

F. E. Warren Air Force Base

United States Air Force

F.E. Warren Air Force Base
Wyoming

Five - Year Review
1993-1998



May 1999

F. E. Warren Air Force Base

FIVE-YEAR REVIEW

Final

May 1999

Prepared for:

Air Force Center for Environmental Excellence (AFCEE)
Base Closure Division (AFCEE/ERB)
Brooks Air Force Base, TX 78235-5328

Contract No. F41624-97-D-8021
Delivery Order No. 0008

Prepared by:

T N & Associates, Inc.
1033 North Mayfair Road, Suite 200
Milwaukee, WI 53226

TABLE OF CONTENTS

1.0 INTRODUCTION	1
1.1 Authority	1
1.2 Purpose	1
1.3 Installation Description	1
2.0 OPERABLE UNIT DESCRIPTIONS AND REMEDIAL ACTION OBJECTIVES	6
2.1 OPERABLE UNIT 1	6
2.1.1 Description of Remedy and Remedial Action Objectives	7
2.1.2 Current Status	8
2.1.3 Continuing Operations and Maintenance	9
2.2 OPERABLE UNIT 2	9
2.2.1 Description of Remedy and Remedial Action Objectives	9
2.2.2 Current Status	9
2.2.3 Continuing Operations and Maintenance	10
2.3 OPERABLE UNIT 3	10
2.3.1 Description of Remedy and Remedial Action Objectives	11
2.3.2 Current Status	11
2.3.3 Continuing Operations and Maintenance	11
2.4 OPERABLE UNIT 4	11
2.4.1 Description of Remedy and Remedial Action Objectives	12
2.4.2 Current Status	12
2.4.3 Continuing Operations and Maintenance	12
2.5 OPERABLE UNIT 5	12
2.5.1 Description of Remedy and Remedial Action Objectives	13
2.5.2 Current Status	13
2.5.3 Continuing Operations and Maintenance	13
2.6 OPERABLE UNIT 6	13
2.6.1 Description of Remedy and Remedial Action Objectives	13
2.6.2 Current Status	14
2.6.3 Continuing Operations and Maintenance	14
2.7 OPERABLE UNIT 7	14
2.7.1 Description of Remedy and Remedial Action Objectives	14
2.7.2 Current Status	14
2.7.3 Continuing Operations and Maintenance	15
2.8 OPERABLE UNIT 8	15
2.8.1 Description of Remedy and Remedial Action Objectives	16
2.8.2 Current Status	16
2.8.3 Continuing Operations and Maintenance	17
2.9 OPERABLE UNIT 9	17
2.9.1 Description of Remedy and Remedial Action Objectives	18
2.9.2 Current Status	18
2.9.3 Continuing Operations and Maintenance	19
2.10 OPERABLE UNIT 10	19
2.10.1 Description of Remedy and Remedial Action Objectives	19
2.10.2 Current Status	19
2.10.3 Continuing Operations and Maintenance	20

TABLE OF CONTENTS (Continued)

3.0 AREAS OF NONCOMPLIANCE	20
4.0 RECOMMENDATIONS	20
5.0 NEXT FIVE-YEAR REVIEW	20
6.0 STATEMENT OF PROTECTIVENESS	21
7.0 REFERENCES	22

LIST OF FIGURES

Figure 1 F.E. Warren AFB Location Map	2
Figure 2 Locations of spill sites, landfills, and other site on F.E. Warren AFB	4

LIST OF TABLES

Table 1 Operable Unit Designation	3
Table 2 Zone Designation	5

ACRONYM LISTING

AF	Air Force
ADW	Acid Dry Well
AFB	AF Base
AFCEE	AF Center for Environmental Excellence
AFSPC	AF Space Command
AOC	Area of Concern
AR	Administrative Record
ARAR	Applicable or Relevant and Appropriate Requirement
AST	Aboveground Storage Tank
BBP	Butylbenzylphthalate
BHC	1,2,3,4,5,6-hexachlorocyclohexane
BRA	Baseline Risk Assessment
BTEX	Benzene, Toluene, Ethylbenzene, and Xylene
BX	Base Exchange
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERFA	Community Environmental Response Facilitation Act
CFR	Code of Federal Regulations
COC	Contaminant of Concern
CRP	Community Relations Plan
CSM	Conceptual Site Model
CWA	Clean Water Act
cy	Cubic Yards
DCE	Dichloroethylene
DD	Decision Document
DDT	Dichlorodiphenyltrichloroethane
DOD	Department of Defense
DRC	Dispute Resolution Committee
ECAMP	Environmental Compliance Assessment and Management Program
ECP	Environmental Condition of Property
EE/CA	Engineering Evaluation and Cost Analysis
EPA	Environmental Protection Agency
ERA	Environmental Restoration Account
ERPIMS	Environmental Resources Program Information Management System
ESD	Explanation of Significant Differences
FEW AFB	F.E. Warren Air Force Base
FFA	Federal Facility Agreement
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FPTA	Fire Protection Training Area
FS	Feasibility Study
FY	Fiscal Year
GCL	Geosynthetic Clay Liner
GIS	Geographical Information System
GP	General Plan
HAZMAT	Hazardous Materials
HQ	Headquarters
ICBM	Intercontinental Ballistic Missile
ICOC	Indicator Contaminants of Concern

ACRONYM LISTING (Continued)

IDW	Investigation-Derived Waste
IR	Information Repository
IRA	Interim Remedial Action
IRP	Installation Restoration Program
kg	Kilogram
LF	LF
LTM	Long-Term Monitoring
LTO	Long-Term Operations
MAP	Management Action Plan
MCL	Maximum Contaminant Level
µg/L	Micrograms per Liter
mg/L	Milligrams per Liter
NCP	National Oil and Hazardous Substance Contingency Plan
NEPA	National Environmental Policy Act
NFRAP	No Further Response Action Planned
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
OBODA	Open Burn/Open Detonation Area
OCDD	Octachlorodibenzo-p-dioxin
OU	Operable Unit
OWS	Oil/Water Separator
PA	Preliminary Assessment
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethylene
pCi/L	Picocuries Per Liter of Air
PP	Proposed Plan
ppm	Parts Per Million
QA/QC	Quality Assurance and Quality Control
RA	Remedial Action
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Manager
RRE	Relative Risk Evaluation
SAC	Strategic Air Command
SARA	Superfund Amendments and Reauthorization Act
SI	Site Inspection
SVOC	Semi-Volatile Organic Compound
SW	Surface Water
SWRA	Surface Water Risk Assessment
TCDD	Tetrachlorodibenzo-p-dioxin
TCE	Trichloroethylene
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TOC	Total Organic Carbon
TPH	Total Petroleum Hydrocarbons

ACRONYM LISTING (Continued)

TRC	Technical Review Committee
TSCA	Toxic Substances Control Act
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
VAC	Volatile Aromatic Compound
VHOC	Volatile Halogenated Organic Compound
VOC	Volatile Organic Compound
WDEQ	Wyoming Department of Environmental Quality
WSA	Weapons Storage Area

FIVE-YEAR REVIEW
(1993 - 1998)
F. E. Warren Air Force Base, Wyoming
May 1999

1.0 INTRODUCTION

1.1 Authority

F. E. Warren Air Force Base (FEW AFB) conducted this five-year review pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Section 121 (c), National Contingency Plan (NCP), Section 300.430 (f)(ii), and OSWER Directives 9355.7-02 (May 23, 1991) and 9355.7-02A (July 26, 1994). This five-year review is limited to those sites being remediated under CERCLA.

1.2 Purpose

The purpose of this five-year review is to ensure that remedial actions selected in the Records of Decision (RODs) for Operable Units (OUs) 1 through 10 remain protective of public health and the environment and are functioning as designed. Final remedies have not been selected for OUs 2, 3, 6, 7, 8, 9, and 10; however, descriptions are provided herein to identify their status in the Remedial Investigation/Feasibility Study (RI/FS) portion of the CERCLA process. The mandatory five-year review of the construction of an Interim Remedial Action at OU 4 in 1992 has triggered this review. This is a statutory review and is considered a Type Ia review.

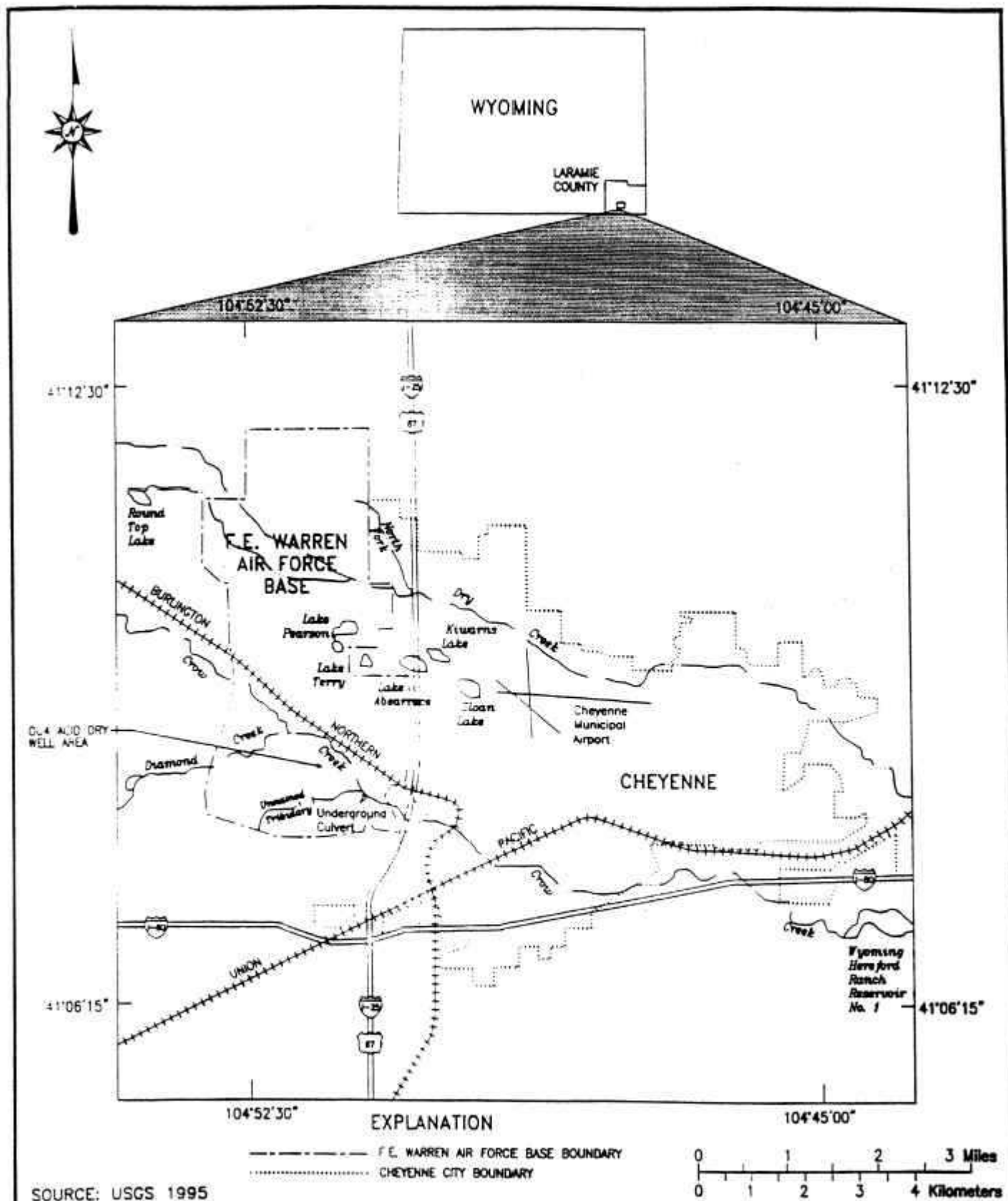
1.3 Installation Description

Fort D.A. Russell was established by the Army in 1867, and was renamed F. E. Warren in 1930. The Air Force assumed control of FEW AFB in 1947, and the Strategic Air Command assumed jurisdiction of the base in 1958. As a current Space Command (SPACECOM) base, FEW AFB provides operational, maintenance, and security support for Minuteman III and Peacekeeper missile programs.

FEW AFB is located in southeast Wyoming, adjacent to the city of Cheyenne. The main base covers approximately 5,866 acres and is situated within the High Plains section of the Great Plains physiographic province. Figure 1 shows the base location.

FEW AFB is underlain by the Tertiary Ogallala Formation, with a maximum thickness of 300 feet in the northern part of the installation, thinning to approximately 30 feet in the south along deeply eroded valleys. Quaternary sediments rarely exceeding 25 feet in thickness overlay the Ogallala Formation. These two formations comprise the High Plains Aquifer. Depth to groundwater varies from 5 to 30 feet below ground surface.

The steppe climate is typical of semiarid grassland prairie. Typical seasons are cool, moist springs; warm, moist summers; and cold, dry winters. Weather is greatly affected by the Laramie Mountain Range 25 miles west of Cheyenne. Average yearly precipitation is 12 - 16 inches, 70 percent of which falls from April through September. Northwest prevailing winds average 13 miles per hour.



F.E. Warren Air Force Base
Cheyenne, Wyoming

JULY 1998

Figure 1
F.E. Warren AFB Location Map

In February 1990, FEW AFB was placed on the National Priorities List (NPL) under CERCLA by the United States Environmental Protection Agency (EPA). A Federal Facility Agreement (FFA) was signed in September 1991 and finalized in December 1991. There are ten OUs defined by the FFA. Each OU encompasses one or more hazardous waste sites and facilitates administration of the CERCLA process. Figure 2 shows the locations of OUs at FEW AFB. Table 1 provides a summary of the OU designations. Future comprehensive RI/FS activities at FEW AFB will be conducted in zone, as indicated in Table 2. the OUs were grouped into Zones A through E to facilitate the base-wide environmental investigations. These zone designations were developed as a technical management tool to organize each OU site based on type, location, and impacted environmental media.

Site ST-019, installation-wide underground storage tanks (USTs), was not included as part of the ten OUs because it is being addressed under FEW AFB compliance programs. No final remedies have been established for the installation-wide USTs.

TABLE 1

OPERABLE UNIT DESIGNATIONS

Source: Management Action Plan, 1999

F.E. Warren Air Force Base, Wyoming

Operable Unit (OU)	Sites Addressed By ID And Name	
OU 1*	SS-001	Spill Site 1
	SS-002	Spill Site 2
	SS-003	Spill Site 3
	SS-004	Spill Site 4
	SS-005	Spill Site 5
	SS-006	Spill Site 6
	SS-007	Spill Site 7
OU 2	OT-021	Installation Groundwater, Surface Water, and Stream Sediments
OU 3	LF-012	Landfill (LF) 3
	LF-015	LF 6
OU 4*	OT-017	Acid Dry Wells
OU 5*	FT-009	Fire Protection Training Area (FPTA) 2
OU 6	OT-020	Open Burn/Open Detonation Area
OU 7	OT-018	Firing Ranges
OU 8	LF-014	LF 5
OU 9	LF-011	LF 2
	LF-013	LF 4
OU 10	FT-008	FPTA 1
	LF-016	LF 7

* No Further Remedial Action Planned (NFRAP) RODs have been signed for OUs 1, 4, and 5. The NRFAP RODs are limited to soil contamination and do not address groundwater issues.

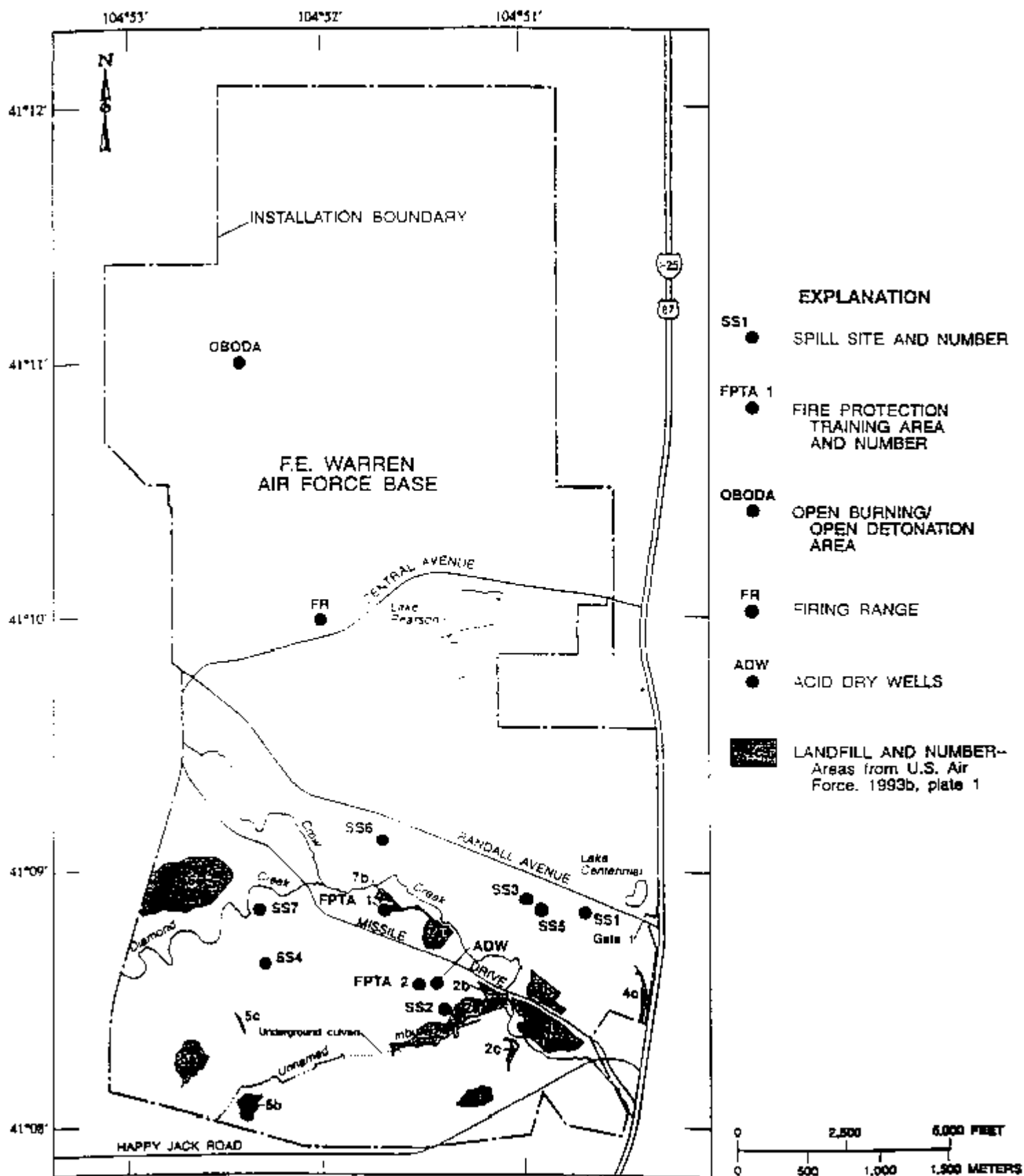


Figure 2.—Location of spill sites, landfills, and other sites on F.E. Warren Air Force Base.

