

FY2012

FORT SILL

Army Defense Environmental Restoration Program

Installation Action Plan

Printed 24 January 2013

Table of Contents

Statement Of Purpose.....	1
Acronyms.....	2
Site Alias List.....	4
Installation Information.....	5
5-Year / Periodic Review Summary.....	6
Land Use Control (LUC) Summary.....	7
Cleanup Program Summary.....	8
Installation Restoration Program.....	10
IRP Summary.....	11
IRP Contamination Assessment.....	12
IRP Previous Studies.....	13
Installation Restoration Program Site Descriptions.....	16
FTSL-008 LANDFILL 4 (GUNNERY HILL).....	17
FTSL-010 LANDF 6(MISSION RIDGE/WHITE WOLF BRIDGE.....	18
FTSL-011 LANDFILL 7(HUMMEL KNOLL).....	19
FTSL-012 LANDFILL 8(NORTH FIELD).....	20
FTSL-013 LANDFILL 9 (PEACH TREE CROSSING).....	21
FTSL-014 LANDFILL 10.....	23
FTSL-047 EOD LANDFILL (QUANAHA RANGE).....	24
PBA@FTSL PBA@FTSL_IR.....	25
Installation Restoration Program Site Closeout (No Further Action) Sites Summary.....	27
Installation Restoration Program Schedule.....	29
Installation Restoration Program Milestones.....	29
IRP Schedule Chart.....	32
Military Munitions Response Program.....	33
MMRP Summary.....	34
MMRP Contamination Assessment.....	35
MMRP Previous Studies.....	36
Military Munitions Response Program Site Descriptions.....	37

Table of Contents

FSILL-001-R-02 SOUTHWEST CANTONMENT AREA.....	38
FSILL-002-R-01 MB2/MB3 SMALL ARMS RANGES.....	39
Military Munitions Response Program Site Closeout (No Further Action) Sites Summary.....	40
MMRP Schedule.....	41
Military Munitions Response Program Milestones.....	41
MMRP Schedule Chart.....	42

Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multiyear cleanup program for an installation. The plan identifies environmental cleanup requirements at each site or area of concern (AOC), and proposes a comprehensive, installation-wide approach, along with the costs and schedules associated with conducting investigations and taking the necessary remedial actions (RA).

In an effort to coordinate planning information between the restoration manager, the US Army Environmental Command (USAEC), Fort Sill (FTSL), the Installation Management Command - West Region (IMCOM-West), the executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules and budgets for all major Army installation cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change.

Acronyms

AEDB-R	Army Environmental Database - Restoration
AOC	Area of Concern
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CESWT	Corps of Engineers - Tulsa District
CFR	Code of Federal Regulation
CLIN	Contract Line Item Number
CTT	Closed, Transferred, and Transferring
DD	Decision Document
DERP	Defense Environmental Restoration Program
DMM	Discarded Military Munitions
EOD	Explosive Ordnance Disposal
ER,A	Environmental Restoration, Army
FARTC	Field Artillery Replacement Training Center
FRA	Final Remedial Action
FSILL	Fort Sill (AEDB-R designation for Fort Sill)
FTSL	Fort Sill
FY	Fiscal Year
HRR	Historical Records Review
ID	Identity or Identification
IMCOM	Installation Management Command
IRA	Interim Removal Action
JEP	Joint Execution Plan
JIIM	Joint, Interagency, Intergovernmental, and Multinational
K	thousand
LF	landfill
LTM	Long-Term Management
LUC	Land Use Control
mm	millimeter
MMRP	Military Munitions Response Program
MRA	Munitions Response Area
MRS	Munitions Response Site
MRSPP	Munition Response Site Prioritization Protocol
MSSL	Medium-Specific Screening Level
N/A	Not Applicable
NPL	National Priorities List
ODEQ	Oklahoma Department of Environmental Quality
PAH	Polycyclic Aromatic Hydrocarbons
PBA	Performance-Based Acquisition
PBA	Powder Burn Areas
PMP	Project Management Plan
POL	Petroleum, Oils and Lubricants
ppm	parts per million
PWS	Performance Work Statement
QASP	Quality Assurance Surveillance Plan
RA(C)	Remedial Action (Construction)

Acronyms

RAB	Restoration Advisory Board
RC	Response Complete
RD	Remedial Design
RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
S&R	Supervision and Review
SWMU	Solid Waste Management Unit
TAPP	Technical Assistance for Public Participation
TBD	To Be Determined
TRC	Technical Review Committee
US	United States
USACE	US Army Corps of Engineers
USAEC	US Army Environmental Command
USAFCOEFS	US Army Fires Center of Excellence and Fort Sill
UST	Underground Storage Tank

Site Alias List

AEDB-R Site ID to Alias List

AEDB-R #	Alias
FSILL-001-R-02	
FSILL-002-R-01	CC-FTSL002
FTSL-008	SWMU#004
FTSL-010	SWMU#006
FTSL-011	SWMU#007
FTSL-012	SWMU#008
FTSL-013	SWMU#009
FTSL-014	SWMU#010
FTSL-047	SWMU#018
PBA@FTSL	

Installation Information

Installation Locale

Installation Size (Acreage): 93828.73

City: Fort Sill

County: Comanche

State: Oklahoma

Other Locale Information

The US Army Fires Center of Excellence and Fort Sill (USAFCOEFS) consist of 93,828.73 acres that stretch approximately 26 miles in an east-west direction in Comanche County, southwestern Oklahoma. The installation has an average width of six miles. The Fort Sill cantonment area, on the southeastern part of the post, is adjacent to the city of Lawton. Large numbers of housing developments are being developed on the southern and northern boundary line of Fort Sill. Rural areas and the Wichita Mountains National Wildlife Refuge surround the remaining portion of the installation.

Installation Mission

The mission of the USAFCOEFS is to train, educate, and develop Soldiers and leaders; create and develop capabilities; engage, collaborate, and partner with stakeholders; sustain and provide a Fires Force to support Joint Warfighting Commanders across the spectrum of operations in the Joint, Interagency, Intergovernmental, and Multinational (JIIM) environment.

Lead Organization

Lead Executing Agencies for Installation

US Army Corps of Engineers - Tulsa District (CESWT)

Regulator Participation

Federal US Environmental Protection Agency (USEPA), Region VI

State Oklahoma Department of Environmental Quality (ODEQ)

National Priorities List (NPL) Status

FORT SILL is not on the NPL

Installation Restoration Advisory Board (RAB)/Technical Review Committee (TRC)/Technical Assistance for Public Participation (TAPP) Status

The community has expressed no sufficient, sustained interest in a RAB.

Installation Program Summaries

IRP

Primary Contaminants of Concern: Explosives, Metals, Pesticides, Polycyclic Aromatic Hydrocarbons (PAH)

Affected Media of Concern: Groundwater, Soil, Surface Water

MMRP

Primary Contaminants of Concern: Metals, Munitions and explosives of concern (MEC), Munitions constituents (MC)

Affected Media of Concern: Sediment, Soil

5-Year / Periodic Review Summary

5-Year / Periodic Review Summary

Status	Start Date	End Date	End FY
Complete	200706	200709	2007
Planned	201306	201403	2014

Last Completed 5-Year / Periodic Review Details

Associated ROD/DD Name	Sites
Historical Landfills	FTSL-008, FTSL-009, FTSL-010, FTSL-011, FTSL-012, FTSL-013, FTSL-014, FTSL-047

Results All sites still protective of human health and the environment.

Actions none required

Plans none required

Recommendations and Implementation Plans:

--

Land Use Control (LUC) Summary

LUC Title: Historical Landfill LUCs

Site(s): FTSL-008, FTSL-010, FTSL-011, FTSL-012, FTSL-013, FTSL-014, FTSL-047

ROD/DD Title: Historical Landfills

Location of LUC

Land-Use-Controls have been implemented at Historical Landfills throughout the Fort Sill Military Reservation. These are:
FTSL-008 LANDFILL 4 (GUNNERY HILL), NW intersection of Sheridan Road & Ft. Sill Blvd.
FTSL-010 LANDFILL 6(MISSION RIDGE/WHITE WOLF BRIDGE), SW of intersection of Apache Gate Road and Knob Hill Road.
FTSL-011 LANDFILL 7(HUMMEL KNOLL), NE of intersection of Apache Gate Road and Knob Hill Road.
FTSL-012 LANDFILL 8(NORTH FIELD), North of Quinette Road and along entirety of Otipoby Road.
FTSL-013 LANDFILL 9 (PEACH TREE CROSSING), SW of intersection of Quinette Road and North Field Road.
FTSL-014 LANDFILL 10, WSW of intersection of Dodge Hill Road and Beef Creek Road.
FTSL-047 EOD LANDFILL (QUANAH RANGE), 3 miles west and 2 miles north of intersection of HW 62 and HW 115. Quanah Range HQ is controlled access, range escort required.

A Removal Action was completed at FTSL-009 LANDFILL 5 (SITTING BEAR CREEK), east of intersection of Geronimo Road & Fergusson Road with meeting clean-closure conditions. This site is removed from LUC requirements.

Land Use Restriction: Landfill restriction - Prohibit activities that would impact the LF cap (or cover system) and drainage system, Landfill restriction - Prohibit excavation on LF cap or cover system, Landfill restriction - Prohibit installation of utility system lines through the site, Landfill restriction - Restrict access to the site, Landfill restriction - Restrict construction of buildings that may interfere with LF cap or cover system, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Media specific restriction - restrict withdrawal or use of groundwater for agricultural/irrigation purposes, Media specific restriction - restrict withdrawal or use of groundwater w/out treatment, Restrict land use - Mitigation area(s) protection, Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

Types of Engineering Controls: Signs

Types of Institutional Controls: Deed Restrictions, Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on land use

Date in Place: 200705

Modification Date: 201202

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: METALS, PAH, PESTICIDES

Additional Information

N/A

Cleanup Program Summary

Installation Historic Activity

Fort Sill had its beginnings as an isolated cavalry post in Indian Territory and was founded on Jan. 8, 1869, by General Philip H. Sheridan. On Oct. 7, 1871, 23,040 acres were acquired by executive order to establish FTSL as a military reservation. During the 1870s, the Buffalo Soldiers of the 10th Cavalry constructed the permanent buildings, which today comprise the Old Fort Sill National Historic Landmark District. On Feb. 26, 1897, nearly 27,000 acres were added by executive order. In 1902 the 29th Battery of Field Artillery was assigned to FTSL. This event marked the beginning of the transformation of FTSL from a cavalry post to a field artillery center. In September 1907 some 1,200 additional acres were added to the installation by executive order. In June 1911 the School of Fire for Field Artillery was established at FTSL, and in 1915 the 1st Aero Squadron, the first US military aircraft unit, was assigned to the post. This led to the establishment of the Henry Post Airfield in 1917. In 1940 some 20,200 acres were purchased from private landowners and between 1941 and 1943 slightly over 2,500 acres were transferred from the Department of the Interior to FTSL. The Artillery Center was established at FTSL on Nov. 1, 1946. Acquisition of the final 20,240 acres for the installation was completed in 1957 by purchases from private landowners, bringing FTSL to 94,221 acres. Roughly 392 acres was transferred as a National Cemetery, bringing the current acreage to approximately 93,828 acres. FTSL is currently the home of the US Army Field Artillery Center and one of the Army's premier power projection platforms.

