

**FY2014**

**FORT RILEY**

**Army Defense Environmental Restoration Program**

**Installation Action Plan**

Printed 16 March 2015

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## 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 Installation Management Command (IMCOM)-Central, the US Army Environmental Command (USAEC), Fort Riley, 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

AI	Active/Inactive
AEDB-CC	Army Environmental Database - Compliance-related Cleanup
AEDB-R	Army Environmental Database - Restoration
AGL	Abandoned Gasoline Line
AOC	Area of Concern
AST	Aboveground Storage Tank
BRAC	Base Realignment and Closure
CA	Corrective Action
CAP	Corrective Action Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFI	NW Camp Funston WWI Incinerator
CHLF	Custer Hill Sanitary Landfill
CMI(C)	Corrective Measures Implementation (Construction)
COC	Contaminant of Concern
CR	Compliance Restoration
CS	Confirmatory Sampling
CTT	Closed, Transferred, Transferring
cu yd	cubic yard
DCE	Dichloroethylene
DCF	Dry Cleaning Facility
DCFA	Dry Cleaning Facilities Area
DD	Decision Document
DDESB	Department of Defense Explosives Safety Board
DES	Design
DPE	Dual-Phase Extraction
DPW	Department of Public Works
DS/GS	Direct Support/General Support
EE/CA	Engineering Evaluation/Cost Analysis
EOD	Explosive Ordnance Disposal
EPA	Environmental Protection Agency
EPR	Environmental Program Requirements
ER,A	Environmental Restoration, Army
ESD	Explanation of Significant Differences
ESS	Explosive Safety Submissions
FFA	Federal Facility Agreement
FORSCOM	US Army Forces Command
FRA	Final Remedial Action
FS	Feasibility Study
FTRI	Fort Riley (AEDB-R site designation)
FY	Fiscal Year
HRR	Historical Records Review
HRS	Hazard Ranking System
HSWA	Hazardous and Soil Waste Amendments
IAP	Installation Action Plan
ID	Identification

## Acronyms

IMCOM	Installation Management Command
IMP(C)	Implementation (Construction)
IMP(O)	Implementation (Operation)
INV	Investigation
IRA	Interim Remedial Action
IRP	Installation Restoration Plan
ISC	Initial Site Characterization
K	thousand
KDHE	Kansas Department of Health and Environment
KDWP	Kansas Department of Wildlife and Parks
kg	kilogram
KRBCA	Kansas Risk Based Corrective Action
KS	Kansas
LF	Landfill
LTM	Long-Term Management
LUC	Land Use Control
MAAF	Marshall Army Airfield
MC	Munitions Constituents
MCL	Maximum Contaminant Level
MEC	Munitions and Explosives of Concern
mg	milligrams
mm	millimeter
MMRP	Military Munitions Response Program
MNA	Monitored Natural Attenuation
MOGAS	Motor Gasoline
MRA	Munitions Response Area
MRS	Munitions Response Site
N/A	Not Applicable
NCDO	North Central District Office
NFA	No Further Action
NPL	National Priorities List
O&M	Operation and Maintenance
OB	Open Burning
OB/OD	Open Burning/Open Detonation
OD	Open Detonation
ODUSD(I&E)	Office of Deputy Undersecretary of Defense (Installation and Environment)
OU	Operable Unit
PA	Preliminary Assessment
PBC	Performance-Based Contract
PCB	Polychlorinated Biphenyls
PCE	Tetrachloroethylene (Perchloroethylene)
POL	Petroleum, Oil and Lubricants
PP	Proposed Plan
ppb	parts per billion
ppm	parts per million

## Acronyms

PSF	Pesticide Storage Facility
RA	Remedial Action
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operation)
RAB	Restoration Advisory Board
RACR	Remedial Action Completion Report
RAP	Remedial Action Plan
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Decision
RFA	RCRA Facility Assessment
RI	Remedial Investigation
RI/FS	Remedial Investigation / Feasibility Study
RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
RSK	Risk-Based Standards for Kansas
SEFL	Southeast Funston Landfill
SFL	Southwest Funston Landfill
SHSAR	Sherman Heights Small Arms Range
SI	Site Inspection
SVE	Soil Vapor Extraction
TAPP	Technical Assistance for Public Participation
TBD	To Be Determined
TCA	Trichloroethane
TCE	Trichloroethylene
TNT	Trinitrotoluene
TRC	Technical Review Committee
ug/L	micrograms per Liter
UPRR	Union Pacific Railroad
USACE	US Army Corps of Engineers
USAEC	US Army Environmental Command
USEPA	US Environmental Protection Agency
UST	Underground Storage Tank
UU/UE	Unlimited Use/Unrestricted Exposure
UXO	Unexploded Ordnance
VC	Vinyl Chloride
VOC	Volatile Organic Compound
WWI	World War I
WWII	World War II
XRF	X-ray Fluorescence

# Installation Information

## Installation Locale

**Installation Size (Acreage):** 100775

**City:** Junction City

**County:** Clay, Geary, and Riley

**State:** Kansas

## Other Locale Information

Fort Riley is located west of Manhattan (population 38,000) on 100,775 acres of land in portions of Clay, Geary, and Riley Counties in northeast Kansas. Interstate 70, Junction City (population 20,000), and Ogden (population 1,600) bound the installation to the south. Milford Lake (16,020 acres) bounds part of the western side of the installation.

## Installation Mission

The mission of Fort Riley, as an installation of excellence, is to:

- work in close partnership with local, regional, and state communities,
- provide trained and ready forces to meet joint force requirements across the full spectrum of current and future operations,
- transform and manage unit readiness as directed by the Army campaign plan,
- execute unit re-stationing as directed by US Army Forces Command (FORSCOM),
- execute garrison operations as directed by the IMCOM, and
- conduct homeland defense operations and support civil authorities.

## Lead Organization

IMCOM

## Lead Executing Agencies for Installation

US Army Corps of Engineers (USACE), Omaha District

USACE, Kansas City District

US Geological Survey

## Regulator Participation

### Federal

US Environmental Protection Agency (USEPA), Region VII

### State

Kansas Department of Health and Environment (KDHE), Bureau of Environmental Field Services  
- North Central District Office (NCDO)  
KDHE, Bureau of Environmental Remediation

## National Priorities List (NPL) Status

A score of 33.8 was recorded on 01-AUG-90.

