Base, Utah	Jan 1992	Not applicable (contains no original analytical data)
9	Final Work Plan for Preliminary Assessment/Site Inspection B-1946 Evaporation Pond	Dec 1992	Not applicable (contains no original analytical data)
9	Final Work Plan for Preliminary Site Assessment/Site Investigation for Pond 6	Dec 1992	Not applicable (contains no original analytical data)
9	Final Preliminary Assessment/Site Inspection B-1946 Evaporation Pond Volume 1	Aug 1993	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
9	Final Preliminary Assessment/Site Inspection B-1946 Evaporation Pond Volume II	Aug 1993	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
9	Final Preliminary Assessment/Site Investigation Pond 6: Volume 1	Sep 1993	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
9	Final Preliminary Assessment/Site Investigation Pond 6: Volume 2	Sep 1993	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
9	Final South Area Preliminary Assessment Report Management Action Plan	Apr 1994	Not applicable (contains no original analytical data)
9	Work Plan for South Area of Operable Unit 9 Site Inspection	Aug 1995	Not applicable (contains no original analytical data)
9	Final North Area Preliminary/Assessment Report	Jun 1995	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
9	Work Plan for North Area of Operable Unit 9 Site Inspection	Jun 1995	Not applicable (contains no original analytical data)
9	Work Plan Technical Memorandum North Area	Sept 1995	Not applicable (contains no original analytical data)
9	Draft Final Work Plan for OU 9 North Area Site Inspection	Oct 1995	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
9	Final Work Plan North Area Site Inspection	Nov 1995	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
9	Phase I Site Inspection Data Report North Area	Jun 1996	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
9	Phase II Site Inspection Data Report North Area	Aug 1996	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
9	Draft Final Site Inspection Report OU 9 North Area	Nov 1996	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
9	South Area of Operable Unit 9 Site Inspection Final Comprehensive Data Evaluation	Jan 1997	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
9	Final Decision Document for Installation Restoration Program Site SD40a Category III No Further Remedial Action Planned Pond 6	Mar 1998	Not applicable (contains no original analytical data)

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9	Final Decision Document for Installation Restoration Program Site OT 029 Category III No Further Remedial Action Planned B-204 Beryllium	Mar 1998	Not applicable (contains no original analytical data)
9	Final Site Inspection Report for Operable Unit 9 North Area: Volume 2-Monitoring Location Logs and Completion Diagrams	Apr 1998	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
9	Final PCB Delineation Report for D-2402 and 2403 and Used Transformer Storage Yard	Jul 1998	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
9	South Area OU 9 Final Site Inspection Work Plan Addendum	Sep 1998	Not applicable (contains no original analytical data)
9	Final PCB Removal Work Plan for B-2402 and 2403 and Used Transformer Storage Yard	Dec 1998	Not applicable (contains no original analytical data)
9	Vadose Zone Modeling Technical Memorandum	July 1997	Not applicable (contains no original analytical data)
9	Work Plan for Delineation of PCB-Contaminated Sits	Aug 1997	Not applicable (contains no original analytical data)
9	Final Site Inspection Report for Operable Unit 9 South Area	Oct 1997	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
9	PCB Delineation Report	Dec 1997	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
9	Final Site Inspection Report North Area	Feb 1998	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
9	Draft Remedial Investigation/Feasibility Study Work Plans for Operable Unit 9	Sep 1998	Not applicable (contains no original analytical data)
9	Draft PCB Removal Report for Buildings 2402&2403, and the Used Transformer Storage Area	Apr 1999	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
5, 9	RI & FS WP's for OU 9 and OU 5	May 1999	Not applicable (contains no original analytical data)
9	Draft Remedial Investigation/Feasibility Study Work Plans for Operable Units 5 and 9	May 1999	Not applicable (contains no original analytical data)
9	Revised Final Site Inspection Report for Operable Unit 9 North Area	Aug 1999	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
9	PCB Removal Report for Buildings 2402 &2403 and the Used Transformer Storage Yard	Oct-1999	Data entered into EIMS in IRPIMS-compatible format by contractor
9	Site Inspection Report for Operable Unit 9 North Area Volume 1 - Report and Appendices A-E	July-2000	Data entered into EIMS in IRPIMS-compatible format by contractor
Basewide	Installation Restoration Program Phase I - Records Search	Jan 1982	Not applicable (contains no original analytical data)
Basewide	Phase II Confirmation/Quantification Stage 1 Final Report	1984	Not applicable (contains no original analytical data)
Basewide	Installation Restoration Program IIB - IRP Survey Final Report	Sept 1984	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
Basewide	Phase II Confirmation/Quantification Stage 2 Technical Operations Plan	1986	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
Basewide	Installation Restoration Program Phase II - Confirmation/Quantification Stage 2, Final Report (14 volumes), Hill AFB, Utah	July 1988	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
Basewide	Environmental Restoration Management Action Plan 1999	Feb-2000	Not applicable (contains no original analytical data)
Basewide	CERCLA Cap System Workplan	Apr-2000	Not applicable (contains no original analytical data)