In 1987 FTSL applied for a Part B permit under Section 3004(u) of the Resource Conservation and Recovery Act (RCRA). In order to comply with the requirements of the permitting process, the installation had to address corrective action for releases of hazardous waste/materials from identified solid waste management units (SWMUs). In January 1987 Fort Sill requested that the US Army Environmental Hygiene Agency (USAEHA) conduct an evaluation of the FTSL SWMUs. In 1990 PRC Environmental Management, Inc., under contract with the USEPA, conducted a RCRA facility assessment (RFA) at FTSL and prepared an RFA report which was released on April 13, 1990. In 1991 FTSL withdrew its Part B permit application and began operating as a less than 90-day generator.

In 1993 the US Environmental Protection Agency (USEPA) proposed a RCRA 3008(h) consent order against FTSL. The intent of this order was to ensure that the remediation of FTSL's already identified SWMUs were not ignored as a result of the withdrawal of the Fort Sill Part B application. During the negotiation of this order, FTSL was able to demonstrate to the USEPA Region VI that the 120 SWMUs identified during the FTSL RFA were being addressed in a timely and appropriate manner. The conclusion of the USEPA Region VI and FTSL was that the system was working efficiently without the need for a costly and time-consuming RCRA 3008(h) consent order. FTSL operates under the voluntary cleanup program managed within the guidelines of the Installation Restoration Program (IRP) and Defense-State Memorandum of Agreement (DSMOA) process as opposed to a formal regulatory driven approach.

FTSL has received no further action (NFA) approval/concurrence letters for all IRP sites for which "formal" closeout reports are pending. A review of these reports appears in the DSMOA joint execution plan (JEP) for FTSL IRP.

FTSL has implemented an installation-wide land use control (LUC) plan coordinated with the master planning, environmental and installation command staff. The final version of the implementation plan was completed in 2010. Details on land use restrictions are contained in the Army Environmental Database - Restoration (AEDB-R) which is updated annually to the IAP.

Installation Program Cleanup Progress

IRP

Prior Year Progress: Landfill maintenance and LUCs continued in accordance with the Installation-wide LUC implementation plan. A performance-based acquisition (PBA) contract continues to perform long-term management (LTM) of the historical landfill sites and completed the removal action at Landfill 5 (FTSL-009). Obtained clean-closure at Landfill 5.

Future Plan of Action: Five-year reviews and maintenance of LUCs at landfills FTSL-008, FTSL-010, FTSL-011, FTSL-012, FTSL-013, FTSL-014, and FTSL-047 will continue. Removal action at FTSL-002-R-01, MB2/3 Small Arms Ranges. Remove FTSL-009 from LUCs.

MMRP

Prior Year Progress: The Military Munitions Response Program (MMRP) remedial investigations/feasibility study (RI/FS) for the FSILL-001-R-01 and FSILL-002-R-01 sites were completed. ODEQ concurred with an NFA decision for FSILL-001-R-01 on Nov. 8, 2011.

Future Plan of Action: A removal action will be conducted at FSILL-002-R-01. Removal action is anticipated to begin in FY13.

Cleanup Program Summary

Consultation with the Tribes under Section 106 will continue.

FORT SILL
Army Defense Environmental Restoration Program
Installation Restoration Program

IRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 70/62

Installation Site Types with Future and/or Underway Phases

7 Landfill
 (FTSL-008, FTSL-010, FTSL-011, FTSL-012, FTSL-013, FTSL-014, PBA@FTSL)
 1 Unexploded Munitions/Ordnance
 (FTSL-047)

Most Widespread Contaminants of Concern

Explosives, Metals, Pesticides, Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern

Groundwater, Soil, Surface Water

Completed Remedial Actions (Interim Remedial Actions/ Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY
FTSL-027	POWDER BURN AREA 2(BALD RIDGE ROAD)	FRA	WASTE REMOVAL - SOILS	1996
FTSL-089	DUMPING SITE AT KETCH LAKE BUNKER	FRA	WASTE REMOVAL - SOILS	1996
FTSL-044	USED OIL USTS (81) TANKS	FRA	REMOVAL	1997
FTSL-060	BUILDING 4700 - HOSPITAL LABORATORY	FRA	REMOVAL	1997
FTSL-029	POWDER BURN AREA 4(CHRYSTIE HILL)	FRA	WASTE REMOVAL - SOILS	1999
FTSL-051	ASPHALT SPILL SITE	FRA	WASTE REMOVAL - SOILS	2002
FTSL-090	OLD MEDICAL WASTE INCINERATOR	FRA	WASTE REMOVAL - SOILS	2002

Duration of IRP

Date of IRP Inception: 198708

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201003/201003

Date of IRP completion including Long Term Management (LTM): 201909

IRP Contamination Assessment

Contamination Assessment Overview

In January 1987, the USAEHA prepared a Hazardous Waste Consultation - Evaluation of SWMUs report. This report was conducted to assist with the RCRA Part B permit application for the installation's hazardous waste container storage facility by identifying and evaluating all SWMUs on the installation as required by 40 Code of Federal Regulation (CFR) 264.101.

In April 1990, an RFA report was prepared by PRC Environmental Management, Inc. and ICF Inc. for the USEPA, Region VI. The report was based on information reviewed from files at USEPA Region VI and a Visual Site Inspection (VSI) conducted by ICF from Jan. 8 through Jan. 12, 1990. Based on the review of the available information and observations made during the VSI, 120 SWMUs were identified at FTSL.

In July 1990, the USAEHA conducted an environmental program review. The purpose of the review was to evaluate the functional and technical aspects of the air pollution, environmental noise, hazardous waste, pest management, wastewater and potable/recreational water quality, and non-ionizing radiation programs. The review evaluated the potential for groundwater contamination, assessed compliance with applicable federal, state, local and Department of the Army environmental regulations, and assisted with the identification of existing and potential environmental hazards.

In April 1991, Radian Corporation conducted sampling under an RFA for the US Army Corps of Engineers (USACE), Kansas City District. The assessment was prepared for 16 SWMUs at FTSL, which were selected from a group of 43. The 43 sites were originally identified in the Evaluation of Solid Wastes Management Units issued by the USAEHA in 1987. The 16 sites identified for the RFA included active and inactive landfills, open ordnance detonation areas, an ordnance disposal pit, a waste battery acid disposal pit, and a fire training area. The objective of the facility assessment was to provide a preliminary determination of the presence or absence of chemical contamination at these SWMUs.

Sixty-nine of the FTSL SWMUs have been included in the IRP program and the AEDB-R. These 69 sites consist of landfills, powder burn areas, explosive ordnance disposal (EOD) sites, spill locations, contaminated underground storage tank (UST) sites, and other miscellaneous sites.

Nine of the FTSL historic landfills (AEDB-R Nos. FTSL-009 thru -016 and FTSL-020) were determined by USEPA Region VI (in their proposed RCRA 3008(h) consent order) to pose a threat to the shallow alluvial groundwater along Cache Creek. The groundwater monitoring systems at these sites were evaluated, upgraded and sampled to ensure that these landfills were not contaminating Cache Creek. The sampling effort was intended to collect groundwater samples for five years to establish a basis for the closing or continued monitoring/remediation of the sites. In June 2000 this groundwater monitoring program was completed.

Four of FTSL's eight historic powder burn areas (AEDB-R Nos. FTSL-027, -029, -030, -032) were determined to be contaminated with excessively high levels of lead in surface soils [40,000 parts per million (ppm)]. These sites posed significant off-site migration hazards for sediment migration due to the colloidal nature of the soils in the area and the affinity of lead for such soil particulates. The threat of contaminant migration has been mitigated at these four sites by the completion of RAs. RAs at FTSL-030 and FTSL-032 were funded with other funds. On July 12, 2001 the ODEQ closed all eight historic powder burn areas.

Cleanup Exit Strategy

All IRP sites with projected funding are landfills with materials left in place. Therefore, the LTM phase will include annual assessment with five-year reviews and LUCs in accordance with the installation-wide LUC implementation plan. The LTM phase will continue indefinitely. These sites are included in the PBA contract that was awarded in 2010.

IRP Previous Studies

Year	Title	Author	Date
1986	Geohydrologic Study, No.38-26-0908-87	USAEHA	APR-1986
1987	Hazardous Waste Consultation - Evaluation of Solid Waste Management Units, No.37-26-1650-87	USAEHA	JAN-1987
1990	RCRA Facility Assessment Report, US Environmental Protection Agency (EPA), Region VI	PRC Environmental Management, Inc. and ICF Incorporated	APR-1990
	Environmental Program Review	USAEHA	JUL-1990
1991	Conducted Sampling Under a RCRA Facilities Assessment	US Army Corps of Engineers, Kansas City District, Radian Corporation	APR-1991
1995	Draft Closure Report DOL Area Site SWMU, Fort Sill, Oklahoma	IT Corporation for the CESWT	JUL-1995
1996	Powder Burn Areas Site Investigation	US Army Corps of Engineers, Tulsa District, Crystal Creek Environmental Solutions, Inc	JAN-1996
	Powder Burn Areas Site Investigation (PBAs 1, 2, 3, 4, 6, 8), Fort Sill, Oklahoma	Crystal Creek Environmental Solutions, Inc	JAN-1996
	Site Investigation of 34 SWMUs, Fort Sill, Oklahoma	Parsons Engineering Science	JUN-1996
	Site Closure Report Remedial Action-East Range PBA, Two Volume Set (SWMU 024)	OHM Remediation Services, Corp.	JUL-1996
	Site Closure Report Remedial Action, Tower Two PBA, Two Volume Set (SWMU 027)	OHM Remediation Services, Corp.	JUL-1996
	Closure Report POL Storage Area AIA Building 2330, Fort Sill, Oklahoma	US Army Corps of Engineers Tulsa District	NOV-1996
	Site Closure Report Remedial Action-Blue Beaver Creek PBA, Two Volume Set (SWMU 029)	OHM Remediation Services, Corp.	DEC-1996
1997	Technical Data Report for the Investigation and Removal of Contaminated Drain Traps at Building 4700 (Old Reynolds Army Community Hospital)	US Army Corps of Engineers, Tulsa District, LB&M Associates Inc	JUL-1997
	Investigation Report Wastewater Treatment Plant	US Army Corps of Engineers, Tulsa District, Woodward-Clyde Federal Services	AUG-1997
	Investigation Report Wastewater Treatment Plant, Fort Sill, Oklahoma, One Volume (SWMUs 065-079)	Woodward-Clyde Federal Services	AUG-1997
1998	Technical Data Report Battery Acid Disposal Site, Fort Sill	Advancia Corporation	FEB-1998
	Remediation of Chrystie Hill Powder Burn Area Number 4	US Army Corps of Engineers, Tulsa District, OHM Remediation Services,	JUL-1998