**Date for RA(C) Completion:** 201609

**Date for NPL Deletion:** TBD

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

RAB established 199709



### Installation Program Summaries

#### IRP

**Primary Contaminants of Concern:** Metals, Perchlorate, Pesticides, Petroleum, Oil and Lubricants (POL), Volatiles (VOC)

**Affected Media of Concern:** Groundwater, Sediment, Soil, Surface Water

#### MMRP

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

**Affected Media of Concern:** Groundwater, Sediment, Soil, Surface Water

#### CR

**Primary Contaminants of Concern:** Petroleum, Oil and Lubricants (POL)

**Affected Media of Concern:** Groundwater, Soil

## 5-Year / Periodic Review Summary

### 5-Year / Periodic Review Summary

Status	Start Date	End Date	End FY
Complete	201110	201209	2012
Complete	200201	200207	2002
Complete	200701	200707	2007

### Last Completed 5-Year / Periodic Review Details

Associated ROD/DD Name	Sites
Dry Cleaning Facilities Study Area	FTRI-027
Dry Cleaning Facilities Study Area	FTRI-027
Former Fire Training Area - MAAF	FTRI-019
Former Fire Training Area - MAAF	FTRI-019
RECORD OF DECISION - SW FUNSTON LANDFILL	FTRI-003
RECORD OF DECISION - SW FUNSTON LANDFILL	FTRI-003
RECORD OF DECISION-PESTICIDE STORAGE FAC	FTRI-030
RECORD OF DECISION-PESTICIDE STORAGE FAC	FTRI-030
The 354 Area Solvent Detections	FTRI-031
The 354 Area Solvent Detections	FTRI-031

**Results** The EPA, Region VII has provided comments that are being addressed.

**Actions** Finalize the document & obtain the signature of the Garrison Commander.

**Plans** Do another 5-Year Review in 2017.

### Recommendations and Implementation Plans:

Fort Riley's FY12 five-year review deferred the protectiveness determination for the 354 Area Solvent Detections (OU005) pending the completion of a technical memorandum to evaluate the vapor intrusion pathway at building 367. This memorandum, completed and approved by USEPA in September 2013, found the remedy protective regarding the groundwater exposure pathways.

The remedies at the Southwest Funston Landfill (OU001) and the Dry Cleaning Facilities Area (OU003) are protective of human health and the environment.

The Pesticide Storage Facility (OU002) and the Former Fire Training Area - Marshall Army Air Field (OU004) received clean closure prior to the FY12 five-year review and were not reviewed.

## Land Use Control (LUC) Summary

**LUC Title:** 354 Area

**Site(s):** FTRI-031

**ROD/DD Title:** The 354 Area Solvent Detections

**Location of LUC**

FTRI-031 354 Area Solvent Detection site extends from near building 430 on the north to the Kansas River on the south.

**Land Use Restriction:** Media specific restriction - restrict drinking water well installation, Restrict land use - No residential use

**Types of Engineering Controls:** None

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

**Date in Place:** 200607

**Modification Date:** N/A

**Date Terminated:** N/A

**Inspecting Organization:** Installation

**Record of LUC:** Master Plan or Equivalent

**Documentation Date:** 200607

**LUC Enforcement:** 5 Year Reviews

**Contaminants:** VOC

**Additional Information**

N/A

**LUC Title:** Dry Cleaning Facilities

**Site(s):** FTRI-027

**ROD/DD Title:** Dry Cleaning Facilities Study Area

**Location of LUC**

The former Dry Cleaning Facilities Area (DCFA) is located in the southwest corner of the Main Post cantonment about 800 feet north of the Kansas River. The DCFA operated until 2002. The primary dry cleaning solvent was tetrachloroethylene (PCE).

**Land Use Restriction:** Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation

**Types of Engineering Controls:** None

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

**Date in Place:** 200802

**Modification Date:** N/A

**Date Terminated:** N/A

**Inspecting Organization:** Installation

**Record of LUC:** Master Plan or Equivalent

**Documentation Date:** N/A

**LUC Enforcement:** 5 Year Reviews

**Contaminants:** VOC

**Additional Information**

N/A

**LUC Title:** SW Funston Ldfl Controls

## Land Use Control (LUC) Summary

**Site(s):** FTRI-003

**ROD/DD Title:** RECORD OF DECISION - SW FUNSTON LANDFILL

**Location of LUC**

Southwest Funston Landfill (Operable Unit 001) covers approximately 120 acres and is located in the southern portion of Fort Riley adjacent to the southwest corner of the Camp Funston cantonment area (Figure 1-1). It is bordered on the south by the Kansas River, on the north by Well House Road, on the west by a former meander bend in the Kansas River and on the east by Threemile Creek. The landfill lies entirely within the 100-year floodplain of the Kansas River.

**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, Landfill restriction - Restrict plantings that interfere LF cap or cover system (roots that penetrate the cap or cover system), Landfill restriction - Restrict vehicular traffic, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation

**Types of Engineering Controls:** Fences, Signs

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

**Date in Place:** 199710

**Modification Date:** N/A

**Date Terminated:** N/A

**Inspecting Organization:** Installation

**Record of LUC:** Master Plan or Equivalent

**Documentation Date:** 200708

**LUC Enforcement:** Annual Inspections, 5 Year Reviews

**Contaminants:** VOC

**Additional Information**

N/A

# Cleanup Program Summary

## Installation Historic Activity

The history of Fort Riley is closely linked to the history of American westward expansion and development. As early as the 1840s, travelers along the Oregon and Santa Fe Trails began a massive migration across the high plains of Kansas, which created the need for a series of military installations to protect them as they traveled west.

In 1852 Major E.A. Ogden established a temporary camp called Camp Center, north of the Kansas River, near the junction of the Smoky Hill and Republican Rivers. In 1853, the US Congress authorized establishment of a permanent installation there and renamed the encampment Fort Riley, in honor of Major General Bennett C. Riley who led the first military escort along the Santa Fe Trail in 1829.

Fort Riley evolved from a frontier outpost to a military training installation in the first 60 years following its inception in 1853. In the beginning, industry was limited to a few shops (e.g., blacksmiths) and storehouses. Early sewers dumped directly into the rivers. Military operations were limited to small arms, horse-mounted cavalry, and horse-drawn artillery. Practice ranges were located near the barracks areas in the lowlands, and river bluffs were used as natural backstops for the ranges.