TABLE 2

ZONE DESIGNATIONS

Source: Management Action Plan, 1999
F.E. Warren Air Force Base, Wyoming

Zone	Sites Addressed By ID And Name	
A	LF-015	LF 6
B	LF-014	LF 5
C	LF-012	LF 3
D1	SS-004*	Spill Site 4
	SS-007*	Spill Site 7
	OT-021	Groundwater Trichloroethylene (TCE) Plume A
D2	FT-008	FPTA 1
	FT-009*	FPTA 2
	LF-016	LF 7
	OT-017*	Acid Dry Wells
	OT-021	Groundwater TCE Plumes B and C
D3	SS-002*	Spill Site 2
	LF-011	LF 2
	OT-021	Groundwater TCE Plumes D and E
E	SS-001*	Spill Site 1
	SS-003*	Spill Site 3
	SS-005*	Spill Site 5
	SS-006*	Spill Site 6
	LF-013	LF 4
	OT-018	Firing Ranges
	OT-020	Open Burn/Open Detonation Area

* NFRAP RODs have been signed for these sites. However, groundwater at these sites will be investigated as part of the comprehensive zone strategy for FEW AFB.

2.0 OPERABLE UNIT DESCRIPTIONS AND REMEDIAL ACTION OBJECTIVES

2.1 Operable Unit 1

Operable Unit 1 is comprised of Spill Sites (SS)-001 through SS-007. Most of the sites are relatively small areas that are associated with past activities in a nearby building. The following is a summary of the spill sites:

- **SS-001.** SS-001 is a gasoline station. It is located near the main entrance of the installation, south of Randall Avenue, approximately one-third of a mile north of Crow Creek. Leaking leaded gasoline from USTs has impacted soils and groundwater. Waste oil was released from an above-ground storage tank (AST) to shallow soils. Other potential sources of soil and groundwater contamination in this area include underground waste oil, gasoline storage tanks, and associated piping.
- **SS-002.** SS-002 is a waste accumulation point located south of the vehicle maintenance facility (Building 810), approximately one-quarter mile west of Crow Creek. Water mixed with hydraulic fluid and waste motor oil was discharged to the ground from thirty 55-gallon drums in 1983. Waste oil in ASTs and drums are located at this site.
- **SS-003.** SS-003 is a spill site associated with a battery shop in Building 338. Approximately 150 gallons of battery acid were discharged to the ground west of the building in 1980. Battery acid was also disposed in two dry wells adjacent to the building. Corroded drains in Building 338 enabled acid to contaminated surrounding soils.
- **SS-004.** SS-004 is a waste storage area associated with the former Atlas missile maintenance shop. It is located approximately 300 yards south of Diamond Creek. Drums of oil and solvents were historically stored within a concrete containment berm located east of the building. In 1982, 15 to 20 gallons of TCE was spilled from a drum.
- **SS-005.** SS-005 is a fenced waste accumulation point located east of Building 336 along 15th Cavalry Avenue. Waste oil and antifreeze was stored in ASTs and waste oil drums. Surface soil staining indicates numerous historical spills.
- **SS-006.** SS-006 is a waste accumulation point located between Buildings 315 and 316. The area received numerous small spills of solvents, fuels, motor oils, and battery acid. Soil and groundwater contamination was also detected in the courtyard located between Buildings 314 and 315.
- **SS-007.** SS-007 is the site of a grease trap that was used to dispose of spent solvents generated from operations conducted in Building 4000 (currently part of Building 1294). TCE was extensively used in Building 4000 as a degreaser. TCE spills entered a floor drain and followed to the grease trap. The grease trap then overflowed, contaminating soil and groundwater. TCE has been detected in Diamond Creek, which is located approximately 600 feet north of the former grease trap location.

2.1.1 Description of the Selected Remedy and Remedial Action Objectives

Removal actions and interim remedial actions (IRAs) were implemented at SS-001, SS-002, SS-004, and SS-007. Soil contamination at the spill sites was investigated under the U.S. Department of Defense's Installation Restoration Program (IRP) from 1985 to 1990, and again from 1992 to 1993 under the current CERCLA remedial investigation. A Baseline Risk Assessment (BRA) addressing soil constituents only, was performed as part of the RI/FS. The BRA consisted of human health and ecological risk assessments including: the identification of contaminants of concern, exposure assessments, toxicity assessments, risk characterization, and uncertainty analysis. The BRA demonstrated no significant risk to human health or the environment was present from the contaminants found in the soil at OU 1. A NFRAP ROD for soils at OU 1 was signed on September 12, 1995. Groundwater contamination issues at the spill sites will be investigated as part of the comprehensive zone strategy now being implemented at the base.

The following is a brief summary of the IRA and RI/FS activities at each spill site:

SS-001. Leaking storage tanks at SS-001 were removed in 1989 and 1990. Contaminants of concern (COCs) identified in surface soils (upper 0.5 foot) were cobalt, lead, and zinc. Subsurface soil COCs include benzene, tetrachloroethene (PCE), xylenes, 2-methylnaphthalene, naphthalene, ethylene glycol, aluminum, chromium, cobalt, vanadium and zinc. In addition, TPHs were detected in concentrations ranging from 22 to 22,000 mg/kg in subsurface soils. A small-scale bioventing facility was operated at SS-001 from 1992 to 1996, primarily as a test and evaluation project. No unacceptable non-carcinogenic risks associated with SS-001 were identified. Unacceptable future health risks associated with inhalation of hexavalent chromium were identified; however, the risk assessment is considered overly conservative since it is unlikely that 100% of the total chromium detected is hexavalent chromium. No adverse ecological effects associated with SS-001 soil contaminants were identified.

Groundwater contaminants exceeding federal drinking water maximum contaminant levels (MCLs) included benzene (110 µg/L), xylenes (1,900 µg/L), TCE (9.6 µg/L), and chloroform (9.6 µg/L).

SS-002 Investigations between 1987 and 1989 revealed soils contaminated with TPH; no VOCs were detected. No unacceptable health or ecological risks were found to be associated with soil contaminants at SS-002. Groundwater contaminants above the federal drinking water MCLs included benzene (5.4 µg/L), TCE (1.2 to 200 µg/L) and 1,2-dichloroethene (1,2-DCE) (6.8 and 16 µg/L).

SS-003 The 1992 RI identified aluminum, chromium, lead, nickel, vanadium, and zinc as subsurface soil COCs; however no unacceptable health or ecological risks were found to be associated with these contaminants. Groundwater samples were collected from wells installed in 1987 and 1990. No groundwater VOC or SVOC contamination was identified; however, further groundwater characterization activities are planned.

SS-004 In 1984, approximately 530 cubic yards of TCE-contaminated soil were removed from this site. Soil samples collected in 1987, 1992, and 1993 revealed no detectable volatile halogenated organic compounds (VHOCs), volatile aromatic compounds (VACs), or TPH contamination. Based on the lack of detectable VOCs, the 1984 soil removal action was considered to be successful. Chromium and lead were detected in soil samples at maximum concentrations of 18.2 and 152 mg/kg, respectively. Chromium was the only identified carcinogenic COC identified at SS-004. Inhalation exposure to particulates from surface and subsurface soils were determined to be within or below the CERCLA

lifetime cancer target risk range. No unacceptable health risk was identified with non-carcinogens. No adverse ecological effects associated with soil contaminants were identified at this spill site.

Groundwater at SS-004 was contaminated by TCE (1.1 to 130 µg/L), chloroform (5.8 to 21 µg/L), 1,1-DCE (3.1 to 9.3 µg/L), and 1,2-DCE (5.1 to 65 µg/L) at concentrations above the federal drinking water MCLs. A TCE groundwater plume migrated to SS-004 from a hydraulically upgradient source. TCE was detected at relatively low concentrations at depths greater than 30 feet.

SS-005. Surface soil samples collected in 1987, 1988, 1992, and 1993 identified limited TPH contamination (up to 421 mg/kg). No inorganic COCs were identified in surface or subsurface soils during the 1992 RI. No unacceptable health or ecological risks were found to be associated with contaminants in soils at SS-005. Groundwater samples from five wells associated with the site identified VOCs including TCE, carbon tetrachloride, toluene, and total xylenes at concentrations **below** the federal drinking water MCLs.

SS-006. The 1992 RI identified COCs in surface soil including bis (2-ethylhexyl) phthalate, PCE, TCE, xylenes, TPH, pesticides, cadmium, lead, and zinc. Subsurface soil COCs included PCE, 2-methylnaphthalene, ethylene glycol, pesticides, aluminum, beryllium, cadmium chromium, and cobalt. No unacceptable health or ecological risks were found to be associated with contaminants in soils at SS-006. VOCs detected in groundwater included 1,1,1-trichloroethane (1,1,1,-TCA) and PCE at concentrations below the respective federal drinking water MCLs. Chloroform was detected at 9.5 µg/L, a concentration above the federal drinking water MCL for chloroform.

SS-007. In 1989, the grease trap, sludge, and surrounding contaminated soil was removed and disposed at an off-base RCRP waste facility. The OU 1 RI conducted in 1992 identified low-level residual soil contaminants including arsenic (5 mg/kg), beryllium (1.2 mg/kg), chromium (35.2 mg/kg), and TCE (0.36 mg/kg). At SS-007, under current exposure scenarios, no pathways were associated with cancer risks in excess of 10^{-6} from surface soils. The mid-range cancer risk estimated for the adult workers by ingestion is 7×10^{-9} , and the reasonable maximum exposure (RME) cancer risk is 3×10^{-7} . The bulk of these risks are associated with exposures to (hexavalent) chromium and arsenic. Cancer risks associated with future exposure scenarios (subsurface soil exposure) were considered to be substantially overestimated due to the assumption of 100% hexavalent chromium. No noncancer adverse effects were predicted to occur under current scenarios. No adverse ecological impacts associated with SS-007 soil contaminants were identified.

Extensive groundwater sampling identified TCE (9,900 µg/L), 1,2-DCE (73 µg/L), and chloroform (26 µg/L) at concentrations exceeding the federal drinking water MCLs. TCE was detected at concentrations up to 19 µg/L in Diamond Creek surface water.

2.1.2 Current Status

The NFRAP ROD for soils in OU 1 was signed on September 12, 1995. The NFRAP decision addresses soil contamination only. The decision does not consider potential impacts to groundwater from low-level or residual contamination remaining in the soil at the spill sites. Additional soil actions may be required to complete groundwater remediation beneath the spill sites. These additional soil actions may be addressed as part of the comprehensive zone strategy as discussed below. The 1994 OU 1 RI Report recommended additional groundwater investigation at SS-001 through SS-007, excluding SS-002,

particularly to determine the horizontal and vertical extent of the TCE plume(s). In addition to the groundwater investigation, surface water and streambed investigations are planned.

2.1.3 Continuing Operations and Maintenance

The NFRAP ROD implemented for soils at OU 1 requires no further operation and maintenance. Presently, no remedial action systems for groundwater or surface water are operating within OU 1.

2.2 OPERABLE UNIT 2

OU 2 is comprised of the shallow groundwater aquifer beneath all remaining OUs at FEW AFB, along with any receiving surface water bodies proximal to the installations. In addition, stream bed deposits are included in OU 2.

Groundwater at the base is present in unconsolidated Quaternary deposits and the underlying Upper and Lower Ogallala Aquifer. Together, these water-bearing strata are referred to as the High Plains Aquifer. The upper aquifer, designated as IRP Site OT021, consists of the upper 30 feet of the High Plains Aquifer and includes the saturated Quaternary deposits. The Lower Aquifer consists of water-bearing units at depths greater than 30 feet and extending beyond 300 feet below the ground surface.

Groundwater, surface water, and stream bed contamination is associated with OUs 1, 4, 5, 9, and 10. Identified sites of contamination include: SS-001 through SS-007; TCE plumes A through E; LFs 2, 4, and 7; Acid Dry Wells; and FPTAs 1 and 2. No assessment has been performed on the lower aquifer.

2.2.1 Description of Remedy and Remedial Action Objectives

OU 2 is currently in the RI/FS stage. The potential COCs for OU 2 include: VOCs from solvents, fuel, pesticides, and oils; polychlorinated biphenyls (PCBs) from hydraulic fluids and oils; glycol compounds from antifreeze; dioxins; and metals from solvents, paint, waste oil, fuel, and ash. The degree and extent of contamination will be determined in the RI.

Groundwater, surface water, and stream bed remedial investigations will be conducted as described under the comprehensive zone strategy for the base.

A treatability study for groundwater was implemented at SS-007 in 1992. A groundwater extraction system with water treatment by air stripping was operated from April 1995 to March 1996. The system was deemed ineffective for remediating the contaminated groundwater beneath this site and was turned off in 1996. An IRA ROD is currently in place for SS-007 groundwater, and is discussed below.

2.2.2 Current Status

An RI/FS of OU 2 is scheduled for 2001. The comprehensive groundwater investigation for the entire base has been separated into three zones (See Table 2). Zone D1 will include investigation of groundwater at SS-004, SS-007, and Plume A. Zone D2 will include investigation of groundwater at FPTA 1 and 2, LF 7, Acid Dry Well Area, and Plume B and C. Zone D3 will include investigation of groundwater at LF 2, SS-002, and Plumes D and E.

The current status of each remedial system in OU2 is given below:

SS-007. An IRA ROD for installation of a passive iron filings reaction wall at SS-007 was signed on October 10, 1997. The IRA Objectives as stated in the ROD are:

- Minimize the potential for ingestion, inhalation, and dermal exposure to groundwater indicator contaminants of concern (ICOCs) by reducing levels to MCLs in the first 15 feet of the water table.
- Minimize contaminant loading to Diamond Creek from the SS-007 shallow groundwater by reducing groundwater ICOC levels to MCLs in the first 15 feet of the aquifer.

A draft Environmental Cleanup Plan (ECP) was submitted for agency review, in January 1999. The reaction wall is a subsurface installation that will intercept contaminated groundwater flowing towards Diamond Creek. Groundwater will flow through the reactive wall under natural gradients. Dechlorination and other reaction within the wall result in reduced contaminant levels in groundwater on the downgradient side of the wall. Groundwater monitoring will be performed and a spill and discharge control plan will be implemented as part of the IRA design. Installation of the passive iron filings wall is scheduled to begin in the Spring of 1999.

SS-003 and SS-005. A groundwater sampling plan was approved for SS-003 and SS-005 in February 1999. Groundwater samples collected in March and August 1999 will be analyzed for VOCs, SVOCs, and metals. Future groundwater monitoring requirements will be evaluated after the 1999 sampling rounds.

Acid Dry Well Area. A groundwater sampling plan for the Acid Dry Well Area (see Section 2.4) was approved in February 1999. Groundwater samples collected in March and September 1999, and March 2000 will be analyzed for sulfate to evaluate potential sulfate leaching from residual soil sources to groundwater. The need for additional groundwater monitoring at the Acid Dry Well area will be evaluated in the year 2000.

2.2.3 Continuing Operations and Maintenance.

At present, there are no remedial action systems operating in OU 2.

2.3 OPERABLE UNNIT 3

OU 3 is comprised of LF 3 and LF 6.

LF 3. LF 3 consists of approximately 7 acres located in the southern portion of the Installation, approximately 300 feet east of the base housing complex. General refuse and base shop wastes such as solvents, paint, and batteries were disposed in LF 3 from the mid-1950's through the mid-1960's. A shallow groundwater TCE plume was identified downgradient from LF 3 toward Crow Creek. The plume has moved off base to the northern tip of the Nob Hill subdivision, threatening private water supply wells located in that area.

LF 6. LF 6 covers approximately 41 acres. The general boundaries of LF 6 are Roundtop Road on the west side, Crow Creek on the north side by Diamond Creek on the south side, and by the confluence of Crow and Diamond Creeks on the east side. Past waste disposal practices at LF 6 included refuse disposal from FEW AFB housing and ships from 1971 until 1984. From 1984 to 1989, the LF received coal ash/fly ash from the FEW AFB coal-fired steam plant. The materials disposed in LF 6 are similar to the disposed materials in LF 3 and also waste oil, hydraulic fluid, ethylene glycol, silicone oil, battery

acid, pesticides, paints, asbestos, and waste JP-4 jet fuel. The primary COCs at LF 6 are TCE and other VOCs in groundwater. Inorganic contaminants include chloride and nitrate in groundwater. TCE has been detected at concentrations up to 18 µg/L. The groundwater flow direction from LF 6 is generally from west to east towards the confluence of Crow and Diamond Creeks. A TCE plume appears to be migrating in a northeasterly direction from LF 6 towards Crow Creek.

2.3.1 Description of Remedy and Remedial Action Objectives

LF 3. This landfill is in the RI stage. An IRA ROD for groundwater contamination associated with LF 3 was signed February 1996, providing a water line extension from the city of Cheyenne water supply system to the Nob Hill Subdivision to reduce exposure to the TCE in private potable wells. The water line extension was completed in June 1997. The city of Cheyenne is responsible for maintenance of the water pipeline and the water supply.

LF 6. An IRA ROD for LF 6 was signed in January 1996 for capping and installing an active vent system for methane. A Proposed Plan for a ROD amendment was provided to the public in November 1997. An Explanation of Significant Differences (ESD) was prepared in November 1997 to modify the planned cover to include evapotranspiration technologies and eliminate the gas venting system. The ESD was not approved and a formal dispute was initiated on the 100% design. Subsequent to resolution of the dispute, an ESD was signed to in March 1998. The ESD provided that a passive gas venting system would be used rather than an active gas venting system. In addition, the ESD provided that a geosynthetic clay liner cap would be used rather than an evapotranspiration cover.

Groundwater issues associated with both LF 3 and LF 6 are being addressed within response actions for OU 3, rather than OU 2.

2.3.2 Current Status

LF 3. The Air Force will approach further investigation and cleanup of soil, groundwater, and surface water at LF 3 as part of the comprehensive RI/FS for Zone C. A Comprehensive RI Work Plan for Zone C is being developed. The RI field work at LF 3 is scheduled to begin in April 1999. Pending receipt of data from the remedial investigation, a Non-Time-Critical Removal Action is planned as a presumptive remedy cap installation (scheduled to begin in December 2000).

LF 6. The GCL cap and venting system at LF 6 are to be installed beginning in spring 1999 with completion by December 1999. A comprehensive Zone RI/FS for LF6 (Zone A) began in June 1998. The revised draft RI/FS work plan was submitted on August 28, 1998.

2.3.3 Continuing Operations and Maintenance

The IRA ROD implemented at the Nob Hill Subdivision consisted of installing a new water line to service this residential area. No other remedial actions are in operation at either LF 3 or LF 6 at this time.

2.4 OPERABLE UNIT 4

OU 4 is comprised of three former acid dry wells each six-feet deep concrete pits, located west of Building 826. Between 1962 and 1986, waste battery acid was drained from the sinks in Building 826 to

the acid dry wells each day. The practice of neutralizing the acid before it was drained was not used until 1977.

The primary COCs are sulfate and metals, including lead. Lead concentrations in soil were found to range from 50 mg/kg (in one sample) to 8 mg/kg or less during a 1987 initial RI. Sulfate was the primary analyte detected in soil samples during the 1992 RI. Sulfate concentrations in 131 soil samples ranged from 6.2 to 7,250 mg/kg.

2.4.1 Description of Remedy and Remedial Action Objectives.

Historical interim remedial and removal actions completed at OU 4 are:

- The acid dry wells and associated structures were removed in April 1986
- More than 500 tons of contaminated soil were removed for proper RCRA disposal to an industrial waste disposal site in Utah in November 1986
- Area was backfilled with uncontaminated soil and covered with gravel

A BRA completed in conjunction with the 1992 RI concluded that sulfate and low-level metals in soil and groundwater at OU 4 posed no significant threat to human health or the environment. A ROD for OU 4 was signed in December 1992, specifying no further action for the soil at the site. Similar to the NFRAP RODs for OU 1, this ROD addresses only soil issues and does not consider potential contributions of residual soil contaminants to ongoing groundwater degradation. The ROD calls for on-going groundwater monitoring to ensure continued protection of human health and the environment.