IRP Previous Studies

1998	Title	Author	Date
		Corp.	
	Technical Evaluation to Establish Soil Levels for Lead, 2,4-Dinitrotoluene, and 2,6-Dinitrotoluene at the Chrystie Hill Powder Burn Area	OHM Remediation Services Corporation, Caldwell Environmental Associates, Inc.	SEP-1998
	Work Plan for SWMU 85	US Army Corps of Engineers, Tulsa District, IT Corporation	OCT-1998
1999	Site Investigation of Former Gunnery Hill Landfill (SWMU 4), Fort Sill, Oklahoma	US Army Corps of Engineers, Tulsa	JUL-1999
	Former Sitting Bear Creek Landfill (SWMU 5), Fort Sill, Oklahoma	US Army Corps of Engineers, Tulsa	JUL-1999
	Former Sitting Bear Creek Landfill (SWMU 5), Fort Sill, Oklahoma	US Army Corps of Engineers, Tulsa	JUL-1999
	Site Investigation Former Camp Eagle Landfill (SWMU 17), Fort Sill, Oklahoma	US Army Corps of Engineers, Tulsa	JUL-1999
	Limited Human Health Risk Evaluation, Former Sitting Bear Creek Landfill (SWMU 5)	US Army Corps of Engineers, Tulsa	JUL-1999
	Final Site Investigation Heyles Hole, Fort Sill, Oklahoma	US Army Corps of Engineers, Tulsa	SEP-1999
	Closure Report SWMU 85, Fort Sill, Oklahoma, Two Volume Set	IT Corporation	NOV-1999
2000	Closure Report Powder Burn Areas (SWMUs 24, 27, 29)	US Army Corps of Engineers, Tulsa	SEP-2000
	Groundwater Monitoring Program Report SWMU 6, 7, 8, 9, 10, 11, 12 and 83, Fort Sill, Oklahoma	US Army Corps of Engineers, Tulsa District Radian International	DEC-2000
2001	Final Closure Report Paint Thinner Disposal Area Buildings 2209 and 214 (SWMU 80), Fort Sill, Oklahoma	US Army Corps of Engineers, Tulsa	APR-2001
	Closure Report Acid Neutralization System, Fort Sill, Oklahoma	US Army Corps of Engineers, Tulsa District., IT Corporation	JUN-2001
	Closure Report Fire Training Area, Fort Sill, Oklahoma.	US Army Corps of Engineers, Tulsa District, IT Corporation	JUN-2001
	Fort Sill Groundwater Analyses Statistical Summary, Selected Analytes SWMUs 6, 7,8, 9, 10, 11, 12 1996-2000	US Army Corps of Engineers, Mobile	AUG-2001
	Final Report Site Investigation Former Waste Battery Acid Neutralization Site (SWMUs 97, 98, 112), Fort Sill, Oklahoma	US Army Corps of Engineers, Tulsa	SEP-2001
	Final Technical Memo Completion Report Old Medical Waste Incinerator Site Removal Action	US Army Corps of Engineers, Tulsa District, IT Corporation	NOV-2001
2002	Final Closure Report Former Gunnery Hill Landfill (SWMU 4), US Army Field Artillery Center & Fort Sill	US Army Corps of Engineers, Tulsa	MAR-2002
	Completion Report SWMU#5, Former Sitting Bear Creek Landfill	Weston Solutions, Inc.	SEP-2002

IRP Previous Studies

Year	Title	Author	Date
2003	Final Remedial Investigation Report SWMU#20, Former Bateman Woods Demolition Area, Fort Sill, Oklahoma	Weston Solutions, Inc.	JUL-2003
	No Further Response Action Planned, Quanah Range EOD Landfill, US Army Field Artillery Center, Fort Sill, Oklahoma	U.S. Army Corps of Engineers, Tulsa District	JUL-2003
	Final Remedial Investigation Report, Chatto Flats Demolition Area (SWMU-022), US Army Field Artillery Center, Fort Sill Oklahoma	U.S. Army Corps of Engineers, Tulsa District	NOV-2003
2006	Work Plan for Backfill Eroded Area of Exploded Ordnance Landfill FTSL-047 (Quanah Range), Fort Sill, Oklahoma	MKM Engineers, Inc.	JUN-2006
2007	Decision Document, Land Use Controls for Eight Historic Landfills, Fort Sill, Oklahoma	US Army Field Artillery Center and Fort Sill (USAFACFS) and Directorate of Public Works, Environmental Quality Division, Installation Restoration Program	MAY-2007
2009	Final Five-Year Review Report, Eight Historic Landfills	U.S. Army Fires Center of Excellence and Fort Sill	MAR-2009

FORT SILL
Installation Restoration Program
Site Descriptions

Site ID: FTSL-008
Site Name: LANDFILL 4 (GUNNERY HILL)
Alias: SWMU#004

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Metals

Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	198708.....	199004
SI.....	198708.....	199004
RI/FS.....	199804.....	200407
LTM.....	200410.....	201909

RIP Date: N/A

RC Date: 200407

SITE DESCRIPTION

Landfill 4 is located in the Gunnery Hill area northwest of the intersection of Fort Sill Blvd. and Sheridan Road. It was a hillside disposal site where rubbish was open-burned. The site is approximately 2.4 acres. Material was reportedly dumped and/or burned at this location during the World War II era (the 1940s). Operation ceased in the late-1940s. The exact composition of the wastes managed is unknown. The unit is well vegetated and shows no visible signs of leachate.

In April 1990, PRC Environmental Management, Inc. conducted the RFA preliminary assessment (PA)/site inspection (SI). The RFA recommended further site investigation to determine the composition of the wastes disposed of at this unit. FTSL contracted with the CESWT, to conduct further site investigation to identify contaminants of concern. In July 1998 the phase I RCRA facility investigation (RFI) began, and the Phase I report was completed in July 1999. The Phase I investigation included an electromagnetic survey of the area, revealing a total of six anomalous areas, sampling of the surface soil, subsurface soil, and sediment. Lead was detected in the soil at concentrations above the industrial Medium-Specific Screening Program level (MSSL). Additional sampling was needed to determine the full extent of contamination at the site.

In March 2000, Phase II of the RFI, comprised of additional soil and groundwater sampling, was conducted and the final closure report was prepared by CESWT. This investigation showed arsenic, barium, chromium and lead as possible contaminants of concern. Further investigation was conducted at the site and on April 9, 2002 the Final Site Investigation Former Gunnery Hill Landfill Report was submitted to the ODEQ. On Oct. 27, 2004 the ODEQ issued an NFA letter. The site is now in the LTM phase.

On June 5, 2007, the decision document (DD) for the implementation of LUCs was signed. Institutional controls (LUCs) and five-year reviews will be conducted under the LTM phase. The first five-year review was completed and reported in 2009. The next five-year review and long-term maintenance of the landfill will be conducted through a PBA contract that was finalized in September 2010. While the contract included FTSL-008, since it is within the Cantonment Area and is maintained by FTSL staff, no cost from the contract is associated with FTSL-008.

CLEANUP/EXIT STRATEGY

Costs for LUCs and five-year reviews at sites FTSL-008, FTSL-010, FTSL-011, FTSL-012, FTSL-013, FTSL-014, and FTSL-047 are currently all covered under the PBA contract, which was awarded in September 2010. While the contract included FTSL-008, this landfill is within the Cantonment Area and is maintained by FTSL staff, and inspection and reporting costs are minimal. No cost from the contract is associated with FTSL-008. It is not known if LTM will be required past 2019.

The LTM phase includes quarterly inspections, an annual assessment, and five-year reviews and LUCs in accordance with the installation-wide LUC implementation plan. The LUCs will be on-site controls with no building or drilling and will continue indefinitely. Landfill maintenance for this site will be conducted quarterly or as required based on-site conditions.

Site ID: FTSL-010

Site Name: LANDF 6(MISSION RIDGE/WHITE WOLF BRIDGE

Alias: SWMU#006

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Metals

Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	198708.....	199004
SI.....	198708.....	199004
RI/FS.....	199005.....	200209
LTM.....	200209.....	201909

RIP Date: N/A

RC Date: 200209

SITE DESCRIPTION

The Mission Ridge/White Wolf Bridge landfill consists of 111 acres and is located between Hummel Knoll and the Medicine Bluff Recreational Area, between Apache Gate Road and Punch Bowl Road. Chatto Road subdivides the area east to west. It is the earliest documented sanitary landfill used at FTSL. During the 1940s and 1950s it was a trench-and-fill disposal site for sanitary wastes and rubbish. Disposal apparently took place at five separate trench-and-fill areas that range from one to six acres and are easily identified by the parallel or nearly parallel, ridge-like hummocks that run along the ground surface. The landfill areas are well vegetated, with minimal surface erosion and no visible signs of environmental impact.

In March and April 1986 a geohydrologic study was conducted by the USAEHA. Four groundwater monitoring wells were installed at that time.

In April 1990 PRC Environmental Management, Inc. completed the RFA recommending the collection of additional soil and groundwater samples. In April 1991 Radian Corp. conducted a separate RFI, which included soil and groundwater sampling. Groundwater was monitored for five years to determine the possible impact on the groundwater quality. The five-year groundwater monitoring program was completed in FY2000. On Feb. 22, 2001 the site groundwater monitoring program report was submitted to the ODEQ. To support the findings of the groundwater monitoring report, the USACE prepared a separate groundwater analyses statistical summary report. In August 2001 the USACE Mobile District completed the report and in September 2001 it was submitted to the ODEQ. On Aug. 20, 2002 the ODEQ issued an NFA letter. In December 2002 the groundwater monitoring wells were removed.