During World War I (WWI), there was a build-up of forces at FTRI. Camp Funston was established during WWI and, in approximately three months, 1,401 temporary buildings were erected there to house troops. Camp Whitside was also built-up for WWI. Military training activities became more complex and the infrastructure more elaborate. Motor pools and auto repair shops replaced stables and blacksmith shops. Marshall Army Air Field became operational in 1921. The installation areas were electrified, and wastewater treatment plants were constructed.

Prior to World War II (WWII) and through the 1940s, Fort Riley expanded its transportation and industrial activities. Many motor pools were established in Camp Funston, Camp Whitside, Camp Forsyth, and the Main Post. Underground storage tanks (UST) were installed, and a gasoline pipeline was run from the rail spur on the north side of the Kansas River to Marshall Army Air Field (MAAF). The installation infrastructure included laundry and dry cleaning facilities, numerous vehicle repair shops, boiler plants, and an asphalt plant.

Through the early years of WWII, the installation included the last vestiges of horse-mounted troops, including an animal dip facility on the rail spur for animals brought onto the installation. In 1949, the horse-mounted cavalry was dissolved.

The heavy weapons training was focused on the main impact area, which was acquired in 1942, but small arms ranges were still prevalent along the river bluffs, especially in the Camp Forsyth, Camp Whitside, and Camp Funston areas. During the period between WWII and Vietnam, many of the temporary facilities built for WWII, especially those in Camp Forsyth, Camp Funston, and Camp Whitside, became obsolete and surplus, so they were demolished.

In 1955 the First Infantry Division was assigned to Fort Riley. Troop barracks and tactical equipment shops were built on Custer Hill and integrated with troop support facilities for health and recreational services. Family housing also expanded. Small arms training shifted to the ranges around the impact area.

During the Vietnam Era, environmental concerns came to the forefront. The wastewater treatment plants and controlled landfills were put into use. The older industrial activities were frequently upgraded or centralized. Transportation and industrial facilities that had been abandoned were demolished. A systematic review and upgrade of facilities focusing on several environmental concerns proceeded, including USTs, polychlorinated biphenyl (PCB)-containing transformers, and asbestos-containing materials used in buildings. With the passage of stricter federal and state laws governing air and water pollution, protection of natural resources, waste management, and environmental regulation progressively focused on the management of industrial and military activities.

Army personnel are trained at Fort Riley. The installation's history does not include large-scale manufacturing activities. Rather, development of Fort Riley included ancillary activities to support overall installation operations, including print shops, photographic processing facilities, laboratories, furniture repair, dry cleaning, paint shops, sewage treatment plants, and numerous vehicle maintenance and wash facilities.

Hazardous materials used include:

- Ordnance (of which there is no evidence of release of toxic chemical agents but there are indications that depleted uranium spotting rounds for the Davy Crockett weapon system may have been expended);
- Chlorinated solvents associated with furniture repair, dry cleaning, and cleaning of printing equipment;
- Pesticides for clearing of brush, pest and termite control, and routine maintenance of facility grounds;

# Cleanup Program Summary

## Installation Historic Activity

- A variety of small quantities of chemicals associated with laboratories;
- Silver-bearing solutions from the photographic processing and x-ray facilities;
- PCB fluids in electrical equipment; and
- Large quantities of petroleum-based fuels and cleaners associated with vehicle use, maintenance, and repair.

In addition to the waste outlined above, throughout its operational life the installation has generated typical, nonhazardous municipal waste and construction debris.

Past activities at Fort Riley have environmentally impacted several areas of the installation, primarily as the result of spills and leaks, and from previously approved waste disposal and handling practices. Cleanup of Fort Riley began in 1990 - 1991 in response to the Army's Installation Restoration Program (IRP) and the federal facility agreement (FFA).

Major tenants at Fort Riley include the Kansas Army National Guard, the Army Reserve, and the Irwin Army Community Hospital. In 1990, the installation was placed on the national priorities list (NPL) with a hazard ranking system (HRS) score of 33.8. An FFA was signed by the USEPA, Region VII, KDHE, and the Army and became effective on Feb. 28, 1991. The FFA requires that the installation address all significant environmental releases under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Resource Conservation and Recovery Act (RCRA).

## Installation Program Cleanup Progress

### IRP

**Prior Year Progress:** FTRI-001 - Conducted groundwater sampling event and cover inspection  
FTRI-003 - Conducted groundwater sampling event and cover/revetment repairs.  
FTRI-009 - Completed RI/FS, PP, and ROD  
FTRI-027 - Conducted groundwater sampling event  
FTRI-031 - Conducted two groundwater sampling events  
FTRI-056 - Conducted groundwater sampling  
FTRI-057 - Drilled 9 additional groundwater monitoring wells  
FTRI-063, 066, & 068 - Continue dual-phase extraction efforts  
FTRI-074 - Completed RI field work

**Future Plan of Action:** Conduct 2016 groundwater sampling for 2017 5-Year Review  
FTRI-001 - Conduct groundwater sampling  
FTRI-003 - Request site closure  
FTRI-009 - Complete RD in 2015 and begin groundwater/surface water monitoring  
FTRI-027 - Conduct groundwater sampling and conduct additional remediation  
FTRI-031 - Develop an ESD in 2015 to close the site  
FTRI-056 & 057 - Close sites in 2015  
FTRI-063, 066, & 068 - Continue dual-phase extraction efforts  
FTRI-074 - Future actions will be based on the RI results

### MMRP

**Prior Year Progress:** FTRI-001-R-02 - RI/FS Report and Proposed Plan approved  
FTRI-003-R-01 - RI/FS Work Plan/Addendum approved and second field mobilization completed

**Future Plan of Action:** FTRI-001-R-02 - Complete ROD  
FTRI-001-R-01 - Complete RI/FS/PP/ROD

### CR

**Prior Year Progress:** CC-FTRI-01 - Conducted groundwater sampling and semiannual free-product recovery  
CC-FTRI-09 - Building 388 - Replaced leaking sump, collected groundwater samples and free product recovery. Building 5320 - No activity  
CC-FTRI-11 - No activity  
CC-FTRI-12 - Conduct site investigation