The remedial action objective for OU 4 include the following:

- To verify that sulfate is not leaching from soil to the groundwater at concentrations that exceed the MCL (250 mg/L) and Wyoming groundwater protection standards (200 mg/L for agricultural use and 250 mg/L for domestic use).

2.4.2 Current Status

A groundwater sampling plan was approved for OU 4 in February 1999 and will be implemented in March 1999. The sampling plan consists of biannual groundwater monitoring of six downgradient wells and one upgradient well to the Acid Dry Well Area. If sulfate concentrations in all wells decrease with successive sampling, or are not detected for two successive rounds, a review of the monitoring program scope will be conducted to determine if monitoring should continue. If results show sulfate leaching into groundwater above protection standards, appropriate actions to mitigate leaching will be developed.

2.4.3 Continuing Operations and Maintenance

Evaluation of the sulfate concentrations in the groundwater will continue until a final decision is made about its impact.

2.5 OPERABLE UNIT 5

OU 5 consists of FPTA 2.

FPTA 2 is located in the south-central part of the base between Omaha and Missouri Avenues. Bi-weekly fire training exercises were held from 1965 to 1989. Bermed areas were filled with 300-400

gallons of flammable liquid, ignited, and extinguished. Runoff from this site drains to Crow Creek, which is located approximately 1,000 feet northeast of the site.

2.5.1 Description of Remedy and Remedial Action Objectives

The RI for FPTA 2 occurred in 1987 and 1988. Soil COCs identified in the RI include VHOCS, VACs, TPH, and lead. Groundwater COCs identified in the RI include TCE, detected in an upgradient monitoring well. It is believed to be part of Plume C that has migrated from another location on the base. No significant amounts of substances historically used at OU 5 were identified in the groundwater. Based on the results of the RI, no current or potential threat to human health or the environment appears to be present.

A NFRAP ROD for soils at OU 5 was signed on January 27, 1995. Similar to the NFRAP RODs signed for OU 1 and OU 4, this decision addresses only soil contamination at OU 5 and does not consider potential contributions of residual soil contaminants to ongoing groundwater degradation. Additional soil-related responses may be required to protect groundwater resources in this area. Groundwater contamination issues will be addressed as part of the comprehensive Zone D2 RI, currently programmed for fiscal year (FY) 2001.

2.5.2 Current Status

A NFRAP ROD for soils was signed on January 27, 1995. Groundwater was not addressed in the ROD and will be further evaluated during the comprehensive Zone D2 RI, currently programmed FY 2001.

2.5.3 Continuing Operations and Maintenance

The NFRAP ROD implemented for soils at OU 5 requires no further operation and maintenance.

2.6 OPERABLE UNIT 6

OU 6 consists of an Open Burn/Open Detonation Area (OBODA).

The OBODA is located within the former north artillery range on 15 acres in the northwestern part of the installation. OU 6 consists of a 400-foot diameter circular area cleared of vegetation. Ordnance material including dynamite and C4 plastic explosives were wetted with diesel fuel and burned in open pits within the circular area three times per year. The pits were periodically backfilled, and new pits excavated. The OBODA was in operation from the early 1960s until 1990. Six other smaller circular areas have been identified west of the known OBODA in historical aerial photographs. These smaller circular areas have not been investigated.

2.6.1 Description of Remedy and Remedial Action Objectives

OU6 is in the RI/FS stage. The initial RI identified petroleum hydrocarbons in shallow soils generally ranging from 5 to 28 mg/kg (maximum concentration detected was 579 mg/kg). Waste characterization sampling using the toxicity characteristic leaching procedure (TCLP) revealed lead in one sample at 6.3 mg/L. The detected lead leachate concentration is considered hazardous under RCRA. No other characteristically hazardous constituents were identified. Groundwater COCs include chromium (up to 110 µg/L) and lead (up to 21 µg/L). These groundwater constituents exceed the federal drinking water

MCLs: the chromium concentration exceeds the Wyoming groundwater quality standard for domestic and livestock use.

A BRA scoping document for OU 6 was submitted for agency review in July 1998. A comprehensive Zone RI/FS for Zone E is scheduled to begin in fiscal year 2001.

2.6.2 Current Status

OU 6 is a restricted fence-enclosed area.

Further investigation is needed to determine the extent of identified TPH and metals contamination in soil and groundwater at the site. Aerial photographs suggest that other open burn/open detonation areas used prior to 1980 have not been evaluated. The site will be further characterized during the comprehensive Zone E RI currently planned for fiscal year 2001.

2.6.3 Continuing Operations and Maintenance

At present, there is no remedial action system operating at OU6. The OBODA pits are located within a restricted area, posted and surrounded by a fence with locked gates. Fence and posted notice maintenance are the responsibility of the USAF.

2.7 OPERABLE UNIT 7

Operable Unit 7 consists of a firing range located in the northwest part of the installation, near OU 6.

The 53 acre firing range, OU 7, located approximately one-half mile west of Lake Pearson and approximately three-quarters of a mile north of Crow Creek. Small arms, cannons, and antitank weapons were fired at the range. The firing range is currently inactive: the exact time period of its operation is unknown. Aerial photographs suggest that other, as yet unevaluated areas of the installation may have been used for firing practice and exercises.

2.7.1 Description of Remedy and Remedial Action Objectives

The initial RI conducted in 1987 identified soil COCs including lead (7.2 to 110 mg/kg). Only limited groundwater sampling has been performed at this OU. Analytical results show trace elements and common ions below applicable MCLs; however, lead concentrations range up to 6,630 mg/L corresponding to unacceptable human health and environmental risk levels.

The preliminary remedial action objectives for OU 7 include:

- Prevent migration of lead that would result in surface water contamination greater than the Wyoming Human Health Value of 50 µg/l or the Wyoming Aquatic Life Chronic Value of 3.2 µg/l.
- Prevent migration of lead that would result in groundwater contamination greater than greater than the Wyoming Human Health Value of 50 µg/l or the federal MCL of 15 µg/l.

2.7.2 Current Status

OU 7 is currently in a RI planning phase. An RI is scheduled for the year 2001 as part of the comprehensive RI effort for Zone E.

2.7.3 Continuing Operations and Maintenance

At present, there is no remedial action system operating at OU 7.

2.8 OPERABLE UNIT 8

OU 8 consists of LF 5 in the southwest corner of the Installation. LF 5 was part of OU 3 until 1993 when it was designated as OU 8.

LF 5 consists of on approximately 24 acres near the Weapons Storage Area (WSA) in the southwestern corner of the installation. It is divided into three sections each identified as a separate landfill: 1) LF 5a covers 16 acres, directly south of the WSA. 2) LF 5b covers 6 acres, west of the intersection of Cheyenne and Parade Road, and 3) LF 5c covers, 2 acres adjacent to the intersection of Cheyenne and Artillery Roads. Domestic refuse, shop wastes, waste fuels, expired pesticides, ethylene glycol, solvents, waste oil, batteries, and battery acids are some of the wastes reportedly deposited there from 1959 to 1970. Three large burn pits were used at LF 5 for waste volume reduction prior to disposal in trenches.

The initial IRP RI effort for LF 5 was conducted between 1985 and 1989. No soil samples were collected from the site during this early effort. TCE was found in five of six wells at concentrations ranging from 0.1 to 4.1 µg/L. PCE, 1,1,1-TCA, chloroform, and 1,1-DCE were each found in a few wells at concentrations less than 1 µg/L. In 1987, two additional wells were installed in the LF 5 area. Four more wells were installed in 1988.

A total of nine wells from IRP Site LF-014 (LF 5) were incorporated into the quarterly RI groundwater monitoring program conducted from October 1988 to 1993. Samples were tested according to the LF protocol. TCE was reported in three wells at concentrations between 0.73 and 5.4 µg/L. Chloroform was also found in three wells with concentrations up to 14 µg/L. Quarterly monitoring also revealed the relatively high concentrations of nitrates. TDS, chloride, sulfide, and TOC-exceeding the primary and secondary MCLs in several cases. Although nitrates also exceeded the MCL in an upgradient well, inorganic data from the site suggest that a leachate plume originates at LF 5.

A Focused RI was conducted for LF 5 in 1993, with the final report being issued on July 18, 1995; a final Focused FS Report was completed on August 23, 1995. During the focused RI thirty surface soil samples were collected from 27 shallow boreholes at depths of 0-0.5 feet and 1.5-2 feet. Organochlorine pesticides were found in two of the bore holes -4,4'-DDE was present at 0.23 mg/kg and 4,4'-DDT was found at 0.12 mg/kg. No significant VOCs were detected. Inorganic results will be further evaluated after background concentrations are established for the site.

Twenty-seven soil gas samples were also collected for field analysis within and around the perimeter of each LF subunit. Contaminants were detected in a few locations at the site, but only low concentrations were observed. No significant TCE contamination in soil gas was reported. Methane was not detected.

The Focused RI also included installation of 81 temporary test wells: 29 at LF 5a, 38 at LF 5b, and 14 at LF 5c. Low concentrations of TCE (less than 1 µg/L) were found in wells near the easternmost trench at LF 5a, but no plume was identified in this area. TCE was also found at 4.4 µg/L in one eastern well. Several test wells were placed west of LF 5a to determine if TCE might be associated with an upgradient source. TCE was found in one well at 3 µg/L, indicating a small plume of TCE just west of the 5a area.

TCE was also found in several test well samples from LF 5b. Concentrations ranged from 1.9 to 125 µg/L. Cis-1,2-DCE was also found in a few samples between 0.7 and 18 µg/L. These results confirm the presence of a TCE plume east of Cheyenne Road and on both sides of Parade Road. A few test wells were situated to evaluate TCE levels up to 400 feet north and downgradient of LF 5b. TCE was found in these wells at levels around 1 µg/L. Other test wells show that TCE concentrations drop to less than 0.5 µg/L as far east of the site at Mule Deer Road. The plume from LF 5b appears to have dispersed about 1,200 feet downgradient from the site.

No significant TCE contamination was noted in groundwater beneath LF 5c. Specific conductance measurements and anion concentrations, however, indicate the presence of an inorganic plume east of Cheyenne Road and south of Artillery Road. The source of this plume is unknown. The most likely source appears to be underground sewer or water lines in this area; the lines are believed to have been abandoned in place.

Based on test well findings, 25 new shallow, monitoring wells were installed at LF 5 in 1994 and 1995. These wells will be used to monitor groundwater conditions across the site. The TCE plume at LF 5b and the inorganic plume at LF 5c will also be further investigated using these wells.

2.8.1 Description of Remedy and Remedial Action Objectives

LF 5 is in the RI/FS stage. With an IRA recently completed at LF 5a. A draft RI work plan for LF 5 was submitted in January 1997, but was put on hold and will not be implemented. The Air Force has decided to approach further investigation of LF 5 as part of the comprehensive Zone B RI/FS, which began in December 1998.

An IRA ROD for capping LF 5a was finalized on November 21, 1996. The remedial action objective for LF 5a was to minimize infiltration moisture. The remedial action objectives for the selected IRA include:

- Provide protection against direct contact with LF contents hazardous constituents.
- Minimize infiltration and resultant leaching of hazardous constituents to the groundwater.
- Control surface water (both run-on and runoff) and erosion.
- Provide adequate protection to human health from inhalation of contaminant vapors or particulate dust from contaminated soil.

2.8.2 Current Status

An IRA ROD for LF 5a for recontouring, capping, and active gas venting was signed on November 21, 1996. Test pits were excavated April 1997 to determine depth and refine the LF 5a boundary. Soil borings determined cover thickness, identified depth, and materials present.

An Explanation of Significant Differences (ESD) was submitted in January 1998 to document the following design changes:

- Modify LF cap design to consist of a 2-foot deep minimally-compacted cover layer of soil topped by a 6-inch minimum layer of topsoil.
- Eliminate the active gas venting system, which the Air Force determined is not required pursuant to 40 CFR Part 60. A perimeter methane monitoring system will be installed instead.

The EPA and Wyoming Department of Environmental Quality (WDEQ) formally approved the ESD on August 10, 1998.

Construction of the cap began in June 1998 and was completed in December 1998. It included the following steps:

- 29,520 cubic yards of topsoil excavated and stockpiled
- Grade fill and cover soil placed on LF
- Topsoil retrieved and placed on LF and seeding initiated
- Construction of drainage channels and rip-rap basins
- Erosion control reinforcement matting placed along side slopes of LF
- Perimeter fence and restricted access signs installed.

During the final inspection, two deficiencies were found. These were corrected within 10 days. A final Construction Report for the LF 5a LF cover was issued in January 1999.

Non-Time-Critical Removal Actions for LF 5b and 5c are planned to begin in April 2000. Actions may include partial to complete excavation of wastes from LF 5c, possibly for consolidation and capping in LF 5b.

A draft Work Plan for an RI/FS, Proposed Plan and ROD for Zone B was filed for agency review in February 1999 to delineate from the boundaries of LFs 5b and 5c, define the extent of the TCE plume, and to assess the potential risk to human health and the environment.

2.8.3 Continuing Operations and Maintenance

Operation and maintenance of the LF 5a landfill cap, perimeter fence, and methane monitoring system is the responsibility of the USAF. No other remedial action systems are in place at LF 5 at this time.

2.9 OPERABLE UNIT 9

OU 9 consists of LF 2 and LF 4 located in the southern part of the installation.

LF 2. LF 2 is located on 31 acres adjacent to a southern base housing complex, and is divided into three sections: 1) Area 2a, located on both sides of the unnamed tributary to Crow Creek near Old Glory Road; 2) Area 2b, a triangular area bounded by the confluence of Crow Creek and the unnamed tributary; and 3) Area 2c, south of Crow Creek, approximately 1,000 feet east of a housing area. LF 2 was operational from 1918 through 1947 and received various industrial and maintenance wastes generated on base.

Quarterly groundwater monitoring was performed at LF 2 from 1988 to 1993. TCE was the most frequently detected constituent, with concentrations up to 1,000 µg/L. PCE, chloroform, and 1,1,2,2-PCA were also identified. Nitrates, TDS, and manganese were detected in several groundwater samples at concentrations exceeding their respective primary or secondary MCLs. Based on extensive groundwater sampling during a 1993 to 1994 Phase I RI, the Air Force determined that a large TCE plume, originating at an upgradient source unrelated to historical operations at this LF, extends beneath this site and further downgradient.

LF 4. LF 4 is located on approximately 40 acres in the southeast part of the installation, west of Gate 2. It is divided into three sections: 1) Area 4a, 25 acres between Missile Drive and Crow Creek; 2) Area 4b, 11 acres between the Union Pacific railroad tracks and Missile Drive; and 3) Area 4c, 4 acres along Interstate 25 between 15th Calvary Avenue and Missile Drive. It was a trench-and-fill operation from 1947 until 1959. All base refuse was disposed of in LF 4, including domestic and shop wastes.

2.9.1 Description of Remedy and Remedial Action Objectives

LF 2. A draft final Phase II RI Work Plan was completed in January 1997 for further investigation of LF 2; however, this document was placed on hold and will not be completed. The Air Force will accomplish further investigation of groundwater in this area as part of the comprehensive RI/FS effort for Zone D3, currently being programmed for FY 2002.

An Engineering Evaluation/Cost Analysis (EE/CA) was performed for LF 2c in 1997. The original Action Memo was signed March 16, 1998. The Action Memo was revised and signed September 9, 1998 to change the receiving facility for non-hazardous wastes from the Larimer County (Colorado) Municipal Landfill to the North Weld County (Colorado) Sanitary Landfill. Remedial action objectives identified for LF 2c include:

- Reduce the aggregated risk posed by all of the carcinogens and noncarcinogens to acceptable levels
- Prevent migration of contaminants to groundwater
- Prevent inhalation of organic vapors and fugitive dusts posing excess cancer risk or excess reference doses

LF 4. A site-specific Phase I RI was completed for LF 4 in 1993 and 1994, with the final report issued on August 1, 1995. A draft final Phase II RI Work Plan was completed January 1997 for further investigation of the site. The Air Force subsequently decided to investigate soil, surface water, and groundwater at the LF 4 site as part of the Comprehensive RI for Zone E.

2.9.2 Current Status

LF 2. In March 1997, it was determined that LF 2c waste materials were sloughing off into Crow Creek surface waters. An Action Memorandum for a Non-Time Critical Removal Action for LF 2c was signed March 1998. The Action Memorandum documents the Air Force's decision to proceed with total excavation and off-base disposal of all LF 2c materials. In addition, the Action Memorandum clarified that the selected action addresses only landfill contents; additional surface water, soil, or groundwater action may be required for final cleanup.

Additional field characterizations at LF 2c identified the waste materials as non-hazardous, except for two isolated "hot spots" of lead-contaminated material. Approximately 20 cubic yards of fill identified as hazardous for leachable lead content were removed in September 1998 and transported to the Safety Kleen facility in Grassy Mountain, Utah, for proper RCRA management. The Action Memorandum was modified on August 6, 1998 to provide for the removal and off-base management of the hazardous material. A report documenting this removal action was submitted for agency review in February 1999.

The Air Force completed LF 2c excavation and site restoration activities in December 1998. Approximately 38,000 cubic yards of landfill wastes were removed from this IRP site. The LF 2c Final RA Report is planned to be issued in May 1999.

Non-Time-Critical Removal Actions for LF 2a and 2b are planned to begin in April 2000. Actions may include partial excavation of both subunits.

LF 4. A Non-Time-Critical Removal Action for LF 4 is scheduled for December 2001. Actions may include excavation of wastes and redeposition in areas of the LF outside of the floodplain.

2.9.3 Continuing Operations and Maintenance

At present, there is no remedial action system operating at OU 9. No continuing operations and maintenance are needed at LF 2c because the wastes were completely excavated and restoration of the site was completed.

2.10 OPERABLE UNIT 10

OU 10 consists of LF 7 and FPTA 1.

LF 7. LF 7 is located on 15 acres west of Old Glory Road between Crow Creek and Missile Drive. The LF is divided into two sub-units. Area 7a is 8.5 acres located in the eastern part of the area, adjacent to Old Glory Road. Area 7b is 6.5 acres located in the western part of the area and underlies part of FPTA 1. LF 7 was discovered in 1985 during a water line trench excavation. Wastes placed in this LF during the 1930s and 1940s included domestic, shop, and hospital wastes from the FEW AFB. LF 7 use was discontinued and the area recontoured and revegetated by 1966.

FPTA 1. FPTA 1 is located on 2 acres, 150 yards south of Crow Creek, approximately 500 yards west of The Third Street bridge. Part of LF 7 underlies FPTA 1. Surface runoff from training exercises at FPTA 1 entered Crow Creek. Substantial contamination was visible on surface soils.

2.10.1 Description of Remedy and Remedial Action Objectives

The initial RI of LF 7 was conducted in 1987 through 1989; subsequent RIs were conducted between 1992 and 1995. Soil COCs identified at LF 7a, LF 7b and FPTA 1 include TPH, TCE, and limited occurrences of pesticides, herbicides, dioxins and furans. TCE and TPH appear to be broadly distributed in soils in OU 10. Groundwater COCs include widely distributed TCE above the MCL of 5 µg/L. The maximum TCE concentration at LF 7a was 120 µg/L and at LF 7b was 81 µg/L. Groundwater analyses from the 1992 RI identified low levels of dioxins and furans at LF 7. The primary soil COCs at FPTA 1 are VHOCS, VACs, TPH, and lead.