The FTSL-010 site is in the LTM phase. The DD for the implementation of LUCs was signed on June 5, 2007. Institutional controls and five-year reviews will be conducted under the LTM phase. LUCs will be performed in-house.

Landfill maintenance for this site will be conducted every quarter or as required due to site conditions. The first five-year review was completed and reported in 2009. The next five-year review and long-term maintenance of the landfill will be conducted through a PBA contract that was finalized in September 2010.

CLEANUP/EXIT STRATEGY

Costs for LUCs and five-year reviews at sites FTSL-008, FTSL-010, FTSL-011, FTSL-012, FTSL-013, FTSL-014, and FTSL-047 are currently all covered under the PBA contract, which was awarded in September 2010. It is not known if LTM will be required past 2019.

The LTM phase includes quarterly inspections, an annual assessment, and five-year reviews and LUCs in accordance with the installation-wide LUC implementation plan. The LUCs will be on-site controls with no building or drilling and will continue indefinitely. Landfill maintenance for this site will be conducted quarterly or as required based on-site conditions.

Site ID: FTSL-011
Site Name: LANDFILL 7(HUMMEL KNOLL)
Alias: SWMU#007

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Metals, Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	198708.....	199004
SI.....	198708.....	199004
RI/FS.....	199506.....	200209
LTM.....	200209.....	201909

RIP Date: N/A

RC Date: 200209

SITE DESCRIPTION

The Hummel Knoll Landfill consists of approximately 50 acres and is located between Hummel Knoll and the Medicine Bluff Recreational Area, and between Apache Gate Road and Punch Bowl Road (at the northeast corner). The landfill operated as a trench-and-fill type from about 1950 to 1955. FTSL used this landfill primarily for the disposal of sanitary wastes and rubbish.

In March 1986, and April 1986 a geohydrologic study was conducted by the USAEHA, at which time four groundwater monitoring wells were installed. In April 1990 PRC Environmental Management, Inc. completed the RFA recommending the collection of additional soil and groundwater samples. In April 1991 Radian Corporation conducted a separate RFA, which included soil and groundwater sampling.

In early 1995, the groundwater monitoring system at this site was evaluated and upgraded by Parsons Engineering, Inc. There were a total of seven monitoring wells at the site. In 1995 the RI/FS began. Groundwater monitoring was initiated due to USEPA Region VI concerns regarding this site.

Groundwater was monitored for five years to determine the impact of the landfill on the groundwater quality. In 2000 the five-year groundwater monitoring program was completed. On Feb. 22, 2001 the final report was submitted to the ODEQ. To support the findings of the groundwater monitoring report, the USACE prepared a separate groundwater analyses statistical summary report which Mobile District completed in August 2001 and submitted to the ODEQ in September 2001. On Aug. 20, 2002, the ODEQ issued an NFA letter. In December 2002, the groundwater monitoring wells were removed. This site is now in the LTM phase. On June 5, 2007 the DD for the implementation of LUCs was signed.

Landfill maintenance for this site will be conducted every quarter or as required due to site conditions. The first five-year review was completed and reported in 2009. The next five-year review and long-term maintenance of the landfill will be conducted through a PBA contract that was finalized in September 2010.

CLEANUP/EXIT STRATEGY

Costs for LUCs and five-year reviews at sites FTSL-008, FTSL-010, FTSL-011, FTSL-012, FTSL-013, FTSL-014, and FTSL-047 are currently all covered under the PBA contract, which was awarded in September 2010. It is not known if LTM will be required past 2019.

The LTM phase includes quarterly inspections, an annual assessment, and five-year reviews and LUCs in accordance with the installation-wide LUC implementation plan. The LUCs will be on-site controls with no building or drilling and will continue indefinitely. Landfill maintenance for this site will be conducted quarterly or as required based on-site conditions.

Site ID: FTSL-012
Site Name: LANDFILL 8(NORTH FIELD)
Alias: SWMU#008

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Metals, Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern: Groundwater

Phases	Start	End
PA.....	198708.....	199004
Sl.....	198708.....	199004
RI/FS.....	199506.....	200202
LTM.....	200209.....	201909

RIP Date: N/A

RC Date: 200209

SITE DESCRIPTION

The North Field Landfill is located west of North Field Road and north of Elgin Road, south of the St. Louis-San Francisco Railroad and approximately 200 feet east of East Cache Creek. The landfill area is elongated along a north-south axis; it is approximately 4,000 feet long and 600 feet wide (totaling 55 acres). From about 1965 to 1970 the site operated as a trench-and-fill type sanitary landfill, and was primarily used for disposal of sanitary wastes and rubbish.

In March and April 1986, a geohydrologic study was conducted by USAEHA at which time four groundwater monitoring wells were installed. In April 1990 PRC Environmental Management, Inc. completed an RFA and recommended the collection of additional soil and groundwater samples. In April 1991 Radian Corporation conducted a separate RFA which included soil and groundwater sampling.

In early 1995, the groundwater monitoring system at this site was evaluated and upgraded by Parsons Engineering, Inc. There were a total of eight monitoring wells at the site. In that year the RI/FS began. Due to the USEPA Region VI's concerns, groundwater monitoring was initiated at this site.

Groundwater was monitored for five years to determine the impact of the landfill on the groundwater quality. In FY2000 the five-year groundwater monitoring program was completed. On Feb. 22, 2001 the site groundwater monitoring program report was submitted to the ODEQ. To support the findings of the groundwater monitoring report, the USACE prepared a separate groundwater analyses statistical summary report which the Mobile District completed in August 2001 and submitted to the ODEQ in September 2001. On Aug. 20, 2002 the ODEQ issued an NFA letter and in December of that year the groundwater monitoring wells were removed.

This site is now in the LTM phase. On June 5, 2007 the DD for the implementation of LUCs was signed.

Landfill maintenance for this site will be conducted every quarter or as required due to site conditions. The first five-year review was completed and reported in 2009. The next five-year review and long-term maintenance of the landfill will be conducted through a PBA contract that was finalized in September 2010.

CLEANUP/EXIT STRATEGY

Costs for LUCs and five-year reviews at sites FTSL-008, FTSL-010, FTSL-011, FTSL-012, FTSL-013, FTSL-014, and FTSL-047 are currently all covered under the PBA contract, which was awarded in September 2010. It is not known if LTM will be required past 2019.

The LTM phase includes quarterly inspections, an annual assessment, and five-year reviews and LUCs in accordance with the installation-wide LUC implementation plan. The LUCs will be on-site controls with no building or drilling and will continue indefinitely. Landfill maintenance for this site will be conducted quarterly or as required based on-site conditions.

Site ID: FTSL-013

Site Name: LANDFILL 9 (PEACH TREE CROSSING)

Alias: SWMU#009

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Metals, Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	198708.....	199004
SI.....	198708.....	199004
RI/FS.....	199506.....	200209
LTM.....	200209.....	201909

RIP Date: N/A

RC Date: 200209

SITE DESCRIPTION

The Peach Tree Crossing site is an approximately 12-acre trench-type sanitary landfill located immediately west of North Field Road, about 600 feet south of Elgin Road. The edge of the landfill is about 200 feet from the western edge of East Cache Creek. From 1970 to 1971 the site was used primarily for the disposal of sanitary wastes and rubbish.

In March and April 1986 a geohydrologic study was conducted by the USAEHA. Four groundwater monitoring wells were installed at that time. Collection of soil and groundwater samples was recommended by the 1990 RFA which was conducted by PRC Environmental Management, Inc.

Soil and groundwater samples were collected under the Radian RFA conducted in April 1991. No soil contamination was found in the soil borings collected during that investigation. Groundwater analysis of samples collected showed some potential contamination. Four compounds, chlorobenzene, arsenic, 4,4-DDD, and chlordane, were detected in samples, but all were at extremely low concentrations and were verified as not an issue.

Groundwater monitoring was initiated at this site due to the USEPA Region VI's concerns regarding the proximity of the site to the shallow alluvial aquifers. The groundwater monitoring system at this site was evaluated and upgraded to ensure adequate monitoring. The upgraded monitoring well network consisted of seven wells.

Groundwater was monitored for five years to determine the possible impact of the landfill on the groundwater quality. In FY2000 the five-year groundwater monitoring program was completed. On Feb. 22, 2001 the groundwater monitoring program report was submitted to the ODEQ for regulatory review. To support the findings of the groundwater monitoring report, the USACE prepared a separate groundwater analyses statistical summary report which the Mobile District completed in August 2001 and submitted to the ODEQ in September of that year. On Aug. 20, 2002 the ODEQ issued an NFA letter and in December of that year the groundwater monitoring wells were removed.

This site is now in the LTM phase. The DD for the implementation of LUCs was signed on June 5, 2007.

Landfill maintenance for this site will be conducted every quarter or as required due to site conditions. The first five-year review was completed and reported in 2009. The next five-year review and long-term maintenance of the landfill will be conducted through a PBA contract that was finalized in September 2010.

CLEANUP/EXIT STRATEGY

Costs for LUCs and five-year reviews at sites FTSL-008, FTSL-010, FTSL-011, FTSL-012, FTSL-013, FTSL-014, and FTSL-047 are currently all covered under the PBA contract, which was awarded in September 2010. It is not known if LTM will be required past 2019.

The LTM phase includes quarterly inspections, an annual assessment, and five-year reviews and LUCs in accordance with the

Site ID: FTSL-013
Site Name: LANDFILL 9 (PEACH TREE CROSSING)
Alias: SWMU#009

installation-wide LUC implementation plan. The LUCs will be on-site controls with no building or drilling and will continue indefinitely. Landfill maintenance for this site will be conducted quarterly or as required based on-site conditions.

Site ID: FTSL-014
Site Name: LANDFILL 10
Alias: SWMU#010

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Metals, Pesticides, Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	198708.....	199004
Sl.....	198708.....	199004
RI/FS.....	199506.....	200209
LTM.....	200209.....	201909

RIP Date: N/A

RC Date: 200209

SITE DESCRIPTION

Landfill 10 covers approximately 56 acres and is a trench type landfill located between Dodge Hill Road and Beef Creek Road and north of Beef Creek. The site was in operation from 1971 to 1985 primarily for the disposal of sanitary wastes, although paint sludge, asbestos, cyanide waste, washrack wastes, spent lithium batteries, and pesticides were also known to have been disposed of there. Approximately three feet of compacted earth was applied to the cells as a final cover. The site is well-vegetated and currently used as a training area.