**Future Plan of Action:** CC-FTRI-01 - Groundwater sampling and semiannual free-product recovery; Install two new bedrock wells to more accurately monitor the plume  
CC-FTRI-09 - Building 388 - Continue groundwater sampling and free product recovery. Building

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## Cleanup Program Summary

5320 - Develop cleanup plan once ASTs and lines are deactivated  
CC-FTRI-11 - Conduct additional site investigation and conduct remediation  
CC-FTRI-12 - Further actions based on SI results

**FORT RILEY**  
**Army Defense Environmental Restoration Program**  
**Installation Restoration Program**



# IRP Summary

**Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count:** 72/61

## Installation Site Types with Future and/or Underway Phases

1	Explosive Ordnance Disposal Area (FTRI-009)
1	Incinerator (FTRI-074)
2	Landfill (FTRI-001, FTRI-003)
1	POL (Petroleum/Lubricants) Lines (FTRI-057)
1	Soil Contamination After Tank Removal (FTRI-056)
2	Spill Site Area (FTRI-027, FTRI-031)
3	Underground Tank Farm (FTRI-063, FTRI-066, FTRI-068)

## Most Widespread Contaminants of Concern

Metals, Perchlorate, Pesticides, Petroleum, Oil and Lubricants (POL), Volatiles (VOC)

## Media of Concern

Groundwater, Sediment, Soil, Surface Water

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

Site ID	Site Name	Action	Remedy	FY
FTRI-061	FORMER GAS SERVICE STATION BLDG 354	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1990
FTRI-008	PCB STORAGE CONEX (BUILDING 348)	FRA	IN-SITU SOIL TREATMENT	1991
FTRI-059	REMOVE USTS	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1991
FTRI-063	FMR BLDG 1044 DISPENSING STATION	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1991
FTRI-066	FMR BLDG 1245 DISPENSING STATION	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1991
FTRI-067	FMR BLDG 1539 DISPENSING STATION	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1991
FTRI-068	FMR BLDG 1637 DISPENSING STATION	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1991
FTRI-069	FMR BLDG 1890 DISPENSING STATION	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1991
FTRI-010	PESTICIDE (2-4D) UST AT CAMP FUNSTON	FRA	WASTE REMOVAL - SOILS	1992
FTRI-013	ABANDONED VOC TANKS NORTH OF IACH	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1992
FTRI-049	MERCURY CONTAMINATION AREAS	FRA	REMOVAL	1992
FTRI-054	CUSTER HILL PX USTS BLDG 5320	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1992
FTRI-061	FORMER GAS SERVICE STATION BLDG 354	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1992
FTRI-003	SOUTHWEST FUNSTON LANDFILL	IRA	OTHER	1994
FTRI-028	FMR FIRE TRAINING AREA CAMP FUNSTON	FRA	WASTE REMOVAL - SOILS	1994

## IRP Summary

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

Site ID	Site Name	Action	Remedy	FY
FTRI-030	PESTICIDE STORAGE FACILITY (MIXING)	IRA	WASTE REMOVAL - SOILS	1994
FTRI-035	NON-IMPACT AREA SMALL ARMS RANGES	IRA	WASTE REMOVAL - SOILS	1994
FTRI-060	MAINPOST PX GAS STATION / 218	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1994
FTRI-001	CUSTER HILL SANITARY LANDFILL	FRA	CAPPING	1995
FTRI-027	DRY CLEANING FACILITIES AREA	IRA	SOIL VAPOR TREATMENT	1995
FTRI-064	FMR BLDG 1090 DISPENSING STATION	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1995
FTRI-065	FMR BLDG 1190 DISPENSING STATION	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1995
FTRI-073	BLDG 8360 FUEL OIL UST	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1995
FTRI-003	SOUTHWEST FUNSTON LANDFILL	IRA	CAPPING	1996
FTRI-019	FORMER FIRE TRAINING AREA FFTA-MAAF	IRA	SOIL VAPOR TREATMENT	1996
FTRI-019	FORMER FIRE TRAINING AREA FFTA-MAAF	IRA	BIOREMEDIATION	1996
FTRI-070	FMR BLDG 2341 DISPENSING STATION	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1996
FTRI-003	SOUTHWEST FUNSTON LANDFILL	IRA	FENCE OR OTHER SITE ACCESS CONTROL MEASURES	1997
FTRI-003	SOUTHWEST FUNSTON LANDFILL	FRA	CAPPING	1997
FTRI-057	6200 AREA FUEL OIL LINE	FRA	WASTE REMOVAL - SOILS	1997
FTRI-062	TMP GAS STATION BLDG 388	IRA	FREE PRODUCT RECOVERY	1997
FTRI-063	FMR BLDG 1044 DISPENSING STATION	IRA	FREE PRODUCT RECOVERY	1997
FTRI-029	OLD INCINERATOR SITE SE-CAMP FUNSTON	IRA	WASTE REMOVAL - SOILS	2000
FTRI-036	SOUTHEAST FUNSTON LANDFILL (ANCHOR)	IRA	CAPPING	2001
FTRI-038	FORSYTH LANDFILL(S)	IRA	OTHER	2001
FTRI-019	FORMER FIRE TRAINING AREA FFTA-MAAF	IRA	ALTERNATE WATER SUPPLY/WATER SUPPLY TREATMENT	2003
FTRI-019	FORMER FIRE TRAINING AREA FFTA-MAAF	FRA	NATURAL ATTENUATION	2005
FTRI-027	DRY CLEANING FACILITIES AREA	IRA	BIOREMEDIATION - IN SITU GROUNDWATER	2006
FTRI-027	DRY CLEANING FACILITIES AREA	IRA	EX SITU SOIL TREATMENT	2006
FTRI-027	DRY CLEANING FACILITIES AREA	IRA	CHEMICAL REDUCTION/OXIDATION	2006
FTRI-031	354 AREA SOLVENT DETECTIONS (354)	FRA	NATURAL ATTENUATION	2007
FTRI-027	DRY CLEANING FACILITIES AREA	FRA	NATURAL ATTENUATION	2008
FTRI-027	DRY CLEANING FACILITIES AREA	FRA	INSTITUTIONAL CONTROLS	2008