In 1992, a bioventing treatability study was implemented at FPTA 1. Approximately 4,468 pounds of TPH were removed during the study over a 26-month period. A bioventing system was installed at FPTA 1 and LF 7b in 1994. The system was shut down when monitoring data suggested the system was no longer needed for contaminant removal in the area of influence. Bioventing may resume as part of the final remedy.

2.10.2 Current Status

Remaining environmental contamination at LF 7 will be addressed as part of the Comprehensive RI/FS for Zone D2. The RI/FS effort is currently scheduled to begin in December 2000 as a fiscal year 2001 IRP project. A Non-Time-Critical Removal Action is also planned for LF 7 as a fiscal year 2003 IRP

project. Current plans under consideration for this effort involve excavation for off-base disposal or consolidation in another on-base landfill. Since LF 7 is located within a floodplain, closure of the landfill in place is not considered an option. The tentative start date for this project is December 2002.

Groundwater issues associated with LF 7 will be addressed as part of OU 2.

Recommendations for LF 7 include:

- Determination of depth-to-water and depth-to-base of LF.
- Determination of organic and inorganic contamination in shallow groundwater upgradient of LF 7a.
- Identification of all potential organic and inorganic contaminants.
- Resample wells for vinyl chloride presence.

2.10.3 Continuing Operations and Maintenance

At present, there is no remedial action implemented at OU 10.

3.0 AREAS OF NONCOMPLIANCE

No areas of noncompliance were found during this five-year review of FEW AFB. The NFRAP RODs for soils in place at OU 1, OU 4, and OU 5 appear to be protective of human health and the environment. No significant threat to human health or the environment was identified in soils at these OUs. However, groundwater contamination issues were not addressed by the NFRAP RODs and will need to be investigated further. An IRA ROD for LF 3 was implemented in 1997. The remedial action implemented under this ROD involved the extension of a municipal water supply line to the Nob Hill Subdivision. This remedial action appears to be protective because it permanently reduces the threat of exposure to groundwater contaminants, particularly TCE, for residents in this subdivision. An IRA ROD was completed at LF 5a in 1998. The IRA consisted of installation of a LF cap and passive soil gas venting system. Protectiveness of this IRA will be evaluated based on subsequent monitoring, maintenance, and operation activities conducted by the Air Force. No other IRAs or remedial actions were completed within the five-year review period. The remaining OUs are in the RI/FS stage of the CERCLA process.

4.0 RECOMMENDATIONS

If sulfate concentrations in all wells in the Acid Dry Well Area (OU 4) decrease with successive sampling, or are not detected for two successive rounds, a review of the monitoring program scope will be conducted to determine if monitoring should continue. If results show sulfate leaching into groundwater above protection standards, appropriate actions to mitigate leaching will be developed.

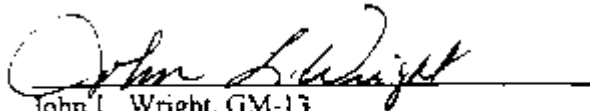
There are no other recommendations regarding the existing IRAs and RODs currently in place at the base.

5.0 NEXT FIVE-YEAR REVIEW

The next five-year review is scheduled for February 2004.

6.0 STATEMENT OF PROTECTIVENESS

The Air Force certifies that the remedies selected for this site remain protective of human health and the environment.



John L. Wright, GM-13
Restoration Program Manager
F. E. Warren Air Force Base

7.0 REFERENCES

A complete list of historical technical documents available for the FEW AFB was provided in the 1999 Management Action Plan (MAP) (May 1998). The list is attached to this document as Attachment I.

In addition to the documents listed in Attachment I, the following items were also reviewed:

US AF. February 1999. Addendum to the Work Plan for Groundwater Sampling, Acid Dry Well, Operable Unit 4, F.E. Warren Air Force Base, Wyoming.

US AF. February 1999. Draft Final Work Plan for Groundwater Study, Spill Sites 3 and 5, F.E. Warren AF Base, Wyoming.

ATTACHMENT I

**F.E. WARREN HISTORICAL DELIVERABLES
(MAY 1998)**

ID	OU #	Site IT	Task Name	FFA	Complete?	Start Date	Finish Date
1	OU2	SS7	OU2 SS7	No	No	8/8/97	12/28/98
2	OU2	SS7	RDWP (DRAFT)	Yes	Yes	8/8/97	8/8/97
3	OU2	SS7	RDWP (DRAFT FINAL)	Yes	Yes	10/8/97	10/8/97
4	OU2	SS7	RDWP (FINAL)	Yes	Yes	12/30/97	12/30/97
5	OU2	SS7	RDWP (REVISED FINAL)	Yes	Yes	1/30/98	1/30/98
6	OU2	SS7	IRAWP (RD) 60% (DRAFT)	Yes	Yes	8/4/98	8/4/98
7	OU2	SS7	IRAWP (RD) 60% (FINAL)	Yes	Yes	1/1/98	1/1/98
8	OU2	SS7	FAR	Yes	No	8/26/98	8/26/98
9	OU2	SS7	IRAWP (RD) 100% (DRAFT)	Yes	No	10/13/98	10/13/98
10	OU2	SS7	IRAWP (RD) 100% (DRAFT FINAL)	Yes	No	12/4/98	12/4/98
11	OU2	SS7	IRAWP (RD) 100% (FINAL)	Yes	No	12/24/98	12/24/98
12	OU2	SS7	RAWP (DRAFT)	Yes	No	7/17/98	7/17/98
13	OU2	SS7	RAWP (DRAFT FINAL)	Yes	No	9/16/98	9/16/98
14	OU2	SS7	RAWP (FINAL)	Yes	No	11/16/98	11/16/98
15	OU2	SS7	BEGIN CONSTRUCTION	Yes	No	12/28/98	12/28/98
16	OU3		Operable Unit 3		No	6/3/99	1/1/99
17	OU3	LF2	Landfill 2		No	6/3/99	11/6/99
18	OU3	LF2	Draft Memo on Data Gaps		Yes	6/3/99	6/3/99
19	OU3	LF2	Draft Exposure Assessment		Yes	8/30/99	8/30/99
20	OU3	LF2	Draft Records Search/Interview Report		Yes	4/12/99	4/12/99
21	OU3	LF2	LF2 RI Work Plan		Yes	1/25/99	10/6/99
22	OU3	LF2	FFA Milestone - Draft RI Work Plan	Yes	Yes	1/27/99	1/27/99
23	OU3	LF2	Draft RI Work Plan		Yes	1/25/99	1/25/99
24	OU3	LF2	Draft Final RI Work Plan		Yes	4/16/99	4/16/99
25	OU3	LF2	Revised Draft Final RI Work Plan		Yes	10/5/99	10/5/99
26	OU3	LF2	LF2 Moved from OU3 to OU9		No	10/5/99	10/5/99
27	OU3	LF2	FFA Milestone - Draft MRAO	Yes	Yes	1/27/99	1/27/99
28	OU3	LF2	Revised Draft MRAO		Yes	10/4/99	10/4/99
29	OU3	LF2	FFA Milestone - Draft MDSA	Yes	Yes	6/15/99	6/15/99
30	OU3	LF2	Draft MDSA		Yes	6/11/99	6/11/99
31	OU3	LF2	LF2 Feasibility Study Work Plan		Yes	2/24/99	11/6/99
32	OU3	LF2	FFA Milestone - Draft FS Work Plan	Yes	Yes	2/26/99	2/26/99
33	OU3	LF2	Draft Feasibility Study Work Plan		Yes	2/24/99	2/24/99
34	OU3	LF2	Draft Final Feasibility Study Work Plan		Yes	4/23/99	4/23/99
35	OU3	LF2	Revised Draft Final Feasibility Study		Yes	11/5/99	11/5/99
36	OU3	LF3	Landfill 3		No	6/3/99	6/23/98
37	OU3	LF3	Draft Memo on Data Gaps		Yes	6/3/99	6/3/99
38	OU3	LF3	Draft Exposure Assessment		Yes	8/30/99	8/30/99
39	OU3	LF3	Draft Records Search/Interview Report		Yes	4/12/99	4/12/99
40	OU3	LF3	LF3 RI Work Plan		No	1/25/99	1/10/97
41	OU3	LF3	FFA Milestone - Draft RI Work Plan	Yes	Yes	1/27/99	1/27/99
42	OU3	LF3	Draft RI Work Plan		Yes	1/25/99	1/25/99
43	OU3	LF3	Draft Final RI Work Plan		Yes	4/16/99	4/16/99
44	OU3	LF3	Revised Draft Final RI Work Plan		Yes	10/5/99	10/5/99
45	OU3	LF3	Revised Draft Final RI Work Plan		Yes	2/25/99	2/25/99
46	OU3	LF3	Final Work RI Plan		Yes	4/20/99	4/20/99
47	OU3	LF3	Draft Modification 1 to RI WP		Yes	9/2/99	9/2/99
48	OU3	LF3	Letter from EPA - GW from LF3 to be		Yes	6/17/99	6/17/99
49	OU3	LF3	FFA Milestone - Draft RI Work Plan M	Yes	Yes	3/21/99	3/21/99
50	OU3	LF3	Draft Modification 2 to RI WP		Yes	3/21/99	3/21/99
51	OU3	LF3	Draft Final Modification 2 to RI WP		Yes	10/10/99	10/10/99
52	OU3	LF3	Revised Draft Final Modification 2 to R		Yes	1/10/97	1/10/97
53	OU3	LF3	FFA Milestone - Draft MRAO	Yes	Yes	1/27/99	1/27/99
54	OU3	LF3	Draft MRAO		Yes	1/27/99	1/27/99
55	OU3	LF3	Revised Draft MRAO		Yes	10/4/99	10/4/99
56	OU3	LF3	FFA Milestone - Draft MDSA	Yes	Yes	6/15/99	6/15/99
57	OU3	LF3	Draft MDSA		Yes	6/11/99	6/11/99
58	OU3	LF3	LF3 Remedial Investigation		Yes	3/3/99	8/21/95
59	OU3	LF3	FFA Milestone - Draft Focused RI Rep	Yes	Yes	3/3/99	3/3/99
60	OU3	LF3	Draft RI Report		Yes	6/24/99	6/24/99
61	OU3	LF3	Draft Final Focused RI Report		Yes	10/24/99	10/24/99
62	OU3	LF3	FFA Milestone - Draft RI Report	Yes	Yes	5/5/95	5/5/95
63	OU3	LF3	Revised Draft Final Focused RI Repor		Yes	5/5/95	5/5/95
64	OU3	LF3	Final Focused RI Report (LF3/Nob Hill		Yes	8/21/95	8/21/95
65	OU3	LF3	LF3 Feasibility Study Work Plan		Yes	2/24/99	11/6/99
66	OU3	LF3	FFA Milestone - Draft FS Work Plan	Yes	Yes	2/26/99	2/26/99
67	OU3	LF3	Draft Feasibility Study Work Plan		Yes	2/24/99	2/24/99

ID	OU #	Site (T)	Task Name	FFA	Complete?	Start Date	Finish Date
68	OU3	LF3	Draft Final Feasibility Study Work Plan		Yes	4/23/93	4/23/93
69	OU3	LF3	Revised Draft Final Feasibility Study		Yes	11/5/93	11/5/93
70	OU3	LF3	LF3 Feasibility Study		No	1/1/93	10/22/97
71	OU3	LF3	FFA Milestone - Draft Focused FS Re	Yes	Yes	6/24/94	6/24/94
72	OU3	LF3	Draft Feasibility Study Report		Yes	6/24/94	6/24/94
73	OU3	LF3	Draft Focused Feasibility Study Report		Yes	3/29/95	3/29/95
74	OU3	LF3	Draft Final Focused Feasibility Study		Yes	6/2/95	6/2/95
75	OU3	LF3	Final Focused Feasibility Study Report		Yes	8/15/95	8/15/95
76	OU3	LF3	FFA Milestone - Draft FS Report	Yes	No	6/24/95	6/24/95
77	OU3	LF3	Draft Feasibility Study Report		No	1/1/93	1/1/93
78	OU3	LF3	Draft Final Feasibility Study Report		No	1/1/93	1/1/93
79	OU3	LF3	Final Feasibility Study Report		No	1/1/93	1/1/93
80	OU3	LF3	FFA Milestone - Draft Focused RI/FS	Yes	No	10/22/97	10/22/97
81	OU3	LF3	Draft Focused RI/FS Report		No	1/1/93	1/1/93
82	OU3	LF3	LF3 Proposed Plan/ROD		No	1/1/93	6/23/98
83	OU3	LF3	FFA Milestone - Draft PP for IRA	Yes	Yes	4/8/97	4/8/97
84	OU3	LF3	Draft PP for IRA		Yes	7/1/94	7/1/94
85	OU3	LF3	Draft Final PP for IRA		Yes	10/2/95	10/2/95
86	OU3	LF3	Final PP for IRA		No	1/1/93	1/1/93
87	OU3	LF3	FFA Milestone - Draft ROD for Interim	Yes	No	4/18/97	4/18/97
88	OU3	LF3	Draft ROD for IRA		No	1/1/93	1/1/93
89	OU3	LF3	Draft Final ROD for IRA		No	1/1/93	1/1/93
90	OU3	LF3	Final ROD for IRA		No	1/1/93	1/1/93
91	OU3	LF3	FFA Milestone - Draft PP for Final Acti	Yes	No	6/24/95	6/24/95
92	OU3	LF3	Draft PP for Final Action		No	1/1/93	1/1/93
93	OU3	LF3	Draft Final PP for Final Action		No	1/1/93	1/1/93
94	OU3	LF3	Final PP for Final Action		No	1/1/93	1/1/93
95	OU3	LF3	FFA Milestone - Draft ROD for Final A.	Yes	No	12/16/95	12/16/95
96	OU3	LF3	Draft ROD for Final Action		No	1/1/93	1/1/93
97	OU3	LF3	Draft Final ROD for Final Action		No	1/1/93	1/1/93
98	OU3	LF3	Final ROD for Final Action		No	1/1/93	1/1/93
99	OU3	LF3	FFA Milestone - Draft Phase II PP (Gr	Yes	No	3/23/98	3/23/98
100	OU3	LF3	Draft Phase II PP (Groundwater)		No	1/1/93	1/1/93
101	OU3	LF3	Draft Final Phase II PP (Groundwater)		No	1/1/93	1/1/93
102	OU3	LF3	FinalPhase II PP (Groundwater)		No	1/1/93	1/1/93
103	OU3	LF3	FFA Milestone - Draft Phase II ROD (	Yes	No	6/23/98	6/23/98
104	OU3	LF3	Draft Phase II ROD (Groundwater)		No	1/1/93	1/1/93
105	OU3	LF3	Draft Final Phase II ROD (Groundwater)		No	1/1/93	1/1/93
106	OU3	LF3	FinalPhase II ROD (Groundwater)		No	1/1/93	1/1/93
107	OU3	NH	Nob Hill		Yes	3/29/96	12/10/96
108	OU3	NH	Nob Hill Remedial Investigation		Yes	5/5/95	5/21/95
109	OU3	NH	Draft Final Focused RI Report		Yes	5/5/95	5/5/95
110	OU3	NH	Final Focused RI Report		Yes	8/21/95	8/21/95
111	OU3	NH	Nob Hill Feasibility Study		Yes	3/29/95	8/15/95
112	OU3	NH	FFA Milestone - Draft Focused FS Re	Yes	Yes	4/1/95	4/1/95
113	OU3	NH	Draft Focused Feasibility Study Repo		Yes	3/29/95	3/29/95
114	OU3	NH	Draft Final Focused Feasibility Study		Yes	6/2/95	6/2/95
115	OU3	NH	Final Focused Feasibility Study Repo		Yes	8/15/95	8/15/95
116	OU3	NH	Nob Hill Proposed Plan/ROD		Yes	4/15/95	2/13/96
117	OU3	NH	FFA Milestone - Draft Proposed Plan (	Yes	Yes	4/15/95	4/15/95
118	OU3	NH	Draft Proposed Plan for IRA (Nob Hill)		Yes	4/15/95	4/15/95
119	OU3	NH	Draft Final Proposed Plan for IRA (No		Yes	6/15/95	6/15/95
120	OU3	NH	Revised Draft Final Proposed Plan for		Yes	9/13/95	9/13/95
121	OU3	NH	Final Proposed Plan for IRA (Nob Hill)		Yes	10/2/95	10/2/95
122	OU3	NH	FFA Milestone - Draft ROD (Nob Hill)	Yes	Yes	9/30/95	9/30/95
123	OU3	NH	Draft ROD (Nob Hill)		Yes	10/2/95	10/2/95
124	OU3	NH	Revised Draft ROD (Nob Hill)		Yes	11/8/95	11/8/95
125	OU3	NH	Draft Final ROD (Nob Hill)		Yes	12/13/95	12/13/95
126	OU3	NH	Final ROD (Nob Hill)		Yes	2/13/96	2/13/96
127	OU3	NH	Nob Hill Remedial Design/Remedial Acti		Yes	4/10/96	12/10/96
128	OU3	NH	Draft Remedial Design Work Plan		Yes	4/10/96	4/10/96
129	OU3	NH	Final Remedial Design Work Plan		Yes	7/10/96	7/10/96
130	OU3	NH	Remedial Design Work Plan Change		Yes	7/17/96	7/17/96
131	OU3	NH	60% Design		Yes	5/9/96	5/9/96
132	OU3	NH	90% Design		Yes	6/12/96	6/12/96
133	OU3	NH	Draft Remedial Action Work Plan		Yes	7/10/96	7/10/96
134	OU3	NH	Draft Final Remedial Action Work Plan		Yes	9/27/96	9/27/96