In March and April 1986, a geohydrologic study was conducted by the USAEHA and two groundwater monitoring wells were installed. In April 1990 PRC Environmental Management, Inc. completed the RFA and recommended the collection of additional soil and groundwater samples. The April 1991 RFA conducted by Radian Corporation included soil and groundwater sampling.

In early 1995, the groundwater monitoring system at this site was evaluated and upgraded by Parsons Engineering, Inc. There were seven groundwater monitoring wells at the site. In 1995 the RI/FS began and due to the concerns of USEPA Region VI groundwater monitoring was initiated.

Groundwater was monitored over a five-year period to determine the impact of the landfill on the groundwater quality. In FY2000 the five-year groundwater monitoring program was completed and the groundwater monitoring program report was submitted to the ODEQ on Feb. 22, 2001. To support the findings of the groundwater monitoring report, the USACE prepared a separate groundwater analyses statistical summary report which the Mobile District completed in August 2001 and submitted to the ODEQ in September that year. On Aug. 20, 2002 the ODEQ issued an NFA letter and the groundwater monitoring wells were removed in December of that year.

This site is now in the LTM phase. The DD for the implementation of LUCs was signed on June 5, 2007.

Landfill maintenance for this site will be conducted every quarter or as required due to site conditions. The first five-year review was completed and reported in 2009. The next five-year review and long-term maintenance of the landfill will be conducted through a PBA contract that was finalized in September 2010.

CLEANUP/EXIT STRATEGY

Costs for LUCs and five-year reviews at sites FTSL-008, FTSL-010, FTSL-011, FTSL-012, FTSL-013, FTSL-014, and FTSL-047 are currently all covered under the PBA contract, which was awarded in September 2010. It is not known if LTM will be required past 2019.

The LTM phase includes quarterly inspections, an annual assessment, and five-year reviews and LUCs in accordance with the installation-wide LUC implementation plan. The LUCs will be on-site controls with no building or drilling and will continue indefinitely. Landfill maintenance for this site will be conducted quarterly or as required based on-site conditions.

Site ID: FTSL-047
Site Name: EOD LANDFILL (QUANAH RANGE)
Alias: SWMU#018

STATUS

Regulatory Driver: CERCLA
RRSE: LOW
 Contaminants of Concern: Explosives
 Media of Concern: Groundwater, Soil, Surface Water

Phases	Start	End
PA.....	198909.....	199102
SI.....	198909.....	200009
RI/FS.....	200009.....	200403
LTM.....	200406.....	201909

RIP Date: N/A
RC Date: 200403

SITE DESCRIPTION

The Quanah Range EOD landfill is in the center part of the Quanah Range impact area. This site is an eight- to 10-foot deep trench extending for approximately 200 feet along an unnamed north/south road about half a mile north of McKenzie Hill Road. The trench landfill was used to bury exploded bombs and munitions until the 1970s. A site reconnaissance conducted in October 1989 verified the presence of unburied bomb units in and near a northeast-to-southwest trending trench. Contaminants from these units pose a potential pollution threat to the soil zone as well as to groundwater and nearby surface water. Collection of soil samples was recommended in the April 1990 RFA conducted by PRC Environmental Management, Inc.

Soil and groundwater samples were collected under the April 1991 RFA conducted by Radian International. There appears to be some soil contamination. Cyclotetramethylene tetranitramine was detected at a significant concentration in one surface soil sample collected from the trench containing old bombs and munitions. Lead and 4,4'-DDE were detected at very low levels in borehole samples.

Explosive compounds appear to be migrating from the trenches and surface soils into the groundwater; however, only one well contained detectable concentrations of any explosive compound in groundwater. The downgradient well and the surface water sample downgradient from the site did not contain any of these contaminants in detectable concentrations.

On Oct. 14, 2003, the ODEQ issued an NFA letter and the three groundwater monitoring wells were removed in September of that year. Landfill maintenance, which included erosion control and re-vegetation, occurred in FY06.

This site is in the LTM phase. On June 5, 2007, the DD for the implementation of LUCs was signed.

Landfill maintenance for this site will be conducted every quarter or as required due to site conditions. The first five-year review was completed and reported in 2009. The next five-year review and long-term maintenance of the landfill will be conducted through a PBA contract that was finalized in September 2010.

CLEANUP/EXIT STRATEGY

Costs for LUCs and five-year reviews at sites FTSL-008, FTSL-010, FTSL-011, FTSL-012, FTSL-013, FTSL-014, and FTSL-047 are currently all covered under the PBA contract, which was awarded in September 2010. It is not known if LTM will be required past 2019.

The LTM phase includes quarterly inspections, an annual assessment, and five-year reviews and LUCs in accordance with the installation-wide LUC implementation plan. The LUCs will be on-site controls with no building or drilling and will continue indefinitely. Landfill maintenance for this site will be conducted quarterly or as required based on-site conditions.

This site lies within the active range of the FTSL Falcon Range Impact Area. Therefore no further remedial investigation (RI) and/or RA will be considered until such time as the active range becomes inactive and/or closed.

Site ID: PBA@FTSL
Site Name: PBA@FTSL_IR
Alias: None

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Explosives, Metals, Pesticides,
Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern: Groundwater, Soil, Surface Water

Phases	Start	End
PA.....	201003.....	201003
LTM.....	201003.....	201909

RIP Date: N/A

RC Date: 201003

SITE DESCRIPTION

This site was created to track the PBA contract action. Listed below are the contract line item numbers (CLINs). This AEDB-R entry tracks the Army Corps of Engineer's Supervision and Review (S&R) Post Award Funding requirements to provide oversight on the Landfill 5 removal action and for LTM oversight on the six historic landfills under contract. This cost estimate is only for 2012, 2013 and 2014. Costs for 2015-2019 will be provided by the Army Corps of Engineers, if required.

2001AB project management plan (PMP) and Quality Assurance Surveillance Plan (QASP) for Landfill 5 (FTSL-009) in accordance with Table 1 of the performance work statement (PWS)

2001AC PMP and QASP for seven landfill sites in accordance with Table 1 of the PWS

2001CA Achieve NFA due to new Land-Use at Landfill 5 (FTSL-009) by Dec. 31, 2011

2001DA Achieve LTM Plan to provide LTM for the following sites for the duration of the task order:

- Landfill 4 (FTSL-008)
- Landfill 6 (FTSL-010)
- Landfill 7 (FTSL-011)
- Landfill 8 (FTSL-012)
- Landfill 9 (FTSL-013)
- Landfill 10 (FTSL-014)
- EOD Landfill (FTSL-047)

2001DF Achieve Five-Year Review Report for the following sites by Dec. 31, 2013:

- Landfill 4 (FTSL-008)
- Landfill 6 (FTSL-010)
- Landfill 7 (FTSL-011)
- Landfill 8 (FTSL-012)
- Landfill 9 (FTSL-013)
- Landfill 10 (FTSL-014)
- EOD Landfill (FTSL-047)

CLEANUP/EXIT STRATEGY

Costs for LUCs and five-year reviews at sites FTSL-008, FTSL-010, FTSL-011, FTSL-012, FTSL-013, FTSL-014, and FTSL-047 are currently all covered under the PBA contract, which was awarded in September 2010. This contract funds LTM through 2019. It is not known if LTM will be required past that date.

The LTM phase includes quarterly inspections, an annual assessment, and five-year reviews and LUCs in accordance with the installation-wide LUC implementation plan. The LUCs will be on-site controls with no building or drilling and will continue

Site ID: PBA@FTSL
Site Name: PBA@FTSL_IR
Alias: None

indefinitely. Landfill maintenance for this site will be conducted quarterly or as required based on-site conditions.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FTSL-001	LANDFILL 1 A	199004	RCRA Facility Assessment Report
FTSL-002	LANDFILL 1 B	199004	RCRA Facility Assessment Report
FTSL-003	LANDFILL 1 C	199004	RCRA Facility Assessment Report
FTSL-004	LANDFILL 1 D	199004	RCRA Facility Assessment Report
FTSL-005	LANDFILL 1 E	199004	RCRA Facility Assessment Report
FTSL-006	LANDFILL 2 (CAMP DONIPHAN)	199004	RCRA Facility Assessment Report
FTSL-007	LANDFILL (3 HEYLES HOLE)	199911	ODEQ 22 November 1999 NFA Letter
FTSL-009	LANDFILL 5 (SITTING BEAR CREEK)	201112	
FTSL-015	LANDFILL 11	200503	ODEQ 20 August 2002 NFA Letter
FTSL-016	LANDFILL 12	200503	ODEQ 20 August 2002 NFA Letter
FTSL-017	LEAF DISPOSAL AREA	200009	ODEQ 26 October 2000 NFA Letter
FTSL-018	WOOD DISPOSAL AREA	200009	ODEQ 26 October 2000 NFA Letter
FTSL-019	POSSIBLE CLASSIFIED MATERIAL DISPOSAL	199004	RCRA Facility Assessment Report
FTSL-020	LANDFILL 16 (A & B)	199004	Active Landfill
FTSL-021	LANDFILL 17 (CAMP EAGLE)	200107	ODEQ 30 July 2001 NFA Letter
FTSL-022	CRATER CREEK CANYON DEMO AREA	200503	ODEQ 14 October 2003 NFA Letter
FTSL-023	BATEMAN WOODS DEMO AREA	200503	ODEQ 3 February 2005 NFA Letter
FTSL-024	SOUTH ARBUCKLE DEMO AREA	200309	ODEQ 14 October 2003 NFA Letter
FTSL-025	CHATTO FLATS DEMO AREA	200409	ODEQ 23 August 2004 NFA Letter
FTSL-026	POWDER BURN AREA 1 (ADAMS HILL)	200107	ODEQ 12 July 2001 NFA Letter
FTSL-027	POWDER BURN AREA 2(BALD RIDGE ROAD)	200107	ODEQ 12 July 2001 NFA Letter
FTSL-028	POWDER BURN AREA 3(APACHE GATE)	200107	ODEQ 12 July 2001 NFA Letter
FTSL-029	POWDER BURN AREA 4(CHRYSTIE HILL)	200107	ODEQ 12 July 2001 NFA Letter
FTSL-030	POWDER BURN AREA 5(TOWER TWO RD)	200107	ODEQ 12 July 2001 NFA Letter
FTSL-031	POWDER BURN AREA 6 (GATE 6)	200107	ODEQ 12 July 2001 NFA Letter
FTSL-032	POWDER BURN AREA 7(BLUE BEAVER CREEK)	200107	ODEQ 12 July 2001 NFA Letter
FTSL-033	POWDER BURN AREA 8(QUANAH RANGE)	200107	ODEQ 12 July 2001 NFA Letter
FTSL-036	POST LAUNDRY WW LAGOON	199909	ODEQ 22 November 1999 NFA Letter
FTSL-037	WASTE WATER TREATMENT PLANT	199706	ODEQ 16 April 2002 NFA Letter
FTSL-038	LAKE ELMER OXIDATION LAGOONS	199909	ODEQ 22 November 1999 NFA Letter
FTSL-039	VEHICLE WASHRACKS (78)	199809	ODEQ September 1998 NFA Letter
FTSL-040	BATTERY ACID DIS PIT	200209	ODEQ 25 February 2002 NFA Letter
FTSL-041	WASTE BATTERY ACID UST	199606	ODEQ 25 February 2002 NFA Letter
FTSL-042	PAINT THINNER DISPOSAL AREA	200407	ODEQ Response letter 23 December 2002
FTSL-043	HAZARDOUS WASTE STORAGE AREA	199302	OSDH NFA 3 February 1993
FTSL-044	USED OIL USTS (81) TANKS	199709	Oklahoma Corporation Commission UST Program closures