## IRP Summary

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

Site ID	Site Name	Action	Remedy	FY
FTRI-056	ABANDONED GASOLINE LINE	IRA	BIOREMEDIATION - IN SITU	2009
FTRI-063	FMR BLDG 1044 DISPENSING STATION	FRA	DUAL-PHASE EXTRACTION	2010
FTRI-066	FMR BLDG 1245 DISPENSING STATION	FRA	DUAL-PHASE EXTRACTION	2010
FTRI-068	FMR BLDG 1637 DISPENSING STATION	FRA	DUAL-PHASE EXTRACTION	2010
FTRI-056	ABANDONED GASOLINE LINE	FRA	BIOREMEDIATION - IN SITU GROUNDWATER	2011
FTRI-074	WWI INCINERATOR, NW CAMP FUNSTON	IRA	REMOVAL	2011
FTRI-056	ABANDONED GASOLINE LINE	FRA	REMOVAL	2012
FTRI-057	6200 AREA FUEL OIL LINE	FRA	WASTE REMOVAL - SOILS	2014

### Duration of IRP

**Date of IRP Inception:** 198312

**Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC):** 201610/204409

**Date of IRP completion including Long Term Management (LTM):** 204409

# IRP Contamination Assessment

## Contamination Assessment Overview

The Army initially began environmental restoration-related investigations as a result of the 1982 closure activities of the Southwest Funston Landfill (SFL) where monitoring indicated groundwater contamination.

The installation was evaluated for placement on the NPL with an HRS score of 33.8. The placement on the NPL was announced in 1990. An FFA was signed in August 1990 to address the CERCLA and RCRA mandates. These seven IRP sites have been designated as operable units (OUs):

- FTRI-003 - SFL (OU001),
- FTRI-030 - Pesticide Storage Facility (PSF)(OU002),
- FTRI-027 - DCFA (OU003),
- FTRI-019 - Former Fire Training Area-Marshall Army Airfield (MAAF) (OU004),
- FTRI-031 - 354 Area Solvent Detections (OU005),
- FTRI-009 - Open Burning (OB)/Open Detonation (OD) Ground (Range 16) (OB/OD)(OU006), and
- FTRI-074 - WWI Incinerator, NW Camp Funston WWII Incinerator (CFI) (OU007).

These sites have been identified as sites with contamination due to past operational activities which resulted in spills and releases to the environment. The primary contaminants of concern (COC) are chlorinated solvents and pesticides.

The SFL was operated from the mid-1950s through 1981. Post-closure monitoring and RI/FS sampling efforts detected contaminants such as chlorinated solvents, petroleum hydrocarbons, and metals in the groundwater at low levels. On Aug. 6, 1997, the ROD was signed, and institutional controls and LTM have been implemented. The remedy has achieved the required reduction in the risk by meeting the USEPA maximum contaminant levels (MCLs). A remedial action completion report (RACR) was signed by the USEPA in February 2010 after vinyl chloride (VC), the last COC, dropped below regulatory levels. Ongoing LTM is required to document that contaminant levels remain below the MCLs.

The USEPA approved an explanation of significant differences (ESD) and site closure for the PSF in 2010. The site is now unlimited use/unrestricted exposure (UU/UE) and no further action (NFA) is required.

The DCFA has two sites with soil and groundwater contamination from dry cleaning operations using PCE. The PCE degradation products, trichloroethylene (TCE), dichloroethylene (DCE) and VC, are present in the groundwater. Dry cleaning occurred at Buildings 180/181 (demolished in 2000) and Building 183 (demolished in 2002). There is minimal contamination at the Building 183 location. The eastern groundwater plume originates at the former site of Building 180/181 with two hot spots: one east of the building centered on a sewer manhole and one at the southwest corner of the building. A utility trench appears to be the conduit for transporting PCE to the west, with the western groundwater plume centered on well DCF02-42. Both plumes move off the terrace into the alluvium and are not further degrading Kansas River water quality. The ROD has been signed and a RD/remedial action plan (RAP) has been approved. The alternative of monitored natural attenuation (MNA) with institutional controls is being implemented. The ROD required conducting annual groundwater sampling in fiscal year (FY)08, FY09, and FY10. By FY09, the groundwater bioremediation at the eastern plume showed signs of stalling out. In 2010 this groundwater was retreated and four quarterly sampling events were completed in 2011. The additional injection was successful in accelerating the decrease in groundwater contaminant levels in the eastern plume. Fort Riley is conducting annual sampling.

The USEPA approved a RACR and site closure for the former fire training area-MAAF in 2010. The original COCs were PCE and its degradation products. The site is now UU/UE and NFA is required.

The 354 Area Solvent Detections site has contamination that was discovered during investigations of a POL/UST site. There are VOCs that include PCE, TCE, DCE and benzene. The ROD was signed in 2006 and the RD/RAP was approved. The site is in MNA with institutional control. No contaminants were above the MCLs in the alluvial aquifer of the Kansas River for the three years post-ROD. Contamination remains in place as groundwater is above the MCLs in the terrace aquifer.

At the OB/OD site, TCE is the current COC in the groundwater, soil, and surface water. The RI fieldwork was conducted in 2012 to be followed by four quarterly groundwater sampling events.

At the CFI site, arsenic is the current COC in the groundwater, soil, and surface water. The RI fieldwork was conducted in 2012 to be followed by four quarterly groundwater sampling events.

# IRP Contamination Assessment

## Contamination Assessment Overview

At the non-OU sites, pre-RCRA-I petroleum releases occurred at FTRI-056 Abandoned Gas Line (AGL) and FTRI-057 6200 Area Fuel Oil Line (Anchor). Arsenic is the COC at the FTRI-001 Custer Hill Sanitary Landfill (CHLF).