ID	OU #	Site (T)	Task Name	FFA	Complete?	Start Date	Finish Date
135	OU3	NH	Final Remedial Action Work Plan		Yes	12/10/98	12/10/98
136	OU3	LF4	Landfill 4		Yes	6/3/91	11/5/93
137	OU3	LF4	Draft Memo on Data Gaps		Yes	6/3/91	6/3/91
138	OU3	LF4	Draft Exposure Assessment		Yes	8/30/91	8/30/91
139	OU3	LF4	Draft Records Search/Interview Report		Yes	4/12/93	4/12/93
140	OU3	LF4	LF4 RI Work Plan		Yes	1/25/93	10/5/93
141	OU3	LF4	FFA Milestone - Draft RI Work Plan	Yes	Yes	1/27/93	1/27/93
142	OU3	LF4	Draft RI Work Plan		Yes	1/25/93	1/25/93
143	OU3	LF4	Draft Final RI Work Plan		Yes	4/16/93	4/16/93
144	OU3	LF4	Revised Draft Final RI Work Plan		Yes	10/5/93	10/5/93
145	OU3	LF4	LF4 Moved from OU3 to OU9		No	10/5/93	10/5/93
146	OU3	LF4	FFA Milestone - Draft MRAO	Yes	Yes	1/27/93	1/27/93
147	OU3	LF4	Draft MRAO		Yes	1/27/93	1/27/93
148	OU3	LF4	Revised Draft MRAO		Yes	10/4/93	10/4/93
149	OU3	LF4	FFA Milestone - Draft MDSA	Yes	Yes	6/15/93	6/15/93
150	OU3	LF4	Draft MDSA		Yes	6/11/93	6/11/93
151	OU3	LF4	LF4 Feasibility Study Work Plan		Yes	2/24/93	11/5/93
152	OU3	LF4	FFA Milestone - Draft FS Work Plan	Yes	Yes	2/26/93	2/26/93
153	OU3	LF4	Draft Feasibility Study Work Plan		Yes	2/24/93	2/24/93
154	OU3	LF4	Draft Final Feasibility Study Work Plan		Yes	4/23/93	4/23/93
155	OU3	LF4	Revised Draft Final Feasibility Study		Yes	11/5/93	11/5/93
156	OU3	LF5	Landfill 5		Yes	6/3/91	11/5/93
157	OU3	LF5	Draft Memo on Data Gaps		Yes	6/3/91	6/3/91
158	OU3	LF5	Draft Exposure Assessment		Yes	8/30/91	8/30/91
159	OU3	LF5	Draft Records Search/Interview Report		Yes	4/12/93	4/12/93
160	OU3	LF5	LF5 RI Work Plan		Yes	1/25/93	10/5/93
161	OU3	LF5	FFA Milestone - Draft RI Work Plan	Yes	Yes	1/27/93	1/27/93
162	OU3	LF5	Draft RI Work Plan		Yes	1/25/93	1/25/93
163	OU3	LF5	Draft Final RI Work Plan		Yes	4/16/93	4/16/93
164	OU3	LF5	Revised Draft Final RI Work Plan		Yes	10/5/93	10/5/93
165	OU3	LF5	LF5 Moved from OU3 to OU8		Yes	10/5/93	10/5/93
166	OU3	LF5	FFA Milestone - Draft MRAO	Yes	Yes	1/27/93	1/27/93
167	OU3	LF5	Draft MRAO		Yes	1/27/93	1/27/93
168	OU3	LF5	Revised Draft MRAO		Yes	10/4/93	10/4/93
169	OU3	LF5	FFA Milestone - Draft MDSA	Yes	Yes	6/15/93	6/15/93
170	OU3	LF5	Draft MDSA		Yes	6/11/93	6/11/93
171	OU3	LF5	LF5 Feasibility Study Work Plan		Yes	2/24/93	11/5/93
172	OU3	LF5	FFA Milestone - Draft FS Work Plan	Yes	Yes	2/26/93	2/26/93
173	OU3	LF5	Draft Feasibility Study Work Plan		Yes	2/24/93	2/24/93
174	OU3	LF5	Draft Final Feasibility Study Work Plan		Yes	4/23/93	4/23/93
175	OU3	LF5	Revised Draft Final Feasibility Study		Yes	11/5/93	11/5/93
176	OU3	LF6	Landfill 6		No	6/3/91	1/1/99
177	OU3	LF6	Draft Memo on Data Gaps		Yes	6/3/91	6/3/91
178	OU3	LF6	Draft Exposure Assessment		Yes	8/30/91	8/30/91
179	OU3	LF6	Draft Records Search/Interview Report		Yes	4/12/93	4/12/93
180	OU3	LF6	LF6 RI Work Plan		Yes	1/1/93	1/1/99
181	OU3	LF6	FFA Milestone - Draft RI Work Plan	Yes	Yes	1/27/93	1/27/93
182	OU3	LF6	Draft RI Work Plan		Yes	1/25/93	1/25/93
183	OU3	LF6	Draft Final RI Work Plan		Yes	4/16/93	4/16/93
184	OU3	LF6	Revised Draft Final RI Work Plan		Yes	10/5/93	10/5/93
185	OU3	LF6	Revised Draft Final RI Work Plan		Yes	2/25/94	2/25/94
186	OU3	LF6	Final RI Work Plan		Yes	4/20/94	4/20/94
187	OU3	LF6	Draft Modification 1 to RI WP		Yes	8/2/94	8/2/94
188	OU3	LF6	Letter from EPA - GW from LF6 to be		Yes	6/17/94	6/17/94
189	OU3	LF6	FFA Milestone - Draft RI Work Plan M	Yes	Yes	3/29/96	3/29/96
190	OU3	LF6	Draft Modification 2 to RI WP		Yes	3/29/96	3/29/96
191	OU3	LF6	Draft Final Modification 2 to RI WP		Yes	10/10/96	10/10/96
192	OU3	LF6	Revised Draft Final Modification 2 to R		Yes	1/10/97	1/10/97
193	OU3	LF6	FFA Milestone - Draft MRAO	Yes	Yes	1/27/93	1/27/93
194	OU3	LF6	Draft MRAO		Yes	1/27/93	1/27/93
195	OU3	LF6	Revised Draft MRAO		Yes	10/4/93	10/4/93
196	OU3	LF6	FFA Milestone - Draft MDSA	Yes	Yes	6/15/93	6/15/93
197	OU3	LF6	Draft MDSA		Yes	6/11/93	6/11/93
198	OU3	LF6	LF6 Remedial Investigation		No	1/1/93	1/23/97
199	OU3	LF6	FFA Milestone - Draft Focused RI	Yes	Yes	3/3/94	3/3/94
200	OU3	LF6	Draft RI Report		Yes	6/24/94	6/24/94
201	OU3	LF6	Draft Final Focused RI Report		Yes	10/24/94	10/24/94

ID	OU #	Site ID	Task Name	FFA	Complete?	Start Date	Finish Date
202	OU3	LF6	Revised Draft Final Focused RI R		Yes	12/24/94	12/24/94
203	OU3	LF6	Final Focused RI Report		Yes	2/20/95	2/20/95
204	OU3	LF6	FFA Milestone - Draft Focused RI	Yes	No	1/23/97	1/23/97
205	OU3	LF6	Draft Focused RI/FS		No	1/1/93	1/1/93
206	OU3	LF6	LF6 Feasibility Study Work Plan		Yes	2/24/93	11/5/93
207	OU3	LF6	FFA Milestone - Draft FS Work PI	Yes	Yes	2/28/93	2/28/93
208	OU3	LF6	Draft Feasibility Study Work Plan		Yes	2/24/93	2/24/93
209	OU3	LF6	Draft Final Feasibility Study Work		Yes	4/23/93	4/23/93
210	OU3	LF6	Revised Draft Final Feasibility Stu		Yes	11/5/93	11/5/93
211	OU3	LF6	LF6 Feasibility Study		No	1/1/93	10/22/97
212	OU3	LF6	FFA Milestone - Draft Focused	Yes	Yes	6/24/94	6/24/94
213	OU3	LF6	Draft Feasibility Study Report (So		Yes	6/24/94	6/24/94
214	OU3	LF6	Draft Focused Feasibility Study		Yes	10/24/94	10/24/94
215	OU3	LF6	Draft Final Focused Feasibility S		Yes	1/18/95	1/18/95
216	OU3	LF6	Final Focused Feasibility Study		Yes	4/4/95	4/4/95
217	OU3	LF6	FFA Milestone - Draft FS Report	Yes	No	6/24/95	6/24/95
218	OU3	LF6	Draft FS Report		No	1/1/93	1/1/93
219	OU3	LF6	Draft Final FS Report		No	1/1/93	1/1/93
220	OU3	LF6	Final FS Report		No	1/1/93	1/1/93
221	OU3	LF6	FFA Milestone - Draft Focused	Yes	No	10/22/97	10/22/97
222	OU3	LF6	Draft Focused RI/FS (Phase II)		No	1/1/93	1/1/93
223	OU3	LF6	Draft Final Focused RI/FS (Phas		No	1/1/93	1/1/93
224	OU3	LF6	Final Focused RI/FS (Phase II)		No	1/1/93	1/1/93
225	OU3	LF6	LF6 Proposed Plan/ROD		No	1/1/93	1/1/99
226	OU3	LF6	FFA Milestone - Draft PP for IRA	Yes	Yes	6/24/94	6/24/94
227	OU3	LF6	Draft PP for IRA (Source)		Yes	9/9/94	9/9/94
228	OU3	LF6	Revised Draft PP for IRA (Source		Yes	2/8/95	2/8/95
229	OU3	LF6	FFA Milestone - Draft PP Revisio	Yes	Yes	4/8/97	4/8/97
230	OU3	LF6	Draft Revised PP for Addition of I		Yes	6/5/97	6/5/97
231	OU3	LF6	Draft Final Revised PP for Additio		Yes	11/5/97	11/5/97
232	OU3	LF6	Final Revised PP for Addition of I		Yes	11/24/97	11/24/97
233	OU3	LF6	FFA Milestone - Draft Phase II P	Yes	No	12/15/97	12/15/97
234	OU3	LF6	Draft Phase II PP		No	1/1/93	1/1/93
235	OU3	LF6	Draft Final Phase II PP		No	1/1/93	1/1/93
236	OU3	LF6	Final Phase II PP		No	1/1/93	1/1/93
237	OU3	LF6	FFA Milestone - Draft ROD for Int	Yes	Yes	12/18/94	12/18/94
238	OU3	LF6	Draft ROD for Interim Action (Sou		Yes	1/18/95	1/18/95
239	OU3	LF6	Draft Final ROD for Interim Action		Yes	5/1/95	5/1/95
240	OU3	LF6	Draft Explanation of Significant Di		Yes	12/20/96	12/20/96
241	OU3	LF6	FFA Milestone - Draft ROD Amen	Yes	Yes	4/8/97	4/8/97
242	OU3	LF6	ROD Amendment Declaration		Yes	4/18/97	4/18/97
243	OU3	LF6	Draft ROD Amendment for IRA		Yes	7/30/97	7/30/97
244	OU3	LF6	STOP WORK ORDER ISSUED		Yes	10/8/97	10/8/97
245	OU3	LF6	Draft Final ROD Amendment to		Yes	10/16/97	10/16/97
246	OU3	LF6	Revised Draft Final ROD Ammen		Yes	11/7/97	11/7/97
247	OU3	LF6	FFA Milestone - Draft PP for Final	Yes	No	6/24/95	6/24/95
248	OU3	LF6	Draft PP For Final Action		No	1/1/93	1/1/93
249	OU3	LF6	Draft Final PP For Final Action		No	1/1/93	1/1/93
250	OU3	LF6	Final PP For Final Action		No	1/1/93	1/1/93
251	OU3	LF6	FFA Milestone - Draft ROD for Fi	Yes	No	12/18/95	12/18/95
252	OU3	LF6	Draft ROD for Final Action		No	1/1/93	1/1/93
253	OU3	LF6	Draft Final ROD for Final Action		No	1/1/93	1/1/93
254	OU3	LF6	Final ROD for Final Action		No	1/1/93	1/1/93
255	OU3	LF6	FFA Milestone - Draft Phase II R	Yes	No	4/18/98	4/18/98
256	OU3	LF6	OU3 LANDFILL 6	No	Yes	3/19/97	1/1/99
257	OU3	LF6	RD 100%	No	Yes	11/24/97	4/10/98
258	OU3	LF6	RD 100% (DRAFT FIN	Yes	Yes	11/24/97	11/24/97
259	OU3	LF6	RD 100% (FINAL)	Yes	Yes	2/20/98	2/20/98
260	OU3	LF6	RD 100% (FINAL) DRC	Yes	Yes	3/20/98	3/20/98
261	OU3	LF6	RD 100% (FINAL) SEC	Yes	Yes	4/10/98	4/10/98
262	OU3	LF6	AMENDED ROD	No	No	1/1/98	1/1/99
263	OU3	LF6	AMENDED ROD (DRA	Yes	Yes	1/1/98	1/1/98
264	OU3	LF6	AMENDED ROD (DRA	Yes	Yes	2/12/98	2/12/98
265	OU3	LF6	AMENDED ROD (FINA	Yes	No	1/1/99	1/1/99
266	OU3	LF6	RAWP	No	No	1/1/99	1/1/99
267	OU3	LF6	DRAFT	Yes	No	1/1/99	1/1/99
268	OU3	LF6	DRAFT FINAL	Yes	No	1/1/99	1/1/99

ID	OU #	Site (T)	Task Name	FFA	Complete?	Start Date	Finish Date
269	OU3	LF6	FINAL	Yes	No	1/1/99	1/1/99
270	OU3	LF6	CONSTRUCTION	Yes	No	3/19/97	11/9/98
271	OU3	LF6	LF6 RD		No	3/10/95	11/24/97
272	OU3	LF6	FFA Milestone - Draft RD W	Yes	Yes	3/10/95	3/10/95
273	OU3	LF6	Draft RD Work Plan for Interi		Yes	2/10/96	2/10/96
274	OU3	LF6	Final RD Work Plan for Interi		Yes	4/10/96	4/10/96
275	OU3	LF6	Draft RD Data Gap Investiga		Yes	5/10/96	5/10/96
276	OU3	LF6	Draft Final RD Data Gap Inv		Yes	8/10/96	8/10/96
277	OU3	LF6	Final RD Data Gap Investiga		Yes	2/13/97	2/13/97
278	OU3	LF6	Draft Post Closure O&M Pla		Yes	12/13/96	12/13/96
279	OU3	LF6	Final Post Closure O&M Pla		Yes	11/10/97	11/10/97
280	OU3	LF6	FFA Milestone - 30% Design	Yes	Yes	7/19/96	7/19/96
281	OU3	LF6	Preliminary 30% Design		Yes	7/19/96	7/19/96
282	OU3	LF6	Interim 60% Design		Yes	10/4/96	10/4/96
283	OU3	LF6	Prefinal 90% Design		Yes	12/9/96	12/9/96
284	OU3	LF6	Entered Dispute Resolution		Yes	12/9/96	12/9/96
285	OU3	LF6	Final 100% Design (Draft)		Yes	11/24/97	11/24/97
286	OU3	LF6	LF6 IRA		Yes	12/13/96	10/28/98
287	OU3	LF6	Draft RA Work Plan (Source Control)		Yes	12/13/96	12/13/96
288	OU3	LF6	Draft Final RA Work Plan (Source Con		Yes	5/30/97	5/30/97
289	OU3	LF6	Final RA Work Plan (Source Control)		Yes	9/4/97	9/4/97
290	OU3	LF6	Post-Closure O&M Plan		Yes	12/13/96	12/13/96
291	OU3	LF6	Draft General Site Work Plan (Cover a		Yes	2/10/97	2/10/97
292	OU3	LF6	Draft Final General Site Work Plan (C		Yes	7/10/97	7/10/97
293	OU3	LF6	FFA Milestone - End Construction for	Yes	No	10/28/98	10/28/98
294	OU3	LF7	Landfill 7		Yes	6/3/91	11/6/93
295	OU3	LF7	Draft Memo on Data Gaps		Yes	6/3/91	6/3/91
296	OU3	LF7	Draft Exposure Assessment		Yes	8/30/91	8/30/91
297	OU3	LF7	Draft Records Search/Interview Report		Yes	4/12/93	4/12/93
298	OU3	LF7	LF7 RI Work Plan		Yes	1/25/93	10/5/93
299	OU3	LF7	FFA Milestone - Draft RI Work Plan	Yes	Yes	1/27/93	1/27/93
300	OU3	LF7	Draft RI Work Plan		Yes	1/25/93	1/25/93
301	OU3	LF7	Draft Final RI Work Plan		Yes	4/16/93	4/16/93
302	OU3	LF7	Revised Draft Final RI Work Plan		Yes	10/5/93	10/5/93
303	OU3	LF7	LF7 Moved from OU3 to OU10		Yes	10/5/93	10/5/93
304	OU3	LF7	FFA Milestone - Draft MRAO	Yes	Yes	1/27/93	1/27/93
305	OU3	LF7	Draft MRAO		Yes	1/27/93	1/27/93
306	OU3	LF7	Revised Draft MRAO		Yes	10/4/93	10/4/93
307	OU3	LF7	FFA Milestone - Draft MDSA	Yes	Yes	6/15/93	6/15/93
308	OU3	LF7	Draft MDSA		Yes	6/11/93	6/11/93
309	OU3	LF7	LF7 Feasibility Study Work Plan		Yes	2/24/93	11/6/93
310	OU3	LF7	FFA Milestone - Draft FS Work Plan	Yes	Yes	2/28/93	2/28/93
311	OU3	LF7	Draft Feasibility Study Work Plan		Yes	2/24/93	2/24/93
312	OU3	LF7	Draft Final Feasibility Study Work Plan		Yes	4/23/93	4/23/93
313	OU3	LF7	Revised Draft Final Feasibility Study		Yes	11/5/93	11/5/93
314	OU4	ADW	Operable Unit 4 - Acid Dry Wells		Yes	8/1/86	12/30/97
315	OU4	ADW	Removal Action		Yes	8/1/86	8/1/86
316	OU4	ADW	Memo on Data Gaps		Yes	5/1/91	5/1/91
317	OU4	ADW	Exposure Assessment		Yes	8/23/91	8/23/91
318	OU4	ADW	RI/FS Work Plan		Yes	9/30/91	3/20/92
319	OU4	ADW	FFA Milestone - Draft RI Work Plan	Yes	Yes	10/1/91	10/1/91
320	OU4	ADW	Draft RI Work Plan		Yes	10/1/91	10/1/91
321	OU4	ADW	Draft Final RI Work Plan		Yes	11/22/91	11/22/91
322	OU4	ADW	Final RI Work Plan		Yes	12/25/91	12/25/91
323	OU4	ADW	FFA Milestone - Draft MRAO	Yes	Yes	10/1/91	10/1/91
324	OU4	ADW	Draft MRAO		Yes	9/30/91	9/30/91
325	OU4	ADW	FFA Milestone - Draft FS Work Plan	Yes	Yes	11/1/91	11/1/91
326	OU4	ADW	Draft FS Work Plan		Yes	11/1/91	11/1/91
327	OU4	ADW	Draft Final FS Work Plan		Yes	1/6/92	1/6/92
328	OU4	ADW	Final FS Work Plan		Yes	3/20/92	3/20/92
329	OU4	ADW	FFA Milestone - Draft MDSA	Yes	Yes	1/29/92	1/29/92
330	OU4	ADW	Draft MDSA		Yes	1/29/92	1/29/92
331	OU4	ADW	RI/FS Reports		Yes	1/1/91	7/29/92
332	OU4	ADW	FFA Milestone - Draft RI Report	Yes	Yes	5/27/92	5/27/92
333	OU4	ADW	Draft RI Report		Yes	5/28/92	5/28/92
334	OU4	ADW	Draft Final RI Report		Yes	7/29/92	7/29/92
335	OU4	ADW	FFA Milestone - Draft FS Report	Yes	Yes	6/5/92	6/5/92