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Operable Unit	Title	Date	EIMS and IRPIMS Status
Basewide	CERCLA Cap System Inspection, Operation and Maintenance Quality Control Plan	Jun-2000	Not applicable (contains no original analytical data)
Basewide	HAFB CERCLA Cap System Inspection, Operation and Maintenance Site Specific Health and Safety Plan	Jul-2000	Not applicable (contains no original analytical data)
Basewide	CERCLA Cap System Inspection, Operation and Maintenance Workplan	Jul-2000	Not applicable (contains no original analytical data)
Basewide	Calendar Year 2000 Basewide Groundwater Monitoring Work Plan	Aug-2000	Not applicable (contains no original analytical data)
LTM	Internal Draft Work Plan US Air Force Installation Restoration Program Remedial Investigation/Feasibility Study for Little Mountain Sludge Drying	May 1988	Not applicable (contains no original analytical data)
LTM	Final Preliminary Assessment Report for Explosive Ordnance Disposal Pit at Utah Test and Training Range, Utah	Apr 1989	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
LTM	Remedial Investigation Report Internal Draft US Air Force Installation Restoration Program Site Inspection/Remedial Investigation/Feasibility	Apr 1989	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
LTM	Final Remedial Investigation Report for Little Mountain Sludge Drying Beds Site at Hill AFB, Utah	May 1990	Not applicable (contains no original analytical data)
LTM	Little Mountain test Annex Sludge Drying Beds Work Plan	Jun 1999	Not applicable (contains no original analytical data)
UST	Intrinsic Remediation Engineering Evaluation / Cost Analysis Addendum for UST Site 870	Sep-1999	Not applicable (contains no original analytical data)
UST	Site 914 Monitoring Report	Nov-1999	EIMS/IRPIMS status unknown
UST	Corrective Action Plan Monitoring Report for UST Site 870 (IRP Site Code ST61, DERR Site Code EGSS)	Apr-2000	EIMS/IRPIMS status unknown
UST	Underground Storage Tank Monitoring Report Sites 1102, 1141, 1286, 1313, 1314, 1705, 40002, and FTA-2 Volume 1	Apr-2000	EIMS/IRPIMS status unknown
UST	Underground Storage Tank Monitoring Report Sites 1102, 1141, 1286, 1313, 1314, 1705, 40002 and FTA-2 Volume 2	Apr-2000	EIMS/IRPIMS status unknown
UST	Site 914 Monitoring Report	Apr-2000	EIMS/IRPIMS status unknown
UST	Site 914 Monitoring Report	May-2000	EIMS/IRPIMS status unknown
UST	Building 43 Bioventing System Installation Summary Report	May-2000	EIMS/IRPIMS status unknown
UST	Statement of Concurrence With No Further Response Action Planned (NFRAP), Building 1314 (St 85) Underground Storage Tank (UST)	Sep-2000	EIMS/IRPIMS status unknown
UST	UST Site 40002 (ST79; EHVU) Data Summary Report	Sep-2000	EIMS/IRPIMS status unknown
UTTR - South Area	South Area Preliminary Assessment Report	Apr 1994	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor

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Operable Unit	Title	Date	EIMS and IRPIMS Status
UTTR - North Area	North Area PA/SI Report	July 1995	Data of appropriate quality loaded into EIMS in IRPIMS-compatible format by contractor
Wendover	Petroleum Storage Area Investigation Work Plan Wendover AFAF Utah Test and Training Range	Dec-1999	Not applicable (contains no original analytical data)
Wendover	Site Inspection Work Plan for the Wendover Air Force Auxilliary Field Range-Nevada	Dec-1999	Not applicable (contains no original analytical data)