## Cleanup Exit Strategy

The principal objectives of the Fort Riley IRP are to protect human health and the environment while working toward the ultimate goal of delisting the installation from the NPL. There is the potential that some of the sites will not reach UU/UE but they will be monitored and under the installation's control. The installation's real property master plan will preclude their utilization for unacceptable land uses. In order to accomplish these objectives, the following efforts have been determined to be essential and must be achieved:

- Complete RI/FS, PP, and ROD for OB/OD and CFI.
- Conduct LTM for the OUs as described in the PPs, documented by the RODs, and determined to be required by the analysis of the data from the sampling events.
- Develop RACRs for those OUs that have attained the RA objectives defined in the PPs and RODs. Fort Riley will then request partial deletion of those sites.
- Perform the five-year review requirements as required under the CERCLA for all sites that have hazardous substances left in place that do not allow for UU and UE. Site closure will be requested when a site attains UU/UE.
- Conduct remediation efforts to include operations of the dual-phase extraction (DPE) systems to address fuels-related soil and groundwater contamination at FTRI-063 (1044), -066 (1245), and -068 POL (1637) sites. These three sites are located in Camp Funston, and are covered under FTRI-057 (Anchor site). Once the soil and groundwater contaminants have reached concentrations that ensure no restrictions to a site's use, closeout approval will be sought.
- FTRI-056 AGL has undergone in situ treatment for fuels-related soil and groundwater contamination. Based on post-treatment monitoring additional remediation was conducted. Excavation of the contaminated soil, landfarming, and treatment of groundwater was performed in 2011. Once the soil and groundwater contaminants have reached concentrations that ensure no restrictions on the site's use, closeout approval will be sought.
- Develop the final RACR to begin the procedures for requesting delisting of the installation from the NPL.
- Well abandonment will occur at each site when groundwater monitoring is complete.

## IRP Previous Studies

Year	Title	Author	Date
1993	Remedial Investigation for Remedial Investigation/Feasibility Study Pesticide Storage Facility	Law Environmental	DEC-1993
1994	Remedial Investigation Report for Southwest Funston Landfill	Law Environmental	APR-1994
	Feasibility Study Report for Remedial Investigation/Feasibility Study Southwest Funston Landfill	Law Environmental	APR-1994
	Proposed Plan Southwest Funston Landfill	Fort Riley	NOV-1994
1995	Remedial Investigation Addendum and Feasibility Study Report for Remedial Investigation/Feasibility Study Pesticide Storage Facility	Law Environmental	MAY-1995
	Pre-Design Work Plan Bioventing and Soil Vapor Extraction POL UST Investigation/Remedial Action Plans Fort Riley, Kansas (1245)	Dames & Moore	AUG-1995
	Pre-Design Activity Report - Former Building 1245 Bioventing and Soil Vapor Extraction POL UST Investigation/Remedial Action Plans Fort Riley, Kansas	Dames & Moore	NOV-1995
	Record of Decision Southwest Funston Landfill	Fort Riley	NOV-1995
	Final Groundwater Pre-Design Investigation Work Plan POL/UST Remedial Design Fort Riley, Kansas (Bldgs 218, 354, 388, 1044, 1245, 1539, 1637, 1890, 2345, 5320, 6232, 8340, AGL, POL Tank Farm)	HydroGeoLogic	DEC-1995
1996	Results of the Free Product Investigation Work Plan POL/UST Sites Fort Riley Military Reservation, Fort Riley, Kansas (388, 1044, 1637, 5320, Pond)	HydroGeoLogic	MAY-1996
1997	Final Site Investigation Report POL UST Sites 1044, 1245, and 1637 Fort Riley, Kansas	Dames & Moore	JUL-1997
	Proposed Plan Pesticide Storage Facility	Fort Riley	AUG-1997
	Remedial Investigation Addenda Pesticide Storage Facility	Law Environmental	AUG-1997
	Record of Decision Pesticide Storage Facility	Fort Riley	SEP-1997
2001	Remedial Investigation Report for Former Fire Training Area Marshall Army Airfield	Burns & McDonnell	MAR-2001
	Draft Project Report Field Investigation Former Incinerator Site Ft. Riley, Kansas	Arrowhead	APR-2001
2002	Five-Year Review Report	DPW Environmental Fort Riley, KS	AUG-2002
2003	Site-Specific Sampling and Analysis Plan Long Term Monitoring Fort Riley Southwest Funston Landfill	Environmental Chemical Corporation	JAN-2003
	Installation-Wide Site Investigation Derived Waste Management Plan for Environmental Investigations at Fort Riley, Kansas	Burns & McDonnell	APR-2003

## IRP Previous Studies

Year	Title	Author	Date	
2003	Feasibility Study FFTA-MAAF	Burns & McDonnell	SEP-2003	
2004	Installation-Wide Sampling and Analysis Plan for Environmental Investigations at Fort Riley, Kansas	Burns & McDonnell	FEB-2004	
	Remedial Investigation Addendum for the Dry Cleaning Facilities Area	Burns & McDonnell	APR-2004	
	Draft Final Proposed Plan FFTA-MAAF	Burns & McDonnell	MAY-2004	
	Abandoned Gas Line, Site Investigation Report AGL Terminus Area	McKinzie	SEP-2004	
	Technical Memorandum for Open Burning/Open Detonation Ground Range 16 at Fort Riley, Kansas	Burns & McDonnell	OCT-2004	
	354 Area Solvent Detection Site, Feasibility Study Report 354	Burns & McDonnell	DEC-2004	
	2005	KRBCA Checklists for POL/UST Sites 1044, 1245, & 1637 Fort Riley, Kansas	ECC/Burns & McDonnell	FEB-2005
Feasibility Study Addendum for the Dry Cleaning Facilities Study Area		Burns & McDonnell	MAR-2005	
Site-Specific Field Sampling Plan for Groundwater, Spring, and Seep Sampling With Addendum - Spring 2005 for Open Burning/Open Detonation Ground (Range 16)		Burns & McDonnell	MAY-2005	
354 Area Solvent Detection Site, Soil-Gas Investigation Report 354 Area Solvent Detection		Burns & McDonnell	MAY-2005	
354 Area Solvent Detection Site, Proposed Plan 354 Area Solvent Detection		Burns & McDonnell	MAY-2005	
Pilot Study Report Pilot Study for Soil Remediation 354 Area Solvent Detections		Burns & McDonnell	JUN-2005	
Site Investigation Work Plans for the Petroleum, Oil, and Lubricant Sites 1044, 1245, & 1637 at Main Post Fort Riley, Kansas		ECC/Burns & McDonnell	JUN-2005	
Record of Decision Former Fire Training Area - Marshall Army Airfield		Burns & McDonnell	JUL-2005	
Draft Final EE/CA Report Non-Time Critical Removal Action Abandoned Gas Line/Terminus Fort Riley, Kansas		McKinzie	AUG-2005	
Community Involvement Plan Fort Riley Superfund Site Fort Riley, Kansas		DPW Environmental Fort Riley, KS	AUG-2005	
Action Memorandum Non-Time Critical Removal Action Abandoned Gas Line/Terminus Fort Riley, Kansas		McKinzie	DEC-2005	
2006		Remedial Design/Remedial Action Plan Former Fire Training Area - Marshall Army Airfield	Burns & McDonnell	JAN-2006
		Former Fire Training Area-Marshall Army Airfield, Draft Final Remedial Design/Remedial Action Plan	Burns & McDonnell	JAN-2006
	Work Plan Expanded Site Investigation (Multiple Sites) at Fort Riley, Kansas	Burns & McDonnell	MAY-2006	
	Record of Decision 354 Area Solvent Detections	Burns & McDonnell	JUN-2006	
	Work Plan Removal Action AGL Terminus Area Marshall Army Airfield Fort Riley Kansas	McKinzie	JUN-2006	
	Site Specific Sampling Plans for Groundwater Monitoring Activities Building 354	EA Engineering	AUG-2006	