ID	OU #	Site ID	Task Name	FFA	Complete?	Start Date	Finish Date
336	OU4	ADW	Draft Feasibility Study Report		Yes	6/5/92	6/5/92
337	OU4	ADW	Draft Final Feasibility Study Report		Yes	7/29/92	7/29/92
338	OU4	ADW	Final Feasibility Study Report		Yes	1/1/91	1/1/91
339	OU4	ADW	Proposed Plan/ROD		Yes	1/1/91	12/30/92
340	OU4	ADW	FFA Milestone - Draft Proposed Plan for Fi	Yes	Yes	6/5/92	6/5/92
341	OU4	ADW	Draft Proposed Plan		Yes	6/5/92	6/5/92
342	OU4	ADW	Draft Final Proposed Plan		Yes	7/29/92	7/29/92
343	OU4	ADW	Final Proposed Plan		Yes	8/25/92	8/25/92
344	OU4	ADW	FFA Milestone - Draft ROD for Final Action	Yes	Yes	9/12/92	9/12/92
345	OU4	ADW	Draft NFA ROD		Yes	9/12/92	9/12/92
346	OU4	ADW	Draft Final NFA ROD		Yes	1/1/91	1/1/91
347	OU4	ADW	Final NFA ROD		Yes	12/30/92	12/30/92
348	OU4	ADW	Follow-on Long-Term Monitoring		Yes	9/30/94	12/30/97
349	OU4	ADW	Draft WP for GW Monitoring (2 Rounds)		Yes	9/30/94	9/30/94
350	OU4	ADW	Draft SAP for GW Monitoring		Yes	10/8/97	10/8/97
351	OU4	ADW	FFA Milestone - 5 Year Review	Yes	No	12/30/97	12/30/97
352	OU5	TA1-2	Operable Unit 5 - FPTA 1 & 2		Yes	6/18/92	11/3/94
353	OU5	FPTA1	FPTA-1		Yes	6/18/92	12/17/93
354	OU5	FPTA1	R/FS Work Plan		Yes	6/18/92	12/17/92
355	OU5	FPTA1	FFA Milestone - Draft RI Work Plan	Yes	Yes	6/23/92	6/23/92
356	OU5	FPTA1	Draft RI Work Plan		Yes	5/18/92	5/18/92
357	OU5	FPTA1	Draft Final RI Work Plan		Yes	7/27/92	7/27/92
358	OU5	FPTA1	Final Work RI Plan		Yes	9/18/92	9/18/92
359	OU5	FPTA1	FFA Milestone - Draft MRAO	Yes	Yes	6/23/92	6/23/92
360	OU5	FPTA1	Draft MRAO		Yes	6/23/92	6/23/92
361	OU5	FPTA1	FFA Milestone - Draft FS Work Plan	Yes	Yes	8/12/92	8/12/92
362	OU5	FPTA1	Draft FS Work Plan		Yes	8/12/92	8/12/92
363	OU5	FPTA1	Draft Final FS Work Plan		Yes	10/16/92	10/16/92
364	OU5	FPTA1	FFA Milestone - Draft MDSA	Yes	Yes	12/1/92	12/1/92
365	OU5	FPTA1	Draft MDSA		Yes	12/1/92	12/1/92
366	OU5	FPTA1	R/FS Report		Yes	4/14/93	12/17/93
367	OU5	FPTA1	FFA Milestone - Draft RI Report	Yes	Yes	4/14/93	4/14/93
368	OU5	FPTA1	Draft RI Report		Yes	4/14/93	4/14/93
369	OU5	FPTA1	Draft Final RI Report		Yes	7/16/93	7/16/93
370	OU5	FPTA1	Revised Draft Final RI Report		Yes	8/23/93	8/23/93
371	OU5	FPTA1	2nd Revised Draft Final RI Report		Yes	10/13/93	10/13/93
372	OU5	FPTA1	Final RI Report		Yes	12/17/93	12/17/93
373	OU5	FPTA1	EPA Letter to move FPTA-1 to OU10		Yes	10/5/93	10/5/93
374	OU5	FPTA2	Fire Protection Training Area 2 (Soils)		Yes	5/18/92	11/3/94
375	OU5	FPTA2	R/FS Work Plan		Yes	5/18/92	12/1/92
376	OU5	FPTA2	FFA Milestone - Draft RI Work Plan	Yes	Yes	6/23/92	6/23/92
377	OU5	FPTA2	Draft RI Work Plan		Yes	5/18/92	5/18/92
378	OU5	FPTA2	Draft Final RI Work Plan		Yes	7/27/92	7/27/92
379	OU5	FPTA2	Final Work RI Plan		Yes	9/18/92	9/18/92
380	OU5	FPTA2	FFA Milestone - Draft MRAO	Yes	Yes	6/23/92	6/23/92
381	OU5	FPTA2	Draft MRAO		Yes	6/23/92	6/23/92
382	OU5	FPTA2	FFA Milestone - Draft FS Work Plan	Yes	Yes	8/12/92	8/12/92
383	OU5	FPTA2	Draft FS Work Plan		Yes	8/12/92	8/12/92
384	OU5	FPTA2	Draft Final FS Work Plan		Yes	10/16/92	10/16/92
385	OU5	FPTA2	FFA Milestone - Draft MDSA	Yes	Yes	12/1/92	12/1/92
386	OU5	FPTA2	Draft MDSA		Yes	12/1/92	12/1/92
387	OU5	FPTA2	R/FS Report		Yes	4/14/93	1/10/94
388	OU5	FPTA2	FFA Milestone - Draft RI Report	Yes	Yes	4/14/93	4/14/93
389	OU5	FPTA2	Draft RI Report		Yes	4/14/93	4/14/93
390	OU5	FPTA2	Draft Final RI Report		Yes	7/16/93	7/16/93
391	OU5	FPTA2	Revised Draft Final RI Report		Yes	8/23/93	8/23/93
392	OU5	FPTA2	2nd Revised Draft Final RI Report		Yes	10/13/93	10/13/93
393	OU5	FPTA2	Final RI Report		Yes	12/17/93	12/17/93
394	OU5	FPTA2	FFA Milestone - Draft FS Report	Yes	Yes	6/25/93	6/25/93
395	OU5	FPTA2	Draft Feasibility Study Report		Yes	8/13/93	8/13/93
396	OU5	FPTA2	Draft Final Feasibility Study Report		Yes	10/22/93	10/22/93
397	OU5	FPTA2	Revised Draft Final Feasibility Study R		Yes	12/22/93	12/22/93
398	OU5	FPTA2	DEQ Letter to continue GW under OU		Yes	1/10/94	1/10/94
399	OU5	FPTA2	PP/ROD		Yes	6/25/93	11/3/94
400	OU5	FPTA2	FFA Milestone - Draft PP (Soils)	Yes	Yes	6/25/93	6/25/93
401	OU5	FPTA2	Draft Proposed Plan		Yes	8/13/93	8/13/93
402	OU5	FPTA2	EPA Notice of Dispute		Yes	9/14/93	9/14/93

ID	OU #	Site (T)	Task Name	FFA	Complete?	Start Date	Finish Date
403	OU5	FPTA2	AF Letter, Proposal for NFA at FPTA2		Yes	10/16/93	10/16/93
404	OU5	FPTA2	Draft Final Proposed Plan		Yes	12/22/93	12/22/93
405	OU5	FPTA2	Final Proposed Plan		Yes	1/18/94	1/18/94
406	OU5	FPTA2	FFA Milestone - Draft ROD (Soils)	Yes	Yes	12/17/93	12/17/93
407	OU5	FPTA2	Draft ROD		Yes	8/28/94	8/28/94
408	OU5	FPTA2	Draft Final ROD		Yes	9/28/94	9/28/94
409	OU5	FPTA2	Final ROD		Yes	11/3/94	11/3/94
410	OU6	OBOD	Operable Unit 6 - OBOD		No	1/1/94	12/12/97
411	OU6	OBOD	R/FS Work Plans		Yes	3/8/94	9/18/95
412	OU6	OBOD	FFA Milestone - Draft RI Work Plan	Yes	Yes	3/8/94	3/8/94
413	OU6	OBOD	Draft RI Work Plan		Yes	3/8/94	3/8/94
414	OU6	OBOD	Revised Draft Final RI Work Plan		Yes	7/7/94	7/7/94
415	OU6	OBOD	Final RI Work Plan		Yes	12/9/94	12/9/94
416	OU6	OBOD	FFA Milestone - Draft MRAO	Yes	Yes	3/8/94	3/8/94
417	OU6	OBOD	Draft MRAO		Yes	3/8/94	3/8/94
418	OU6	OBOD	FFA Milestone - Focused MRAO	Yes	Yes	11/28/94	11/28/94
419	OU6	OBOD	Focused MRAO		Yes	11/28/94	11/28/94
420	OU6	OBOD	FFA Milestone - Draft FS Work Plan	Yes	Yes	7/26/94	7/26/94
421	OU6	OBOD	Draft FS Work Plan		Yes	7/26/94	7/26/94
422	OU6	OBOD	Draft Final FS Work Plan		Yes	10/14/94	10/14/94
423	OU6	OBOD	Final Work FS Work Plan		Yes	12/8/94	12/8/94
424	OU6	OBOD	FFA Milestone - Draft MDSA	Yes	Yes	4/1/95	4/1/95
425	OU6	OBOD	Draft MDSA		Yes	9/18/95	9/18/95
426	OU6	OBOD	R/FS Reports		No	1/1/94	6/12/97
427	OU6	OBOD	FFA Milestone - Draft RI Report	Yes	No	1/12/97	1/12/97
428	OU6	OBOD	Draft RI Report		No	1/1/94	1/1/94
429	OU6	OBOD	Draft Final RI Report		No	1/1/94	1/1/94
430	OU6	OBOD	Final RI Report		No	1/1/94	1/1/94
431	OU6	OBOD	FFA Milestone - Draft FS Report	Yes	No	6/12/97	6/12/97
432	OU6	OBOD	Draft FS Report		No	1/1/94	1/1/94
433	OU6	OBOD	Draft Final FS Report		No	1/1/94	1/1/94
434	OU6	OBOD	Final FS Report		No	1/1/94	1/1/94
435	OU6	OBOD	PP/ROD for Final Action		No	1/1/94	12/12/97
436	OU6	OBOD	FFA Milestone - Draft PP for Final Action	Yes	No	9/12/97	9/12/97
437	OU6	OBOD	Draft PP for Final Action		No	1/1/94	1/1/94
438	OU6	OBOD	Draft Final PP for Final Action		No	1/1/94	1/1/94
439	OU6	OBOD	Final PP for Final Action		No	1/1/94	1/1/94
440	OU6	OBOD	FFA Milestone - Draft ROD for Final Action	Yes	No	12/12/97	12/12/97
441	OU6	OBOD	Draft ROD for Final Action		No	1/1/94	1/1/94
442	OU6	OBOD	Draft Final ROD for Final Action		No	1/1/94	1/1/94
443	OU6	OBOD	Final ROD for Final Action		No	1/1/94	1/1/94
444	OU7	FR	Operable Unit 7 - Firing Range		No	3/1/91	8/15/90
445	OU7	FR	Memo on Data Gaps		Yes	3/1/91	3/1/91
446	OU7	FR	Exposure Assessment		Yes	8/15/91	8/15/91
447	OU7	FR	R/FS Work Plan		No	1/1/94	11/15/95
448	OU7	FR	FFA Milestone - Draft RI Work Plan	Yes	Yes	3/22/94	3/22/94
449	OU7	FR	Draft RI Work Plan		Yes	3/22/94	3/22/94
450	OU7	FR	FFA Milestone - Draft Focused R/FS Wor	Yes	Yes	11/28/94	11/28/94
451	OU7	FR	Draft R/FS Work Plan		Yes	11/28/94	11/28/94
452	OU7	FR	Draft Final R/FS Work Plan		Yes	3/22/95	3/22/95
453	OU7	FR	Final R/FS Work Plan		Yes	7/24/95	7/24/95
454	OU7	FR	FFA Milestone - Draft MRAO	Yes	Yes	11/28/94	11/28/94
455	OU7	FR	Draft MRAO		Yes	1/1/94	1/1/94
456	OU7	FR	FFA Milestone - Draft Focused MRAO	Yes	Yes	11/28/94	11/28/94
457	OU7	FR	Draft Focused MRAO		Yes	3/22/94	3/22/94
458	OU7	FR	FFA Milestone - Draft Focused MDSA (Part	Yes	Yes	11/28/94	11/28/94
459	OU7	FR	Draft MDSA (Part I)		Yes	9/15/95	9/15/95
460	OU7	FR	FFA Milestone - Draft MDSA	Yes	Yes	8/8/95	8/8/95
461	OU7	FR	Draft MDSA		Yes	8/8/95	8/8/95
462	OU7	FR	FFA Milestone - Draft R/FS Work Plan	Yes	No	11/15/95	11/15/95
463	OU7	FR	Draft R/FS Work Plan		No	1/1/94	1/1/94
464	OU7	FR	Draft Final R/FS Work Plan		No	1/1/94	1/1/94
465	OU7	FR	Final Work R/FS Work Plan		No	1/1/94	1/1/94
466	OU7	FR	R/FS		No	1/1/94	10/14/99
467	OU7	FR	FFA Milestone - Draft Focused MDSA (Part	Yes	Yes	8/8/95	8/8/95
468	OU7	FR	Draft MDSA (Part II)		Yes	9/15/95	9/15/95
469	OU7	FR	FFA Milestone - Draft PP for Interim Action	Yes	Yes	10/1/95	10/1/95

ID	OU #	Site (T)	Task Name	FFA	Complete?	Start Date	Finish Date
470	OU7	FR	Draft PP for Interim Action - Not Delivered		Yes	1/1/94	1/1/94
471	OU7	FR	FFA Milestone - Draft ROD for Interim Action	Yes	Yes	4/1/96	4/1/96
472	OU7	FR	Draft ROD for Interim Action - Not Delivered		Yes	1/1/94	1/1/94
473	OU7	FR	FFA Milestone - Draft RI/FS Report (Phase I)	Yes	No	6/7/99	6/7/99
474	OU7	FR	Draft RI/FS Report (Phase I)		No	6/7/99	6/7/99
475	OU7	FR	Regulatory Review of Draft		No	6/9/99	7/8/99
476	OU7	FR	Incorporate comments		No	7/9/99	8/10/99
477	OU7	FR	Draft Final RI/FS Report (Phase I)		No	8/10/99	8/10/99
478	OU7	FR	Regulatory Review of Draft Final		No	8/11/99	9/10/99
479	OU7	FR	Incorporate comments		No	9/13/99	10/14/99
480	OU7	FR	Final RI/FS Report (Phase I)		No	10/14/99	10/14/99
481	OU7	FR	PP/ROD		No	10/7/99	5/16/00
482	OU7	FR	FFA Milestone - Draft PP (Phase I) - Soils	Yes	No	10/7/99	10/7/99
483	OU7	FR	Draft PP (Phase I)		No	10/7/99	10/7/99
484	OU7	FR	Regulatory Review of Draft		No	10/7/99	11/5/99
485	OU7	FR	Incorporate comments		No	11/8/99	12/8/99
486	OU7	FR	Draft Final PP (Phase I)		No	12/8/99	12/8/99
487	OU7	FR	Regulatory Review of Draft Final		No	12/9/99	1/10/00
488	OU7	FR	Incorporate comments		No	1/11/00	2/11/00
489	OU7	FR	Final PP (Phase I)		No	2/11/00	2/11/00
490	OU7	FR	FFA Milestone - Draft ROD (Phase I) - Soil	Yes	No	1/7/00	1/7/00
491	OU7	FR	Draft ROD (Phase I)		No	1/7/00	1/7/00
492	OU7	FR	Regulatory Review of Draft		No	1/7/00	2/7/00
493	OU7	FR	Incorporate comments		No	2/8/00	3/9/00
494	OU7	FR	Draft Final ROD (Phase I)		No	3/9/00	3/9/00
495	OU7	FR	Regulatory Review of Draft Final		No	3/10/00	4/11/00
496	OU7	FR	Incorporate comments		No	4/12/00	5/15/00
497	OU7	FR	Final ROD (Phase I)		No	5/15/00	5/15/00
498	OU8	LF5	Operable Unit 8 - Landfill 5		No	1/1/93	6/12/03
499	OU8	LF5	OU8 Created, Moved LF-5 from OU3		No	10/5/93	10/5/93
500	OU8	LF5	RI/FS Work Plan		Yes	10/4/93	9/2/94
501	OU8	LF5	FFA Milestone - Draft RI Work Plan	Yes	Yes	10/5/93	10/5/93
502	OU8	LF5	Draft RI Work Plan		Yes	10/5/93	10/5/93
503	OU8	LF5	Revised Draft Final RI Work Plan		Yes	3/17/94	3/17/94
504	OU8	LF5	Final RI Work Plan		Yes	7/7/94	7/7/94
505	OU8	LF5	Modification 1 to RI Work Plan		Yes	9/2/94	9/2/94
506	OU8	LF5	FFA Milestone - Draft MRAO	Yes	Yes	10/5/93	10/5/93
507	OU8	LF5	Draft MRAO		Yes	10/4/93	10/4/93
508	OU8	LF5	FFA Milestone - Draft FS Work Plan	Yes	Yes	11/5/93	11/5/93
509	OU8	LF5	Draft FS Work Plan		Yes	11/5/93	11/5/93
510	OU8	LF5	FFA Milestone - Draft MOSA	Yes	Yes	1/19/94	1/19/94
511	OU8	LF5	Draft MOSA		Yes	1/19/94	1/19/94
512	OU8	LF5	RI/FS		No	1/1/93	4/3/96
513	OU8	LF5	FFA Milestone - Draft Focused RI Report	Yes	Yes	8/12/94	8/12/94
514	OU8	LF5	Draft Focused RI Report		Yes	8/12/94	8/12/94
515	OU8	LF5	Draft Final Focused RI Report		Yes	11/14/94	11/14/94
516	OU8	LF5	Revised Draft Final Focused RI Report		Yes	2/10/95	2/10/95
517	OU8	LF5	Revised Draft Final Focused RI Report		Yes	4/28/95	4/28/95
518	OU8	LF5	Final Focused RI Report		Yes	7/18/95	7/18/95
519	OU8	LF5	FFA Milestone - Draft RI Report	Yes	No	8/12/95	8/12/95
520	OU8	LF5	Draft RI Report		No	1/1/93	1/1/93
521	OU8	LF5	FFA Milestone - Draft Focused FS Report	Yes	Yes	4/3/95	4/3/95
522	OU8	LF5	Draft Focused FS Report		Yes	4/4/95	4/4/95
523	OU8	LF5	Draft Final Focused FS Report		Yes	6/23/95	6/23/95
524	OU8	LF5	Final Focused FS Report		Yes	8/23/95	8/23/95
525	OU8	LF5	FFA Milestone - Draft FS Report	Yes	No	4/3/96	4/3/96
526	OU8	LF5	Draft FS Report - Not delivered		No	1/1/93	1/1/93
527	OU8	LF5	PP/ROD		No	1/1/94	9/25/96
528	OU8	LF5	FFA Milestone - Draft PP for Final Action	Yes	No	4/3/96	4/3/96
529	OU8	LF5	Draft PP for Final Action - Not delivered		No	1/1/94	1/1/94
530	OU8	LF5	FFA Milestone - Draft ROD for Final Action	Yes	No	9/25/96	9/25/96
531	OU8	LF5	Draft ROD for Final Action - Not delivered		No	1/1/94	1/1/94
532	OU8	LF5a	Landfill 5a Summary		No	1/1/94	12/31/98
533	OU8	LF5a	Landfill 5a FS/PP/ROD for IRA		No	1/1/94	1/12/98
534	OU8	LF5a	FFA Milestone - Draft Focused FS Report	Yes	Yes	4/3/95	4/3/95
535	OU8	LF5a	Draft Focused FS Report		Yes	4/4/95	4/4/95
536	OU8	LF5a	Draft Final Focused FS Report		Yes	6/23/95	6/23/95