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FTSL-045	FIRE TRAINING AREA	200304	ODEQ 10 April 2003 NFA
FTSL-049	OIL SEPERATOR AT 1ST - 78TH MOTOR POOL	199606	ODEQ 1 September 1998 NFA
FTSL-050	PAINT SHOP	199606	RCRA Facility Assessment Report
FTSL-051	ASPHALT SPILL SITE	200206	ODEQ Closure 6 June 2002
FTSL-052	SPILL SITE AT DPW TANK AREA	199606	OCC 16 July 1996 Closure
FTSL-053	PATH AND INF WASTE INCENERATOR	199606	1996 Parson 34 SWMU Report
FTSL-054	CLASSIFIED DOCUMENTS INCINERATOR	199606	1996 Parson 34 SWMU Report
FTSL-055	BATTERY ACID NEUT. TANK	199606	ODEQ 25 February 2002
FTSL-056	CHEMICAL STORAGE SHED NEAR BLDG 2261	199606	1996 Parson 34 SWMU Report
FTSL-057	PAINT BOOTHS AT BLDG 2262	199606	Site is not eligible as site is still active
FTSL-058	CAPACITOR STORAGE AREA, BLDG 1931	199606	April 1990 RCRA Facility Assement Report
FTSL-059	CAPEX AREA - UXO CLEARANCE	199909	Active Range
FTSL-060	BUILDING 4700 - HOSPITAL LABORATORY	199709	ODEQ 30 August 2002 NFA Letter
FTSL-061	EQUIPMENT MAINTENANCE SHOP SPILL AREA	199004	RCRA Facility Assessment Report
FTSL-062	CONTAMINATED FILL AT INACTIVE STORAGE	199404	OCC April 1994 closure
FTSL-063	ADAMS HALL, BLDG 5020 - SURFACE SPILL	199412	OCC December 1994 closure
FTSL-064	BLDG 2209 - OPEN PIT, FORMER OIL STOR.	199807	ODEQ 22 July 1998 NFA letter
FTSL-065	UXO CLEARANCE - BLUE BEAVER	200001	Active Range
FTSL-066	UXO CLEARANCE - SPOTS RANGE	200001	Active Range
FTSL-067	UXO CLEARANCE - POTATO HILL	200001	Active Range
FTSL-068	UXO CLEARANCE - MCKENZIE HILL	200001	Active Range
FTSL-069	UXO CLEARANCE - ROCKET POND	200001	Active Range
FTSL-070	BULK POL STORAGE AREA, Blg 2330	199612	OCC 4 February 2003 UST Program Closure
FTSL-089	DUMPING SITE AT KETCH LAKE BUNKER	199811	ODEQ November 1998 NFA Letter
FTSL-090	OLD MEDICAL WASTE INCINERATOR	200309	ODEQ 24 April 2002 NFA Letter
FTSL-48	CONTAMINATED FUEL ACCUMULATION AREA	199607	1996 Parson 34 SWMU Report

IRP Schedule

Date of IRP Inception: 198708

Past Phase Completion Milestones

1990

PA	(FTSL-001 - LANDFILL 1 A, FTSL-002 - LANDFILL 1 B, FTSL-003 - LANDFILL 1 C, FTSL-004 - LANDFILL 1 D, FTSL-005 - LANDFILL 1 E, FTSL-006 - LANDFILL 2 (CAMP DONIPHAN), FTSL-007 - LANDFILL (3 HEYLES HOLE), FTSL-008 - LANDFILL 4 (GUNNERY HILL), FTSL-009 - LANDFILL 5 (SITTING BEAR CREEK), FTSL-010 - LANDF 6(MISSION RIDGE/WHITE WOLF BRIDGE, FTSL-011 - LANDFILL 7(HUMMEL KNOLL), FTSL-012 - LANDFILL 8(NORTH FIELD), FTSL-013 - LANDFILL 9 (PEACH TREE CROSSING), FTSL-014 - LANDFILL 10, FTSL-015 - LANDFILL 11 , FTSL-016 - LANDFILL 12, FTSL-017 - LEAF DISPOSAL AREA, FTSL-018 - WOOD DISPOSAL AREA, FTSL-019 - POSSIBLE CLASSIFIED MATERIAL DISPOSAL, FTSL-020 - LANDFILL 16 (A & B), FTSL-021 - LANDFILL 17 (CAMP EAGLE), FTSL-026 - POWDER BURN AREA 1 (ADAMS HILL), FTSL-027 - POWDER BURN AREA 2(BALD RIDGE ROAD), FTSL-028 - POWDER BURN AREA 3(APACHE GATE), FTSL-029 - POWDER BURN AREA 4(CHRYSTIE HILL), FTSL-030 - POWDER BURN AREA 5(TOWER TWO RD), FTSL-031 - POWDER BURN AREA 6 (GATE 6), FTSL-032 - POWDER BURN AREA 7(BLUE BEAVER CREEK), FTSL-033 - POWDER BURN AREA 8(QUANAH RANGE), FTSL-036 - POST LAUNDRY WW LAGOON, FTSL-037 - WASTE WATER TREATMENT PLANT, FTSL-038 - LAKE ELMER OXIDATION LAGOONS, FTSL-039 - VEHICLE WASHRACKS (78), FTSL-042 - PAINT THINNER DISPOSAL AREA, FTSL-044 - USED OIL USTS (81) TANKS, FTSL-049 - OIL SEPERATOR AT 1ST - 78TH MOTOR POOL, FTSL-050 - PAINT SHOP, FTSL-051 - ASPHALT SPILL SITE, FTSL-052 - SPILL SITE AT DPW TANK AREA, FTSL-053 - PATH AND INF WASTE INCENERATOR, FTSL-054 - CLASSIFIED DOCUMENTS INCINERATOR, FTSL-055 - BATTERY ACID NEUT. TANK , FTSL-056 - CHEMICAL STORAGE SHED NEAR BLDG 2261, FTSL-057 - PAINT BOOTHS AT BLDG 2262, FTSL-058 - CAPACITOR STORAGE AREA, BLDG 1931, FTSL-059 - CAPEX AREA - UXO CLEARANCE, FTSL-060 - BUILDING 4700 - HOSPITAL LABORATORY, FTSL-061 - EQUIPMENT MAINTENANCE SHOP SPILL AREA, FTSL-062 - CONTAMINATED FILL AT INACTIVE STORAGE, FTSL-063 - ADAMS HALL, BLDG 5020 - SURFACE SPILL, FTSL-064 - BLDG 2209 - OPEN PIT, FORMER OIL STOR., FTSL-065 - UXO CLEARANCE - BLUE BEAVER, FTSL-066 - UXO CLEARANCE - SPOTS RANGE, FTSL-067 - UXO CLEARANCE - POTATO HILL, FTSL-068 - UXO CLEARANCE - MCKENZIE HILL, FTSL-069 - UXO CLEARANCE - ROCKET POND)
SI	(FTSL-001 - LANDFILL 1 A, FTSL-002 - LANDFILL 1 B, FTSL-003 - LANDFILL 1 C, FTSL-004 - LANDFILL 1 D, FTSL-005 - LANDFILL 1 E, FTSL-006 - LANDFILL 2 (CAMP DONIPHAN), FTSL-007 - LANDFILL (3 HEYLES HOLE), FTSL-008 - LANDFILL 4 (GUNNERY HILL), FTSL-009 - LANDFILL 5 (SITTING BEAR CREEK), FTSL-010 - LANDF 6(MISSION RIDGE/WHITE WOLF BRIDGE, FTSL-011 - LANDFILL 7(HUMMEL KNOLL), FTSL-012 - LANDFILL 8(NORTH FIELD), FTSL-013 - LANDFILL 9 (PEACH TREE CROSSING), FTSL-014 - LANDFILL 10, FTSL-015 - LANDFILL 11 , FTSL-016 - LANDFILL 12, FTSL-019 - POSSIBLE CLASSIFIED MATERIAL DISPOSAL, FTSL-020 - LANDFILL 16 (A & B), FTSL-027 - POWDER BURN AREA 2(BALD RIDGE ROAD), FTSL-029 - POWDER BURN AREA 4(CHRYSTIE HILL), FTSL-030 - POWDER BURN AREA 5(TOWER TWO RD), FTSL-032 - POWDER BURN AREA 7(BLUE BEAVER CREEK), FTSL-033 - POWDER BURN AREA 8(QUANAH RANGE), FTSL-039 - VEHICLE WASHRACKS (78), FTSL-044 - USED OIL USTS (81) TANKS, FTSL-049 - OIL SEPERATOR AT 1ST - 78TH MOTOR POOL, FTSL-050 - PAINT SHOP, FTSL-051 - ASPHALT SPILL SITE, FTSL-052 - SPILL SITE AT DPW TANK AREA, FTSL-053 - PATH AND INF WASTE INCENERATOR, FTSL-054 - CLASSIFIED DOCUMENTS INCINERATOR, FTSL-056 - CHEMICAL STORAGE SHED NEAR BLDG 2261, FTSL-057 - PAINT BOOTHS AT BLDG 2262, FTSL-059 - CAPEX AREA - UXO CLEARANCE, FTSL-060 - BUILDING 4700 - HOSPITAL LABORATORY, FTSL-061 - EQUIPMENT MAINTENANCE SHOP SPILL AREA, FTSL-062 - CONTAMINATED FILL AT INACTIVE STORAGE, FTSL-063 - ADAMS HALL, BLDG 5020 - SURFACE SPILL, FTSL-064 - BLDG 2209 - OPEN PIT, FORMER OIL STOR., FTSL-065 - UXO CLEARANCE - BLUE BEAVER, FTSL-066 - UXO CLEARANCE - SPOTS RANGE, FTSL-067 - UXO CLEARANCE - POTATO HILL, FTSL-068 - UXO CLEARANCE - MCKENZIE HILL, FTSL-069 - UXO CLEARANCE - ROCKET POND)
1991	
PA	(FTSL-022 - CRATER CREEK CANYON DEMO AREA, FTSL-023 - BATEMAN WOODS DEMO AREA, FTSL-024 - SOUTH ARBUCKLE DEMO AREA, FTSL-025 - CHATTO FLATS DEMO AREA, FTSL-040 - BATTERY ACID DIS PIT, FTSL-041 - WASTE BATTERY ACID UST, FTSL-045 - FIRE TRAINING AREA, FTSL-047 - EOD LANDFILL (QUANAH RANGE))
SI	(FTSL-045 - FIRE TRAINING AREA)