## IRP Previous Studies

**2006**

Title	Author	Date
Site Specific Sampling Plans for Groundwater Monitoring Activities Former Fire Training Area-Marshall Airfield	EA Engineering	AUG-2006
Quality Control Summary Report June 2006 Sampling Event Pesticide Storage Facility	Corps of Engineers - Kansas City District	AUG-2006
Site-Specific Sampling Plans for Groundwater Monitoring Activities Dry Cleaning Facility Area	EA Engineering	AUG-2006
Work Plan Pilot Study for Soil and Groundwater Remediation DCF Study Area	Burns & McDonnell	SEP-2006
Quality Control Summary Reports Summer 2006 Sampling Events for the Expanded Site Investigation (Multi-Sites) at Fort Riley, Kansas	Burns & McDonnell	SEP-2006
2007 Feasibility Study Addendum for the Dry Cleaning Facilities Study Area	Burns & McDonnell	OCT-2006
Work Plan Camp Funston Incinerator Fort Riley, Kansas	Corps of Engineers - Kansas City District	NOV-2006
Magnetometer Anomaly Investigation Work Plan for the Petroleum, Oil, and Lubricant Sites 1044, 1245, and 1637 at Camp Funston Fort Riley, Kansas	ECC/Burns & McDonnell	NOV-2006

**2007**

Quality Control Summary Report December 2006 Sampling Event Camp Funston Incinerator Fort Riley, Kansas	Corps of Engineers - Kansas City District	FEB-2007
Draft Final Remedial Design/Remedial Action Plan 354 Area Solvent Detections	Burns & McDonnell	MAR-2007
Report for Sampling at Camp Funston Incinerator December 2006	Corps of Engineers - Kansas City District	MAR-2007
Magnetometer Anomaly Investigation Report for the Petroleum, Oil, and Lubricant Sites 1044, 1245, and 1637 at Camp Funston Fort Riley, Kansas	ECC/Burns & McDonnell	MAR-2007
Quality Control Summary Report for April 2007 Groundwater Sampling Event 354 Site	EA Engineering	MAY-2007
Design Addendum Investigation Work Plan for the Petroleum, Oil, and Lubricant Sites 1044, 1245, and 1637 at Camp Funston Fort Riley, Kansas	ECC/Burns & McDonnell	MAY-2007
Quality Control Summary Report March 2007 Sampling Event Former Fire Training Area - Marshall Army Airfield	EA Engineering	MAY-2007
Quality Control Summary Report March 2007 Sampling Event Southwest Funston Landfill	Environmental Chemical Corporation	MAY-2007
Quality Control Summary Report for the April 2007 Groundwater Sampling Event at the Dry Cleaning Facilities Area	EA Engineering	JUN-2007
2007 Annual Sampling Report 354 Solvent Detections Site	EA Engineering	JUL-2007
2007 Annual Sampling Report Dry Cleaning Facilities Area	EA Engineering	JUL-2007
2007 Annual Sampling Report FFTA-MAAF	EA Engineering	JUL-2007
Real Property Master Plan Digest (Institutional Controls)	Black & Veatch	AUG-2007
Quality Control Summary Report Air Site Investigation for the Petroleum, Oil, and Lubricant Sites 1044, 1245, and 1637 Pilot Study Camp Funston Fort Riley, Kansas	ECC/Burns & McDonnell	SEP-2007
Long Term Monitoring Report 2007 Southwest Funston	Environmental Chemical	SEP-2007



## IRP Previous Studies

2007

Title	Author	Date
Landfill	Corporation	
Second Five-Year Review Report Fort Riley, Kansas	Corps of Engineers - Kansas City District	SEP-2007
Quality Control Summary Report August 2007 Groundwater Sampling Event at the Open Burning/Open Detonation (Range 16)	Burns & McDonnell	OCT-2007
Proposed Plan for the Dry Cleaning Facilities Area	Burns & McDonnell	OCT-2007
Quality Control Summary Report for the September 2007 Groundwater Sampling Event at the Dry Cleaning Facilities Area (Pilot Study)	Burns & McDonnell	OCT-2007
2007 Annual Inspection Report Southwest Funston Landfill	Corps of Engineers - Kansas City District	OCT-2007
Reports for Expanded Site Investigation (Multiple Sites) at Fort Riley, Kansas	Burns & McDonnell	OCT-2007
Quality Control Summary Report Air Sample Data for the POL Sites 1044, 1245, and 1637 Pilot Study Camp Funston Fort Riley, Kansas	ECC/Burns & McDonnell	NOV-2007