ID	OU #	Site (T)	Task Name	FFA	Complete?	Start Date	Finish Date
637	OU8	LF5a	Final Focused FS Report		Yes	9/23/95	9/23/95
638	OU8	LF5a	FFA Milestone - Draft PP for Interim A	Yes	Yes	4/3/96	4/3/96
639	OU8	LF5a	Draft PP for Interim Action		Yes	4/8/96	4/8/96
640	OU8	LF5a	Draft Final PP for Interim Action		Yes	6/23/96	6/23/96
641	OU8	LF5a	Final PP for Interim Action		No	1/1/94	1/1/94
642	OU8	LF5a	FFA Milestone - Draft ROD for Interim	Yes	Yes	9/25/95	9/25/95
643	OU8	LF5a	Draft ROD for Interim Action		Yes	10/2/95	10/2/95
644	OU8	LF5a	Change pages to Draft ROD		Yes	10/20/95	10/20/95
645	OU8	LF5a	Draft Final ROD for Interim Action		Yes	12/25/95	12/25/95
646	OU8	LF5a	Revised Draft Final ROD for Interim A		Yes	1/18/96	1/18/96
647	OU8	LF5a	Final ROD for Interim Action		Yes	2/23/96	2/23/96
648	OU8	LF5a	Explanation of Significant Differences		Yes	1/12/98	1/12/98
649	OU8	LF5a	OU8 LANDFILL 5a	No	Yes	10/1/97	12/31/98
650	OU8	LF5a	100% DESIGN (DRAFT)	Yes	Yes	1/6/98	1/6/98
651	OU8	LF5a	100% DESIGN (DRAFT FINAL)	Yes	No	4/10/98	4/10/98
652	OU8	LF5a	100% DESIGN (FINAL)	Yes	No	5/10/98	5/10/98
653	OU8	LF5a	FORMAL DISPUTE DUE MISSED 10	Yes	No	1/6/98	1/6/98
654	OU8	LF5a	RAWP (DRAFT)	Yes	Yes	10/1/97	10/1/97
655	OU8	LF5a	RAWP (DRAFT FINAL)	Yes	No	2/10/98	2/10/98
656	OU8	LF5a	RAWP (FINAL)	Yes	No	4/12/98	4/12/98
657	OU8	LF5a	ESD (DRAFT)	Yes	No	1/20/98	1/20/98
658	OU8	LF5a	AGENCY COMMENTS ON ESD RCV	Yes	No	2/20/98	2/20/98
659	OU8	LF5a	ESD (DRAFT FINAL) & RTC	Yes	No	3/20/98	3/20/98
660	OU8	LF5a	ESD (FINAL)	Yes	No	4/20/98	4/20/98
661	OU8	LF5a	CONSTRUCTION	Yes	No	2/17/98	12/31/98
662	OU8	LF5a	Follow-on RD/RA for Interim Action		No	3/4/97	2/10/98
663	OU8	LF5a	Draft RD Work Plan		No	3/4/97	3/4/97
664	OU8	LF5a	Draft Final RD Work Plan		No	4/30/97	4/30/97
665	OU8	LF5a	Final RD Work Plan		No	4/28/97	4/28/97
666	OU8	LF5a	Draft PDAP		No	3/4/97	3/4/97
667	OU8	LF5a	Final PDAP		No	4/28/97	4/28/97
668	OU8	LF5a	Draft RA Work Plan		No	10/1/97	10/1/97
669	OU8	LF5a	60% Design		No	10/1/97	10/1/97
670	OU8	LF5a	100% Design (Draft)		No	2/10/98	2/10/98
671	OU8	LF5b,c	Summary		No	4/6/96	6/12/03
672	OU8	LF5b,c	R/FS Work Plan		No	4/6/96	10/12/01
673	OU8	LF5b,c	FFA Milestone - Draft RI Work Plan, M	Yes	Yes	4/5/96	4/5/96
674	OU8	LF5b,c	Draft RI Work Plan, Mod 4		Yes	4/5/96	4/5/96
675	OU8	LF5b,c	Draft Final RI Work Plan, Mod 4		Yes	10/10/96	10/10/96
676	OU8	LF5b,c	FFA Milestone - Draft RI Work Plan, G	Yes	No	1/12/01	1/12/01
677	OU8	LF5b,c	Draft RI Work Plan, GW		No	1/12/01	1/12/01
678	OU8	LF5b,c	Regulatory Review of Draft		No	6/13/01	7/12/01
679	OU8	LF5b,c	Incorporate comments		No	8/10/01	8/12/01
680	OU8	LF5b,c	Draft Final RI Work Plan, GW		No	8/13/01	8/13/01
681	OU8	LF5b,c	Regulatory Review of Draft Final		No	8/14/01	9/13/01
682	OU8	LF5b,c	Incorporate comments		No	9/14/01	10/12/01
683	OU8	LF5b,c	Final RI Work Plan, GW		No	10/12/01	10/12/01
684	OU8	LF5b,c	R/FS		No	6/12/01	9/12/02
685	OU8	LF5b,c	FFA Milestone - Draft Focused R/FS	Yes	No	6/12/01	6/12/01
686	OU8	LF5b,c	Draft Focused R/FS Report, Phase I		No	6/12/01	6/12/01
687	OU8	LF5b,c	Regulatory Review of Draft		No	6/13/01	7/12/01
688	OU8	LF5b,c	Incorporate comments		No	8/10/01	8/12/01
689	OU8	LF5b,c	Draft Final Focused R/FS Report, Phase I		No	8/13/01	8/13/01
690	OU8	LF5b,c	Regulatory Review of Draft Final		No	8/14/01	9/13/01
691	OU8	LF5b,c	Incorporate comments		No	9/14/01	10/12/01
692	OU8	LF5b,c	Final Focused R/FS Report, Phase I		No	10/12/01	10/12/01
693	OU8	LF5b,c	FFA Milestone - Draft Focused R/FS	Yes	No	6/12/02	6/12/02
694	OU8	LF5b,c	Draft Focused R/FS Report, GW		No	6/12/02	6/12/02
695	OU8	LF5b,c	Regulatory Review of Draft		No	6/12/02	7/11/02
696	OU8	LF5b,c	Incorporate comments		No	7/12/02	7/12/02
697	OU8	LF5b,c	Draft Final Focused R/FS Report, GW		No	7/12/02	7/12/02
698	OU8	LF5b,c	Regulatory Review of Draft Final		No	7/15/02	8/14/02
699	OU8	LF5b,c	Incorporate comments		No	8/15/02	9/12/02
700	OU8	LF5b,c	Final Focused R/FS Report, GW		No	9/12/02	9/12/02
701	OU8	LF5b,c	PPROD		No	10/12/01	10/12/03
702	OU8	LF5b,c	FFA Milestone - Draft PP (Phase I)	Yes	No	10/12/01	10/12/01
703	OU8	LF5b,c	Draft PP (Phase I)		No	10/12/01	10/12/01

ID	OU #	Site (T)	Task Name	FFA	Complete?	Start Date	Finish Date
604	OU8	LF5b.c	Regulatory Review of Draft		No	10/12/01	11/12/01
605	OU8	LF5b.c	Incorporate comments		No	11/13/01	11/13/01
606	OU8	LF5b.c	Draft Final PP (Phase I)		No	11/13/01	11/13/01
607	OU8	LF5b.c	Regulatory Review of Draft Final		No	11/14/01	12/14/01
608	OU8	LF5b.c	Incorporate comments		No	12/17/01	1/14/02
609	OU8	LF5b.c	Final PP (Phase I)		No	1/14/02	1/14/02
610	OU8	LF5b.c	FFA Milestone - Draft ROD (Phase I)	Yes	No	3/12/02	3/12/02
611	OU8	LF5b.c	Draft ROD (Phase I)		No	3/12/02	3/12/02
612	OU8	LF5b.c	Regulatory Review of Draft		No	3/12/02	4/10/02
613	OU8	LF5b.c	Incorporate comments		No	4/11/02	4/11/02
614	OU8	LF5b.c	Draft Final ROD (Phase I)		No	4/11/02	4/11/02
615	OU8	LF5b.c	Regulatory Review of Draft Final		No	4/12/02	5/14/02
616	OU8	LF5b.c	Incorporate comments		No	5/15/02	5/12/02
617	OU8	LF5b.c	Final ROD (Phase I)		No	6/12/02	6/12/02
618	OU8	LF5b.c	FFA Milestone - Draft PP (Groundwater)	Yes	No	10/12/02	10/12/02
619	OU8	LF5b.c	Draft PP (Groundwater)		No	10/12/02	10/12/02
620	OU8	LF5b.c	Regulatory Review of Draft		No	10/14/02	11/12/02
621	OU8	LF5b.c	Incorporate comments		No	11/13/02	11/13/02
622	OU8	LF5b.c	Draft Final PP (Groundwater)		No	11/13/02	11/13/02
623	OU8	LF5b.c	Regulatory Review of Draft Final		No	11/14/02	12/16/02
624	OU8	LF5b.c	Incorporate comments		No	12/17/02	1/14/03
625	OU8	LF5b.c	Final PP (Groundwater)		No	1/14/03	1/14/03
626	OU8	LF5b.c	FFA Milestone - Draft ROD (Groundw)	Yes	No	3/12/03	3/12/03
627	OU8	LF5b.c	Draft ROD (Groundwater)		No	3/12/03	3/12/03
628	OU8	LF5b.c	Regulatory Review of Draft		No	3/12/03	4/10/03
629	OU8	LF5b.c	Incorporate comments		No	4/11/03	4/11/03
630	OU8	LF5b.c	Draft Final ROD (Groundwater)		No	4/11/03	4/11/03
631	OU8	LF5b.c	Regulatory Review of Draft Final		No	4/14/03	5/14/03
632	OU8	LF5b.c	Incorporate comments		No	5/15/03	6/12/03
633	OU8	LF5b.c	Final ROD (Groundwater)		No	6/12/03	6/12/03
634	OU9		Operable Unit 9		No	1/1/93	7/15/04
635	OU9	LF2	Operable Unit 9 - Landfill 2		No	1/1/93	3/12/01
636	OU9	LF2	OU9 Created - Moved LF-2 from OU3		Yes	10/5/93	10/5/93
637	OU9	LF2	RI/FS Work Plan		Yes	1/1/93	1/10/97
638	OU9	LF2	FFA Milestone - Draft RI Work Plan	Yes	Yes	10/5/93	10/5/93
639	OU9	LF2	Draft RI Work Plan		Yes	1/1/93	1/1/93
640	OU9	LF2	Draft Final RI Work Plan		Yes	1/1/93	1/1/93
641	OU9	LF2	Final RI Work Plan		Yes	2/25/94	2/25/94
642	OU9	LF2	Modification 1 to RI Work Plan		Yes	9/2/94	9/2/94
643	OU9	LF2	Modification 4 to RI Work Plan		Yes	3/18/96	3/18/96
644	OU9	LF2	FFA Milestone - Draft MRAO	Yes	Yes	10/5/93	10/5/93
645	OU9	LF2	Draft MRAO		Yes	10/4/93	10/4/93
646	OU9	LF2	FFA Milestone - Draft FS Work Plan	Yes	Yes	11/5/93	11/5/93
647	OU9	LF2	Draft FS Work Plan		Yes	1/1/93	1/1/93
648	OU9	LF2	Draft Final FS Work Plan		Yes	1/1/93	1/1/93
649	OU9	LF2	Final Work FS Work Plan		Yes	1/1/93	1/1/93
650	OU9	LF2	FFA Milestone - Draft MDSA	Yes	Yes	1/19/94	1/19/94
651	OU9	LF2	Draft MDSA		Yes	1/12/94	1/12/94
652	OU9	LF2	RI/FS		Yes	1/1/93	1/10/97
653	OU9	LF2	FFA Milestone - Draft RI Work Plan	Yes	Yes	4/12/96	4/12/96
654	OU9	LF2	Draft RI Work Plan, Mod 5		Yes	4/12/96	4/12/96
655	OU9	LF2	Draft Final RI Work Plan, Mod 5		Yes	10/10/96	10/10/96
656	OU9	LF2	Final RI Work Plan, Mod 5		Yes	1/10/97	1/10/97
657	OU9	LF2	FFA Milestone - Draft RI Report	Yes	Yes	11/3/94	11/3/94
658	OU9	LF2	Draft RI Report		Yes	12/5/94	12/5/94
659	OU9	LF2	Draft Final RI Report		Yes	2/24/95	2/24/95
660	OU9	LF2	Revised Draft Final RI Report (Ph		Yes	4/24/95	4/24/95
661	OU9	LF2	Final RI Report (Phase I)		Yes	8/1/95	8/1/95
662	OU9	LF2	FFA Milestone - Draft FS Report	Yes	Yes	7/5/95	7/5/95
663	OU9	LF2	Draft FS Report (Phase I)		Yes	5/5/94	5/5/94
664	OU9	LF2	Final FS Report		Yes	1/1/93	1/1/93
665	OU9	LF2	PP/ROD		No	1/1/93	2/15/96
666	OU9	LF2	FFA Milestone - Draft PP	Yes	Yes	7/5/95	7/5/95
667	OU9	LF2	Draft PP (Phase I)		Yes	7/5/95	7/5/95
668	OU9	LF2	Draft Final PP		Yes	1/1/93	1/1/93
669	OU9	LF2	Final PP		Yes	1/1/93	1/1/93
670	OU9	LF2	FFA Milestone - Draft ROD	Yes	Yes	12/27/95	12/27/95

ID	OU #	Site (T)	Task Name	FFA	Complete?	Start Date	Finish Date
671	OU9	LF2	Draft ROD		Yes	2/15/96	2/15/96
672	OU9	LF2	Draft Final ROD		No	1/1/93	1/1/93
673	OU9	LF2	Final ROD		No	1/1/93	1/1/93
674	OU9	F2a.2b	LF2a and 2b		No	3/12/00	3/12/01
675	OU9	F2a.2b	FFA Milestone - Draft Focussed RI/FS	Yes	No	6/12/00	6/12/00
676	OU9	F2a.2b	Draft Focussed RI/FS, Phase II		No	6/12/00	6/12/00
677	OU9	F2a.2b	Regulatory Review of Draft		No	6/13/00	7/12/00
678	OU9	F2a.2b	Incorporate comments		No	7/13/00	8/14/00
679	OU9	F2a.2b	Draft Final Focussed RI/FS, Phase II		No	8/14/00	8/14/00
680	OU9	F2a.2b	Regulatory Review of Draft Final		No	8/15/00	9/12/00
681	OU9	F2a.2b	Incorporate comments		No	9/13/00	10/13/00
682	OU9	F2a.2b	Final Focussed RI/FS, Phase II		No	10/13/00	10/13/00
683	OU9	F2a.2b	FFA Milestone - Draft PP, Phase II	Yes	No	10/12/00	10/12/00
684	OU9	F2a.2b	Draft PP, Phase II		No	10/12/00	10/12/00
685	OU9	F2a.2b	Regulatory Review of Draft		No	10/13/00	11/13/00
686	OU9	F2a.2b	Incorporate comments		No	11/14/00	12/14/00
687	OU9	F2a.2b	Draft Final PP, Phase II		No	12/14/00	12/14/00
688	OU9	F2a.2b	Regulatory Review of Draft Final		No	12/15/00	1/12/01
689	OU9	F2a.2b	Incorporate comments		No	1/15/01	2/14/01
690	OU9	F2a.2b	Final PP, Phase II		No	2/14/01	2/14/01
691	OU9	F2a.2b	FFA Milestone - Draft ROD, Phase II	Yes	No	3/12/01	3/12/01
692	OU9	F2a.2b	Draft ROD, Phase II		No	3/12/00	3/12/00
693	OU9	F2a.2b	Regulatory Review of Draft		No	3/13/00	4/11/00
694	OU9	F2a.2b	Incorporate comments		No	4/12/00	5/12/00
695	OU9	F2a.2b	Draft Final ROD, Phase II		No	5/12/00	5/12/00
696	OU9	F2a.2b	Regulatory Review of Draft Final		No	5/15/00	6/12/00
697	OU9	F2a.2b	Incorporate comments		No	6/13/00	7/13/00
698	OU9	F2a.2b	Final ROD, Phase II		No	7/13/00	7/13/00
699	OU9	LF2c	OU9 LANDFILL 2c	No	Yes	10/30/97	12/31/98
700	OU9	LF2c	EE/CA (DRAFT)	Yes	Yes	10/30/97	10/30/97
701	OU9	LF2c	EE/CA (FINAL)	Yes	Yes	1/1/98	1/1/98
702	OU9	LF2c	ACTION MEMO (DRAFT)	Yes	Yes	12/12/97	12/12/97
703	OU9	LF2c	ACTION MEMO (DRAFT FINAL)	Yes	Yes	12/31/97	12/31/97
704	OU9	LF2c	ACTION MEMO (FINAL)	Yes	Yes	1/6/98	1/6/98
705	OU9	LF2c	PUBLIC COMMENT PERIOD	Yes	Yes	2/5/98	3/7/98
706	OU9	LF2c	PUBLIC MEETING	Yes	Yes	2/24/98	2/24/98
707	OU9	LF2c	PERFORMANCE SPECS (DESIGN) (	Yes	Yes	2/2/98	2/2/98
708	OU9	LF2c	PERFORMANCE SPECS (DESIGN) (	Yes	Yes	2/17/98	2/17/98
709	OU9	LF2c	PERFORMANCE SPECS (DESIGN) (	Yes	Yes	3/2/98	3/2/98
710	OU9	LF2c	CONSTRUCTION	Yes	No	4/28/98	12/31/98
711	OU9	LF2c	EE/CA, Action Memo for Interim Action		Yes	10/30/97	1/6/98
712	OU9	LF2c	Draft EE/CA		Yes	10/30/97	10/30/97
713	OU9	LF2c	Final EE/CA		Yes	1/6/98	1/6/98
714	OU9	LF2c	Draft Action Memo		Yes	12/12/97	12/12/97
715	OU9	LF2c	Draft Final Action Memo		Yes	12/31/97	12/31/97
716	OU9	LF4	Operable Unit 9 - Landfill 4		No	1/1/93	7/15/04
717	OU9	LF4	OU9 Created, Moved LF-4 from OU3		Yes	10/5/93	10/5/93
718	OU9	LF4	RI/FS Work Plan		Yes	1/1/93	1/10/97
719	OU9	LF4	FFA Milestone - Draft RI Work Plan	Yes	Yes	10/5/93	10/5/93
720	OU9	LF4	Draft RI Work Plan		Yes	1/1/93	1/1/93
721	OU9	LF4	Draft Final RI Work Plan		Yes	1/1/93	1/1/93
722	OU9	LF4	Final RI Work Plan		Yes	2/28/94	2/28/94
723	OU9	LF4	Modification 1 to RI Work Plan		Yes	9/2/94	9/2/94
724	OU9	LF4	Modification 4 to RI Work Plan		Yes	3/18/96	3/18/96
725	OU9	LF4	FFA Milestone - Draft MRAO	Yes	Yes	10/5/93	10/5/93
726	OU9	LF4	Draft MRAO		Yes	10/4/93	10/4/93
727	OU9	LF4	FFA Milestone - Draft FS Work Plan	Yes	No	11/5/93	11/5/93
728	OU9	LF4	Draft FS Work Plan		No	1/1/93	1/1/93
729	OU9	LF4	Draft Final FS Work Plan		No	1/1/93	1/1/93
730	OU9	LF4	Final Work FS Work Plan		No	1/1/93	1/1/93
731	OU9	LF4	FFA Milestone - Draft MDSA	Yes	Yes	1/19/94	1/19/94
732	OU9	LF4	Draft MDSA		Yes	1/12/94	1/12/94
733	OU9	LF4	FFA Milestone - Draft RI Work Plan, M	Yes	Yes	4/12/96	4/12/96
734	OU9	LF4	Draft RI Work Plan, Mod 5		Yes	4/12/96	4/12/96
735	OU9	LF4	Draft Final RI Work Plan, Mod 5		Yes	10/10/96	10/10/96
736	OU9	LF4	Final RI Work Plan, Mod 5		Yes	1/10/97	1/10/97
737	OU9	LF4	RI/FS		No	1/1/93	8/1/96