IRP Schedule

1992

SI (FTSL-043 - HAZARDOUS WASTE STORAGE AREA)

PA (FTSL-043 - HAZARDOUS WASTE STORAGE AREA)

1993

RI/FS (FTSL-044 - USED OIL USTS (81) TANKS)

1994

SI (FTSL-48 - CONTAMINATED FUEL ACCUMULATION AREA)

RI/FS (FTSL-062 - CONTAMINATED FILL AT INACTIVE STORAGE, FTSL-065 - UXO CLEARANCE - BLUE BEAVER, FTSL-066 - UXO CLEARANCE - SPOTS RANGE, FTSL-067 - UXO CLEARANCE - POTATO HILL, FTSL-068 - UXO CLEARANCE - MCKENZIE HILL, FTSL-069 - UXO CLEARANCE - ROCKET POND)

PA (FTSL-089 - DUMPING SITE AT KETCH LAKE BUNKER, FTSL-48 - CONTAMINATED FUEL ACCUMULATION AREA)

1995

RD (FTSL-070 - BULK POL STORAGE AREA, Blg 2330)

PA (FTSL-070 - BULK POL STORAGE AREA, Blg 2330)

RI/FS (FTSL-063 - ADAMS HALL, BLDG 5020 - SURFACE SPILL)

SI (FTSL-070 - BULK POL STORAGE AREA, Blg 2330)

1996

RI/FS (FTSL-027 - POWDER BURN AREA 2(BALD RIDGE ROAD), FTSL-039 - VEHICLE WASHRACKS (78), FTSL-049 - OIL SEPERATOR AT 1ST - 78TH MOTOR POOL, FTSL-050 - PAINT SHOP, FTSL-051 - ASPHALT SPILL SITE, FTSL-052 - SPILL SITE AT DPW TANK AREA, FTSL-053 - PATH AND INF WASTE INCENERATOR, FTSL-054 - CLASSIFIED DOCUMENTS INCINERATOR, FTSL-056 - CHEMICAL STORAGE SHED NEAR BLDG 2261, FTSL-057 - PAINT BOOTHS AT BLDG 2262, FTSL-060 - BUILDING 4700 - HOSPITAL LABORATORY)

SI (FTSL-026 - POWDER BURN AREA 1 (ADAMS HILL), FTSL-028 - POWDER BURN AREA 3(APACHE GATE), FTSL-031 - POWDER BURN AREA 6 (GATE 6), FTSL-036 - POST LAUNDRY WW LAGOON, FTSL-038 - LAKE ELMER OXIDATION LAGOONS, FTSL-040 - BATTERY ACID DIS PIT, FTSL-041 - WASTE BATTERY ACID UST, FTSL-042 - PAINT THINNER DISPOSAL AREA, FTSL-055 - BATTERY ACID NEUT. TANK , FTSL-058 - CAPACITOR STORAGE AREA, BLDG 1931)

RA(C) (FTSL-027 - POWDER BURN AREA 2(BALD RIDGE ROAD), FTSL-089 - DUMPING SITE AT KETCH LAKE BUNKER)

1997

SI (FTSL-037 - WASTE WATER TREATMENT PLANT)

RA(C) (FTSL-044 - USED OIL USTS (81) TANKS, FTSL-060 - BUILDING 4700 - HOSPITAL LABORATORY, FTSL-070 - BULK POL STORAGE AREA, Blg 2330)

1998

RI/FS (FTSL-064 - BLDG 2209 - OPEN PIT, FORMER OIL STOR.)

1999

RA(C) (FTSL-029 - POWDER BURN AREA 4(CHRYSTIE HILL))

RI/FS (FTSL-036 - POST LAUNDRY WW LAGOON, FTSL-038 - LAKE ELMER OXIDATION LAGOONS)

2000

SI (FTSL-017 - LEAF DISPOSAL AREA, FTSL-018 - WOOD DISPOSAL AREA, FTSL-021 - LANDFILL 17 (CAMP EAGLE), FTSL-022 - CRATER CREEK CANYON DEMO AREA, FTSL-023 - BATEMAN WOODS DEMO AREA, FTSL-024 - SOUTH ARBUCKLE DEMO AREA, FTSL-025 - CHATTO FLATS DEMO AREA, FTSL-047 - EOD LANDFILL (QUANAH RANGE))

RI/FS (FTSL-007 - LANDFILL (3 HEYLES HOLE))

PA (FTSL-090 - OLD MEDICAL WASTE INCINERATOR)

2001

RI/FS (FTSL-030 - POWDER BURN AREA 5(TOWER TWO RD), FTSL-032 - POWDER BURN AREA 7(BLUE

	BEAVER CREEK), FTSL-090 - OLD MEDICAL WASTE INCINERATOR)
SI	(FTSL-090 - OLD MEDICAL WASTE INCINERATOR)
RD	(FTSL-090 - OLD MEDICAL WASTE INCINERATOR)
2002	
RI/FS	(FTSL-010 - LANDF 6(MISSION RIDGE/WHITE WOLF BRIDGE, FTSL-011 - LANDFILL 7(HUMMEL KNOLL), FTSL-012 - LANDFILL 8(NORTH FIELD), FTSL-013 - LANDFILL 9 (PEACH TREE CROSSING), FTSL-014 - LANDFILL 10, FTSL-015 - LANDFILL 11 , FTSL-016 - LANDFILL 12, FTSL-040 - BATTERY ACID DIS PIT)
RA(C)	(FTSL-051 - ASPHALT SPILL SITE, FTSL-090 - OLD MEDICAL WASTE INCINERATOR)
2003	
LTM	(FTSL-090 - OLD MEDICAL WASTE INCINERATOR)
RI/FS	(FTSL-022 - CRATER CREEK CANYON DEMO AREA, FTSL-024 - SOUTH ARBUCKLE DEMO AREA, FTSL-045 - FIRE TRAINING AREA)
2004	
RI/FS	(FTSL-008 - LANDFILL 4 (GUNNERY HILL), FTSL-023 - BATEMAN WOODS DEMO AREA, FTSL-025 - CHATTO FLATS DEMO AREA, FTSL-042 - PAINT THINNER DISPOSAL AREA, FTSL-047 - EOD LANDFILL (QUANAH RANGE))
2005	
RI/FS	(FTSL-009 - LANDFILL 5 (SITTING BEAR CREEK))
LTM	(FTSL-015 - LANDFILL 11 , FTSL-016 - LANDFILL 12, FTSL-022 - CRATER CREEK CANYON DEMO AREA, FTSL-023 - BATEMAN WOODS DEMO AREA)
2010	
PA	(PBA@FTSL - PBA@FTSL_IR)

Projected Phase Completion Milestones

See attached schedule

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates

Site ID	Site Name	ROD/DD Title	ROD/DD Date
---------	-----------	--------------	-------------

Final RA(C) Completion Date: 200209

Schedule for Next Five-Year Review: 2014

Estimated Completion Date of IRP at Installation (including LTM phase): 201909

FORT SILL IRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTSL-008	LANDFILL 4 (GUNNERY HILL)	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTSL-010	LANDF 6(MISSION RIDGE/WHITE WOLF BRIDGE)	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTSL-011	LANDFILL 7(HUMMEL KNOLL)	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTSL-012	LANDFILL 8(NORTH FIELD)	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTSL-013	LANDFILL 9 (PEACH TREE CROSSING)	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTSL-014	LANDFILL 10	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTSL-047	EOD LANDFILL (QUANAH RANGE)	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
PBA@FTSL	PBA@FTSL_IR	LTM						

FORT SILL
Army Defense Environmental Restoration Program
Military Munitions Response Program

MMRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 3/1

Installation Site Types with Future and/or Underway Phases

- 1 Firing Range
(FSILL-001-R-02)
- 1 Small Arms Range
(FSILL-002-R-01)

Most Widespread Contaminants of Concern

Metals, Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern

Sediment, Soil

Completed Remedial Actions (Interim Remedial Actions/ Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY
N/A				

Duration of MMRP

Date of MMRP Inception 200210

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201410/201410

Date of MMRP completion including Long Term Management (LTM): 202309

MMRP Contamination Assessment

Contamination Assessment Overview

Fort Sill occupies 93,828.73 acres in Comanche County in southwestern Oklahoma. The southeastern border of the facility is adjacent to the city of Lawton, OK. FTSL was settled as a cavalry post in 1869 to assist with Native American relations. The disappearance of the frontier in the early-1900s led to the transition from a cavalry outpost to an installation with a focus on field artillery. In 1911 the School of Fire for Field Artillery was founded at FTSL. The Fort performed this type of function throughout its history. In 1915 the first air unit in the US military service, the First Aero Squadron, was stationed at FTSL. Additional field schools that transferred to FTSL included the US Army Infantry School (then known as the School of Musketry) in 1913, the School for Aerial Observers (with the establishment of Henry Post Airfield) in 1918, the Army Aviation School from 1945 through 1954, and the Artillery and Guided Missile Center and the Artillery and Guided Missile School in 1955. Camp Doniphan was established in 1917 as a National Army cantonment. The Fort was used in these capacities through present day as the home for the Field Artillery Center and School for the US Army and US Marine Corps for training and operational missions.

In April 2003 the cantonment area (FSILL-001-R-01) at FTSL was identified as an MMRP site based on the US Army CTT Range inventory. In addition, there are nine sub-sites within the cantonment area that have been identified for MEC and MC investigation. The rocket-rifle- grenade range complex area in the southwest corner of the cantonment area consists of the following smaller ranges:

- FARTC rifle grenade range,
- Inert rifle grenade range,
- McKenzie Hill pistol and rifle ranges, and
- Two FARTC rocket ranges.