ID	OU #	Site	Task Name	FFA	Complete?	Start Date	Finish Date
738	OU9	LF4	FFA Milestone - Draft RI Report	Yes	Yes	11/3/94	11/3/94
739	OU9	LF4	Draft RI Report		Yes	12/5/94	12/5/94
740	OU9	LF4	Draft Final RI Report		Yes	2/24/95	2/24/95
741	OU9	LF4	Revised Draft Final RI Report (Phase I)		Yes	4/24/95	4/24/95
742	OU9	LF4	Final RI Report (Phase I)		Yes	8/1/95	8/1/95
743	OU9	LF4	FFA Milestone - Draft FS Report	Yes	Yes	7/5/95	7/5/95
744	OU9	LF4	Draft FS Report (Phase I)		Yes	5/5/94	5/5/94
745	OU9	LF4	Final FS Report		No	1/1/93	1/1/93
746	OU9	LF4	PP/ROD		No	1/1/93	2/15/96
747	OU9	LF4	FFA Milestone - Draft PP	Yes	Yes	7/5/95	7/5/95
748	OU9	LF4	Draft PP (Phase I)		Yes	7/5/95	7/5/95
749	OU9	LF4	Draft Final PP		Yes	1/1/93	1/1/93
750	OU9	LF4	Final PP		Yes	1/1/93	1/1/93
751	OU9	LF4	FFA Milestone - Draft ROD	Yes	Yes	12/27/95	12/27/95
752	OU9	LF4	Draft ROD		Yes	2/15/96	2/15/96
753	OU9	LF4	Draft Final ROD		No	1/1/93	1/1/93
754	OU9	LF4	Final ROD		No	1/1/93	1/1/93
755	OU9	LF4b	LF4b Summary		No	6/12/00	7/13/01
756	OU9	LF4b	FFA Milestone - Draft Focussed RI/FS	Yes	No	6/12/00	6/12/00
757	OU9	LF4b	Draft Focussed RI/FS, Phase II		No	6/12/00	6/12/00
758	OU9	LF4b	Regulatory Review of Draft		No	6/13/00	7/12/00
759	OU9	LF4b	Incorporate comments		No	7/13/00	8/14/00
760	OU9	LF4b	Draft Final Focussed RI/FS, Phase II		No	8/14/00	8/14/00
761	OU9	LF4b	Regulatory Review of Draft Final		No	8/15/00	9/12/00
762	OU9	LF4b	Incorporate comments		No	9/13/00	10/13/00
763	OU9	LF4b	Final Focussed RI/FS, Phase II		No	10/13/00	10/13/00
764	OU9	LF4b	FFA Milestone - Draft PP, Phase II	Yes	No	10/12/00	10/12/00
765	OU9	LF4b	Draft PP, Phase II		No	10/12/00	10/12/00
766	OU9	LF4b	Regulatory Review of Draft		No	10/13/00	11/13/00
767	OU9	LF4b	Incorporate comments		No	11/14/00	12/14/00
768	OU9	LF4b	Draft Final PP, Phase II		No	12/14/00	12/14/00
769	OU9	LF4b	Regulatory Review of Draft Final		No	12/15/00	1/12/01
770	OU9	LF4b	Incorporate comments		No	1/15/01	2/14/01
771	OU9	LF4b	Final PP, Phase II		No	2/14/01	2/14/01
772	OU9	LF4b	FFA Milestone - Draft ROD, Phase II	Yes	No	3/12/01	3/12/01
773	OU9	LF4b	Draft ROD, Phase II		No	3/12/01	3/12/01
774	OU9	LF4b	Regulatory Review of Draft		No	3/13/01	4/11/01
775	OU9	LF4b	Incorporate comments		No	4/12/01	5/14/01
776	OU9	LF4b	Draft Final ROD, Phase II		No	5/14/01	5/14/01
777	OU9	LF4b	Regulatory Review of Draft Final		No	5/15/01	6/12/01
778	OU9	LF4b	Incorporate comments		No	6/13/01	7/13/01
779	OU9	LF4b	Final ROD, Phase II		No	7/13/01	7/13/01
780	OU9	F4a, 4c	LF 4a and 4c Summary		No	6/12/03	7/15/04
781	OU9	F4a, 4c	FFA Milestone - Draft RI/FS Report, P	Yes	No	6/12/03	6/12/03
782	OU9	F4a, 4c	Draft RI/FS Report, Phase III		No	6/12/03	8/12/03
783	OU9	F4a, 4c	Regulatory Review of Draft		No	6/13/03	7/14/03
784	OU9	F4a, 4c	Incorporate comments		No	7/15/03	8/14/03
785	OU9	F4a, 4c	Draft Final RI/FS Report, Phase III		No	8/14/03	8/14/03
786	OU9	F4a, 4c	Regulatory Review of Draft Final		No	8/15/03	9/12/03
787	OU9	F4a, 4c	Incorporate comments		No	9/15/03	10/15/03
788	OU9	F4a, 4c	Final RI/FS Report, Phase III		No	10/15/03	10/15/03
789	OU9	F4a, 4c	FFA Milestone - Draft PP, Phase III	Yes	No	10/12/03	10/12/03
790	OU9	F4a, 4c	Draft PP, Phase III		No	10/12/03	10/12/03
791	OU9	F4a, 4c	Regulatory Review of Draft		No	10/13/03	11/11/03
792	OU9	F4a, 4c	Incorporate comments		No	11/12/03	12/12/03
793	OU9	F4a, 4c	Draft Final PP, Phase III		No	12/12/03	12/12/03
794	OU9	F4a, 4c	Regulatory Review of Draft Final		No	12/15/03	1/12/04
795	OU9	F4a, 4c	Incorporate comments		No	1/13/04	2/12/04
796	OU9	F4a, 4c	Final PP, Phase III		No	2/12/04	2/12/04
797	OU9	F4a, 4c	FFA Milestone - Draft ROD, Phase III	Yes	No	3/12/04	3/12/04
798	OU9	F4a, 4c	Draft ROD, Phase III		No	3/12/04	3/12/04
799	OU9	F4a, 4c	Regulatory Review of Draft		No	3/15/04	4/13/04
800	OU9	F4a, 4c	Incorporate comments		No	4/14/04	5/14/04
801	OU9	F4a, 4c	Draft Final ROD, Phase III		No	5/14/04	5/14/04
802	OU9	F4a, 4c	Regulatory Review of Draft Final		No	5/17/04	6/14/04
803	OU9	F4a, 4c	Incorporate comments		No	6/15/04	7/15/04
804	OU9	F4a, 4c	Final ROD, Phase III		No	7/15/04	7/15/04

ID	OU #	Site (T)	Task Name	FFA	Complete?	Start Date	Finish Date
805	OU10		Operable Unit 10		No	1/1/93	2/4/00
806	OU10	LF7	Operable Unit 10 - LF7		No	1/1/93	7/7/96
807	OU10	LF7	OU10 Created, Moved LF-7 from OU3		Yes	10/5/93	10/5/93
808	OU10	LF7	RIFS Work Plan		No	1/1/93	1/29/96
809	OU10	LF7	FFA Milestone - Draft RI Work Plan	Yes	Yes	10/5/93	10/5/93
810	OU10	LF7	Draft RI Work Plan		Yes	10/5/93	10/5/93
811	OU10	LF7	Draft Final RI Work Plan		Yes	1/1/94	1/1/94
812	OU10	LF7	Final RI Work Plan		Yes	2/23/94	2/26/94
813	OU10	LF7	Modification 1 to RI Work Plan		Yes	9/2/94	9/2/94
814	OU10	LF7	FFA Milestone - Draft MRAO	Yes	Yes	10/5/93	10/5/93
815	OU10	LF7	Draft MRAO		Yes	10/4/93	10/4/93
816	OU10	LF7	FFA Milestone - Draft FS Work Plan	Yes	Yes	11/5/93	11/5/93
817	OU10	LF7	Draft FS Work Plan		Yes	1/1/93	1/1/93
818	OU10	LF7	Draft Final FS Work Plan		Yes	1/1/93	1/1/93
819	OU10	LF7	Revised Draft Final FS Work Plan		Yes	1/29/96	1/29/96
820	OU10	LF7	Final Work FS Work Plan		Yes	1/1/93	1/1/93
821	OU10	LF7	FFA Milestone - Draft MDSA	Yes	Yes	1/19/94	1/19/94
822	OU10	LF7	Draft MDSA		Yes	1/19/94	1/19/94
823	OU10	LF7	RIFS		Yes	5/5/95	7/7/96
824	OU10	LF7	FFA Milestone - Draft RI Report	Yes	Yes	5/5/95	5/5/95
825	OU10	LF7	Draft RI Report		Yes	5/5/95	5/5/95
826	OU10	LF7	Draft Final RI Report		Yes	8/25/95	8/25/95
827	OU10	LF7	Final RI Report		Yes	7/7/96	7/7/96
828	OU10	LF7	FFA Milestone - Draft FS Report	Yes	Yes	1/4/96	1/4/96
829	OU10	LF7	PP/ROD		Yes	1/4/96	6/27/96
830	OU10	LF7	FFA Milestone - Draft PP	Yes	Yes	1/4/96	1/4/96
831	OU10	LF7	FFA Milestone - Draft ROD	Yes	Yes	6/27/96	6/27/96
832	OU10	LF7a	Operable Unit 10 - LF7a		No	4/19/96	2/4/00
833	OU10	LF7a	RIFS Work Plan		Yes	4/19/96	10/10/96
834	OU10	LF7a	FFA Milestone - Draft RI Work Plan, M	Yes	Yes	4/19/96	4/19/96
835	OU10	LF7a	Draft RI Work Plan, Mod 6		Yes	4/19/96	4/19/96
836	OU10	LF7a	Draft Final RI Work Plan, Mod 6		Yes	10/10/96	10/10/96
837	OU10	LF7a	RIFS		No	2/5/99	6/9/99
838	OU10	LF7a	FFA Milestone - Draft Focused RIFS,	Yes	No	2/5/99	2/5/99
839	OU10	LF7a	Draft Focused RIFS, Phase II (Source		No	2/5/99	2/5/99
840	OU10	LF7a	Regulatory Review of Draft (Source)		No	2/5/99	3/8/99
841	OU10	LF7a	Incorporate comments		No	3/9/99	4/8/99
842	OU10	LF7a	Draft Final Focused RIFS, Phase II (S		No	4/8/99	4/8/99
843	OU10	LF7a	Regulatory Review of Draft Final		No	4/8/99	5/7/99
844	OU10	LF7a	Incorporate comments		No	5/10/99	6/9/99
845	OU10	LF7a	Final Focused RIFS, Phase II (Source		No	6/9/99	6/9/99
846	OU10	LF7a	PP/ROD		No	7/5/99	2/4/00
847	OU10	LF7a	FFA Milestone - Draft PP, Phase II (So	Yes	No	7/5/99	7/5/99
848	OU10	LF7a	Draft PP, Phase II (Source)		No	7/5/99	7/5/99
849	OU10	LF7a	Regulatory Review of Draft		No	7/5/99	8/3/99
850	OU10	LF7a	Incorporate comments		No	8/4/99	9/3/99
851	OU10	LF7a	Draft Final PP, Phase II (Source)		No	9/3/99	9/3/99
852	OU10	LF7a	Regulatory Review of Draft Final		No	9/6/99	10/4/99
853	OU10	LF7a	Incorporate comments		No	10/5/99	11/4/99
854	OU10	LF7a	Final PP, Phase II (Source)		No	11/4/99	11/4/99
855	OU10	LF7a	FFA Milestone - Draft ROD, Phase II (	Yes	No	10/5/99	10/5/99
856	OU10	LF7a	Draft ROD, Phase II (Source)		No	10/5/99	10/5/99
857	OU10	LF7a	Regulatory Review of Draft		No	10/5/99	11/3/99
858	OU10	LF7a	Incorporate comments		No	11/4/99	12/6/99
859	OU10	LF7a	Draft Final ROD, Phase II (Source)		No	12/6/99	12/6/99
860	OU10	LF7a	Regulatory Review of Draft Final		No	12/7/99	1/4/00
861	OU10	LF7a	Incorporate comments		No	1/5/00	2/4/00
862	OU10	LF7a	Final ROD, Phase II (Source)		No	2/4/00	2/4/00
863	OU10	LF7b	OU10 - LF7b		No	2/8/96	2/8/96
864	OU10	LF7b	RI Work Plan		Yes	4/19/96	10/10/96
865	OU10	LF7b	FFA Milestone - Draft RI Work Plan, M	Yes	Yes	4/19/96	4/19/96
866	OU10	LF7b	Draft RI Work Plan, Mod 6		Yes	4/19/96	4/19/96
867	OU10	LF7b	Draft Final RI Work Plan, Mod 6		Yes	10/10/96	10/10/96
868	OU10	LF7b	RIFS, IRA		Yes	3/8/96	11/7/97
869	OU10	LF7b	FFA Milestone - Draft Focused RIFS,	Yes	Yes	11/7/97	11/7/97
870	OU10	LF7b	Draft Focused RIFS, Phase I		Yes	3/8/96	3/8/96
871	OU10	LF7b	Draft Final Focused RIFS, Phase I		Yes	12/20/96	12/20/96

ID	OU #	Site / T	Task Name	FFA	Complete?	Start Date	Finish Date
872	OU10	LF7b	Final Focused RI/FS, Phase I		Yes	3/21/97	3/21/97
873	OU10	LF7b	PP/ROD		No	4/7/98	2/8/99
874	OU10	LF7b	FFA Milestone - Draft PP, Phase I	Yes	No	4/7/98	4/7/98
875	OU10	LF7b	Draft PP, Phase I		No	4/7/98	4/7/98
876	OU10	LF7b	Regulatory Review of Draft		No	4/7/98	5/8/98
877	OU10	LF7b	Incorporate comments		No	5/7/98	6/4/98
878	OU10	LF7b	Draft Final PP, Phase I		No	6/4/98	6/4/98
879	OU10	LF7b	Regulatory Review of Draft Final		No	6/5/98	7/8/98
880	OU10	LF7b	Incorporate comments		No	7/7/98	8/8/98
881	OU10	LF7b	Final PP, Phase I		No	8/8/98	8/8/98
882	OU10	LF7b	FFA Milestone - Draft ROD, Phase I	Yes	No	10/7/98	10/7/98
883	OU10	LF7b	Draft ROD, Phase I		No	10/7/98	10/7/98
884	OU10	LF7b	Regulatory Review of Draft		No	10/7/98	11/5/98
885	OU10	LF7b	Incorporate comments		No	11/5/98	12/7/98
886	OU10	LF7b	Draft Final ROD, Phase I		No	12/7/98	12/7/98
887	OU10	LF7b	Regulatory Review of Draft Final		No	12/8/98	1/7/99
888	OU10	LF7b	Incorporate comments		No	1/8/99	2/8/99
889	OU10	LF7b	Final ROD, Phase I		No	2/8/99	2/8/99
890	OU10	FPTA1	OU10 - Fire Protection Training Area 1 (Solis		No	1/1/93	2/8/99
891	OU10	FPTA1	FPTA1 Moved from OU 5 to OU10		Yes	10/5/93	10/5/93
892	OU10	FPTA1	RI Work Plan		Yes	4/19/96	10/10/96
893	OU10	FPTA1	FFA Milestone - Draft RI Work Plan, M	Yes	Yes	4/19/96	4/19/96
894	OU10	FPTA1	Draft RI Work Plan, Mod 6		Yes	4/19/96	4/19/96
895	OU10	FPTA1	Draft Final RI Work Plan, Mod 6		Yes	10/10/96	10/10/96
896	OU10	FPTA1	RI/FS, IRA		No	1/1/93	1/7/97
897	OU10	FPTA1	FFA Milestone - Draft PP for Bioventing	Yes	Yes	5/1/96	5/1/96
898	OU10	FPTA1	Draft PP for Bioventing IRA		Yes	7/7/96	7/7/96
899	OU10	FPTA1	Draft Final PP for Bioventing IRA		Yes	1/1/93	1/1/93
900	OU10	FPTA1	Final PP for Bioventing IRA		Yes	4/17/97	4/17/97
901	OU10	FPTA1	FFA Milestone - Draft ROD for Biovent	Yes	No	6/28/96	6/28/96
902	OU10	FPTA1	Draft ROD for Bioventing IRA		No	1/1/93	1/1/93
903	OU10	FPTA1	Draft Final ROD for Bioventing IRA		No	1/1/93	1/1/93
904	OU10	FPTA1	Final ROD for Bioventing IRA		No	1/1/93	1/1/93
905	OU10	FPTA1	FFA Milestone - Draft Focused RI/FS	Yes	Yes	11/7/97	11/7/97
906	OU10	FPTA1	Draft Focused RI/FS		Yes	3/8/96	3/8/96
907	OU10	FPTA1	Draft Final Focused RI/FS		Yes	12/20/96	12/20/96
908	OU10	FPTA1	Final Focused RI/FS		Yes	3/21/97	3/21/97
909	OU10	FPTA1	PP/ROD		No	4/7/98	2/8/99
910	OU10	FPTA1	FFA Milestone - Draft PP, Phase I	Yes	No	4/7/98	4/7/98
911	OU10	FPTA1	Draft PP, Phase I		No	4/7/98	4/7/98
912	OU10	FPTA1	Regulatory Review of Draft		No	4/7/98	5/8/98
913	OU10	FPTA1	Incorporate comments		No	5/7/98	6/4/98
914	OU10	FPTA1	Draft Final PP, Phase I		No	6/4/98	6/4/98
915	OU10	FPTA1	Regulatory Review of Draft Final		No	6/5/98	7/8/98
916	OU10	FPTA1	Incorporate comments		No	7/7/98	8/8/98
917	OU10	FPTA1	Final PP, Phase I		No	8/8/98	8/8/98
918	OU10	FPTA1	FFA Milestone - Draft ROD, Phase I	Yes	No	10/7/98	10/7/98
919	OU10	FPTA1	Draft ROD, Phase I		No	10/7/98	10/7/98
920	OU10	FPTA1	Regulatory Review of Draft		No	10/7/98	11/5/98
921	OU10	FPTA1	Incorporate comments		No	11/5/98	12/7/98
922	OU10	FPTA1	Draft Final ROD, Phase I		No	12/7/98	12/7/98
923	OU10	FPTA1	Regulatory Review of Draft Final		No	12/8/98	1/7/99
924	OU10	FPTA1	Incorporate comments		No	1/8/99	2/8/99
925	OU10	FPTA1	Final ROD, Phase I		No	2/8/99	2/8/99
926	OU10	FPTA1	Follow-on RD/RA work		No	4/10/95	10/6/97
927	OU10	FPTA1	WP for expanding Large-Scale Biovent		No	4/10/95	4/10/95
928	OU10	FPTA1	Draft PDAP		No	5/8/97	5/8/97
929	OU10	FPTA1	Draft Final PDAP		No	10/5/97	10/5/97
930	OU10	FPTA1	Draft RD Work Plan		No	5/8/97	5/8/97