The Camp Doniphan sub-site (with the exception of the post ammunition storage area) is located on the western side of the cantonment area, the rifle range, circa 1906, is in the north-central portion of the cantonment area, the 8,000 yard artillery range and the 14,500 yard artillery range safety fans are in the northern cantonment area. Additional information was collected during the SI records collection visit in February 2004. An HRR was completed for FTSL that included information for the identified MMRP site. In 2005 an SI was completed.

In FY07, 448 acres of the 6,722-acre cantonment area (FSILL-001-R-01) were parceled into a new munitions response site (MRS), FSILL-001-R-02 (the southwest cantonment area), because the area is needed for construction and the cleanup of part of this new site is being addressed using Base Realignment and Closure (BRAC) funding. Thus, the new acreage for FSILL-001-R-01 is 6,274.

Munition Response Site Prioritization Protocol (MRSP) scores for these sites have been assigned.

Cleanup Exit Strategy

At FSILL-001-R-02, MEC clearance was completed for the upper 230 acres; the southern section of the site is lower risk. The FS is expected to recommend land use controls for this site. For FSILL-002-R-01 tribal consultation is ongoing. The FS is expected to recommend removal of contaminated soils from this site.

MMRP Previous Studies

Year	Title	Author	Date
2003	Closed, Transferring, and Transferred Range/Site Inventory Report for Fort Sill, Oklahoma,	Engineering and Environmental Management, Inc.	APR-2003
2004	Final Historical Records Review for Other Than Operational Ranges at Cantonment Area, Fort Sill, Oklahoma	USACE, Omaha District	AUG-2004
2005	Final Work Plan, Military Munitions Response Program, Site Inspection, Munitions Response Site, Fort Sill, Oklahoma	engineering-environmental Management, Inc.	MAR-2005
	Final Site Inspection Report Military Munitions Response Program Site Inspection Munitions Response Sites, Fort Sill, Oklahoma	USACE, Omaha District	AUG-2005
	Site Specific Final Report MEC Range Reconnaissance Surveys Former Grenade & Rocket Ranges (Southwest Cantonment Area), Fort Sill, OK	USA Environmental, Inc.	DEC-2005
2007	Final Work Plan, Former Grenade and Rocket Ranges, Southwest Cantonment Area, Parcels 1 and 2, Clearance of Munitions and Explosives of Concern	Tetra Tech EC, Inc.	JAN-2007
	Final After Action Report Clearance for Munitions and Explosives of Concern, Fort Sill, Oklahoma, Southwest Cantonment Area Parcel 1	Tetra Tech EC, Inc., Huntsville, Alabama	NOV-2007
2008	Final After Action Report Clearance for Munitions and Explosives of Concern, Fort Sill, Oklahoma, Southwest Cantonment Area Parcel 2	Tetra Tech EC, Inc., Huntsville, Alabama	MAR-2008
	Final After Action Report, Munitions and Explosives of Concern (MEC) Response Action, Former Grenade and Rocket Ranges, Parcels 2-W-N, 2-W-S, and Model Airplane Runway Site Within Parcel 1-E, Southwest Cantonment Area, Fort Sill, Oklahoma	Shaw Environmental, Inc.	APR-2008
2009	Remedial Investigation Feasibility Study Report, Military Munitions Response Program, MMRP Site FSILL-001-R-01, Fort Sill, Oklahoma	Shaw Environmental, Inc.	AUG-2009
2010	Final Remedial Investigation/Feasibility Study Report - Military Munitions Response Program - MMRP Site FSILL-001-R-01, Fort Sill, OK	U.S. Army Corps of Engineers, Tulsa District, Shaw Environmental, Inc.	NOV-2010

FORT SILL

Military Munitions Response Program

Site Descriptions

Site ID: FSILL-001-R-02
Site Name: SOUTHWEST CANTONMENT AREA
Alias: None

STATUS

Regulatory Driver: CERCLA
MRSPP Score: Evaluation pending
 Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)
 Media of Concern: Soil

Phases	Start	End
PA.....	200210.....	200305
SI.....	200309.....	200508
RI/FS.....	201006.....	201309
LTM.....	201310.....	202309
RIP Date:	N/A	
RC Date:	201309	

SITE DESCRIPTION

This MRS (FSILL-001-R-02) was created in FY07 on munitions response area (MRA) FSILL-001-R. The site has increased to 456.6 acres from the original estimate of 448 acres; however, a MEC survey and MEC removal action are based on 218.4 acres because the balance of the site has already been cleared of MEC under BRAC.

FSILL-001-R-02 is located on the southern boundary of the installation between the west and east range areas. The site is that part of the cantonment area that is not occupied by buildings and other structures and overlaps sub-sites 001 (FARTC rifle grenade range), 002 (inert rifle grenade range), 004 (McKenzie Hill small arms range complex), 005 [FARTC rocket range (1 of 2)], and 006 [FARTC rocket range (2 of 2)] as shown on the range map for FSILL-001R. From construction of the installation in 1869 until around 1960 various places within the site have been used for weapons training or demolition. Musket training was conducted in the area where the museum and parade grounds are now located. Aerial photographs show piles of ammunition previously located by Key Gate and 75mm munitions have been located near Rucker Park. Unexploded ordnance (UXO)/discarded military munitions (DMM)/MC has been discovered during building and utilities construction and other investigations throughout the site. Much of the site was historically part of an active range. The SI was completed in August 2005.

UXO/MEC clearance was completed within the northern 213-acres during 2007-2009. The RI/FS for the total area was conducted under the PBA contract that was awarded in 2010. It is anticipated that decision documents will be drafted in FY12, finalized in FY13, and that the path forward will consist of land use controls.

CLEANUP/EXIT STRATEGY

Fieldwork for MEC clearance was completed on the upper 230 acres; the southern section is a lower MEC risk area. The RI included surface, subsurface and groundwater sampling. It is anticipated that the FS will recommend land use controls during a long-term management phase.

Site ID: FSILL-002-R-01
Site Name: MB2/MB3 SMALL ARMS RANGES
Alias: CC-FTSL002

STATUS

Regulatory Driver: CERCLA
MRSPP Score: Evaluation pending
Contaminants of Concern: Metals
Media of Concern: Soil

Phases	Start	End
PA.....	200501.....	200503
RI/FS.....	200904.....	201206
RD.....	201206.....	201212
RA(C).....	201209.....	201410

RIP Date: N/A
RC Date: 201410

SITE DESCRIPTION

This site consists of two small arms ranges adjacent to each other called MB2 & MB3 with an overall size of approximately 15 acres. The site consists of earthen berms and a target area with foundations. Heavy metals are the most likely concern with the removal action that is anticipated due to the potential heavy metal contamination with lead as the primary constituent of concern. Approximately 1,100 cubic yards of potentially contaminated soil will most likely require removal action. This is the estimated size of the earthen berms and other soil that may be contaminated. During the RI/FS phase the entire 15 acres will require investigation to determine the lateral and vertical extent of the soil and groundwater constituents of concern. This will help to delineate the extent of the future RA at the site. The RA will likely consist of soil stabilization and excavation of the site. Due to the historical sensitivity of the site (it lies within a listed Historical Site and is a sacred area for the Native Americans), the restoration will require additional restoration to restore it to a natural setting. A Section 106 (National Historic Preservation Act) consultation period was to be required prior to the RI/FS phase, and another will be required prior to the RA phase.

The contract for the RI/FS was awarded in 2009. The fieldwork required for the RI was performed in November and December 2010. The FS was completed in 2011. Decision documents are expected in FY12. Design and implementation of the RA should occur in FY13.

CLEANUP/EXIT STRATEGY

An RI/FS has been completed. It is assumed that contaminated soils will require removal action. Design and implementation of the RA should occur in FY13. Tribal consultations are underway.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FSILL-001-R-01	CANTONMENT AREA	201111	

MMRP Schedule

Date of MMRP Inception 200210

Past Phase Completion Milestones

2003

PA (FSILL-001-R-01 - CANTONMENT AREA, FSILL-001-R-02 - SOUTHWEST CANTONMENT AREA)

2005

SI (FSILL-001-R-01 - CANTONMENT AREA, FSILL-001-R-02 - SOUTHWEST CANTONMENT AREA)

PA (FSILL-002-R-01 - MB2/MB3 SMALL ARMS RANGES)

2011

RI/FS (FSILL-001-R-01 - CANTONMENT AREA)

Projected Phase Completion Milestones

See attached schedule

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates

To Be Determined

Final RA(C) Completion Date: 201410

Schedule for Next Five-Year Review: 2014

Estimated Completion Date of MMRP at Installation (including LTM phase): 202309

FORT SILL MMRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FSILL-001-R-02	SOUTHWEST CANTONMENT AREA	RI/FS						
		LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FSILL-002-R-01	MB2/MB3 SMALL ARMS RANGES	RD						
		RA(C)						

Community Involvement

Technical Review Committee (TRC): None

Community Involvement Plan (Date Published): TBD

Restoration Advisory Board (RAB): No

Reason Not Established: The community has expressed no sufficient, sustained interest in a RAB.

Community Interest Solicited on: TBD

Efforts Taken to Determine Interest

Newspaper solicitations in past years have resulted in little or no community interest.

Results

Previous solicitations in past years have resulted in little or no community interest.

Follow-up Procedures

FTSL solicited community interest in 2011.

Additional Community Involvement Information

In January 1994, the FTSL Environmental Partnership Committee was formed. This committee is co-chaired by the FTSL Commanding General and the Mayor of Lawton and is comprised of members from Lawton and the eight county region around FTSL. This committee has been regularly updated on the status of the FTSL IRP.

FTSL has made numerous RAB evaluations. The most recent solicitation of public interest was a newspaper notice published in February 2009. Results of the RAB evaluation were documented in a May 2009 Decision Paper. The evaluation showed a lack of sufficient and sustained interest in forming a RAB by the community and government entities. Now that all of FTSL's IR sites are in LTM, the lack of cleanup activities does not support RAB formation or a community relations plan.

The Public Affairs Office will continue to monitor public interest for all of the FTSL Environmental Programs on a biennial basis. All future investigation and removal actions will be consulted with the tribal community.

Administrative Record is located at

Fort Sill's Environmental Quality Division Data Library
2592 Currie Road
Fort Sill, OK 73503-9051
580-442-4651 (Office)

Information Repository is located at

The IR has not been established but documents are provided to the public when requested from the Fort Sill office. A full copy of the AR also is maintained at ODEQ in Oklahoma City.

Current Technical Assistance for Public Participation (TAPP):N/A

TAPP Title: N/A

Potential TAPP: N/A