2008

Pilot Study Report for the Dry Cleaning Facilities Area	Burns & McDonnell	JAN-2008
Record of Decision Dry Cleaning Facilities Area	Burns & McDonnell	JAN-2008
Site-Specific Plans for Groundwater Monitoring Activities Southwest Funston Landfill Fort Riley, Kansas	CTI	MAR-2008
Quality Control Summary Report for February 2008 Sampling Event Former Fire Training Area - Marshall Army Airfield Fort Riley, Kansas	EA Engineering	APR-2008
Quality Control Summary Report for March 2008 Sampling Event 354 Area Solvent Detections Site Fort Riley, Kansas	EA Engineering	MAY-2008
Quality Control Summary Report for Groundwater Monitoring Activities Southwest Funston Landfill Fort Riley, Kansas	CTI	MAY-2008
Draft Final Work Plan Addendum Expanded Site Investigation (Multiple Sites) at Fort Riley, Kansas	Burns & McDonnell /Malcolm Pirnie	MAY-2008
Engineering Design Report for the Petroleum, Oil, and Lubricant Sites 1044, 1245, and 1637 at Camp Funston Volumes I & 2 Fort Riley, Kansas	ECC/Burns & McDonnell	JUN-2008
Quality Control Summary Report for April 2008 Sampling Event at the Dry Cleaning Facilities Area Fort Riley, Kansas	EA Engineering	JUN-2008
2008 Annual Sampling Report Former Fire Training Area - Marshall Army Airfield Fort Riley, Kansas	EA Engineering	JUN-2008
Remedial Design/Remedial Action Plan Dry Cleaning Facilities Area (Operable Unit 003) at Main Post Fort Riley, Kansas	Burns & McDonnell	JUN-2008
Removal Action Final Report - Volumes I & 2 AGL Terminus Area Marshall Army Air Field Fort Riley, Kansas	McKinzie	JUL-2008
Final 2008 Annual Groundwater Sampling Report Dry Cleaning Facilities Area Fort Riley, Kansas	EA Engineering	JUL-2008
Long Term Monitoring Report Southwest Funston Landfill Fort Riley, Kansas 2008	CTI	JUL-2008

## IRP Previous Studies

**2008**

Title	Author	Date
Quality Control Summary Report July 2008 Sampling Event Custer Hill Landfill Fort Riley, Kansas	Environmental Chemical Corporation	AUG-2008
Quality Control Summary Report July 2008 Groundwater Sampling Event at the Open Burning/Open Detonation (Range 16) at Fort Riley, Kansas	Burns & McDonnell /Malcolm Pirnie	SEP-2008
Quality Control Summary Report Expanded Site Investigation (Multiple Sites) at Fort Riley, Kansas	Burns & McDonnell /Malcolm Pirnie	SEP-2008
2008 Maintenance and Repair Report and Annual Inspection Report Southwest Funston Landfill Operable Unit 001 Fort Riley, Kansas	Corps of Engineers - Kansas City District	OCT-2008
Draft Final Report Addendum Expanded Site Investigation (Multiple Sites) at Fort Riley, Kansas	Burns & McDonnell /Malcolm Pirnie	DEC-2008
Draft Final Building 1693 Report Expanded Site Investigation (Multiple Sites) at Fort Riley, Kansas	Burns & McDonnell /Malcolm Pirnie	DEC-2008

**2009**

Quality Control Summary Report for March 2009 Sampling Event 354 Area Solvent Detections Site Fort Riley, Kansas	EA Engineering	APR-2009
Quality Control Summary Report for February 2009 Sampling Event Former Fire Training Area - Marshall Army Airfield Fort Riley, Kansas	EA Engineering	APR-2009
Quality Control Plan Final POL/UST Contaminated (Prior to 1984) Sites Remediation Services at Fort Riley, Kansas (1044, 1245, 1637)	Conti/CH2MHill	MAY-2009
Project Management Plan Final POL/UST Contaminated (Prior to 1984) Sites Remediation Services at Fort Riley, Kansas (1044, 1245, 1637)	Conti/CH2MHill	MAY-2009
Quality Control Summary Report for April 2009 Sampling Event at the Dry Cleaning Facilities Area Fort Riley, Kansas	EA Engineering	MAY-2009
Quality Control Summary Report for Groundwater Monitoring Activities Southwest Funston Landfill Fort Riley, Kansas	CTI	JUN-2009
Quality Control Summary Report for Groundwater Monitoring Activities Abandoned Gasoline Site Fort Riley, Kansas	CTI	JUN-2009
2009 Annual Sampling Report Former Fire Training Area - Marshall Army Airfield Fort Riley, Kansas	EA Engineering	JUN-2009
2009 Annual Sampling Report 354 Solvent Detections Site Fort Riley, Kansas	EA Engineering	JUN-2009
2009 Maintenance and Repair Report and Annual Inspection Report Southwest Funston Landfill Fort Riley, Kansas	Corps of Engineers - Kansas City District	JUN-2009
Final 2009 Annual Groundwater Sampling Report Dry Cleaning Facilities Area Fort Riley, Kansas	EA Engineering	JUL-2009
Quality Control Summary Report 2009 Groundwater Resampling Event Southwest Funston Landfill Fort Riley, Kansas	CTI	AUG-2009
Quality Control Summary Report for June 2009 Supplemental Sampling Event Former Fire Training Area - Marshall Army Airfield Fort Riley, Kansas	EA Engineering	AUG-2009
Design Implementation Work Plan for Petroleum, Oil, and Lubricant Sites 1044, 1245, and 1637 Fort Riley, Kansas	Conti/CH2MHill	SEP-2009

## IRP Previous Studies

	Title	Author	Date
2009	Quality Control Summary Report August 2009 Groundwater Sampling Event at the Open Burning/Open Detonation (Range 16) at Fort Riley, Kansas	Burns & McDonnell /Malcolm Pirnie	NOV-2009
	Quality Control Summary Report for September 2009 Supplemental Sampling Event Former Fire Training Area - Marshall Army Airfield Fort Riley, Kansas	EA Engineering	NOV-2009
	Long Term Monitoring Report Southwest Funston Landfill Fort Riley, Kansas 2009	CTI	NOV-2009
	Draft Final Remedial Action Completion Report Southwest Funston Landfill Site, OU001 Fort Riley, Kansas December 2009	DPW Environmental Fort Riley, KS	DEC-2009
2010	Technical Memorandum Pre-Excavation Soil Sampling Event NW Camp Funston WWI Incinerator Fort Riley, Kansas	CTI	MAR-2010
	Quality Control Summary Report Soil and Groundwater Investigation Abandoned Gas Line Site (AGL) Fort Riley, Kansas	CTI	APR-2010
	Technical Memorandum Soil and Groundwater Investigation Abandoned Gas Line (AGL) Site Fort Riley, Kansas	CTI	APR-2010
	Explanation of Significant Difference Pesticide Storage Facility Fort Riley, Kansas	DPW Environmental Fort Riley, KS	APR-2010
	Operations and Maintenance Manual Remediation of Petroleum, Oil, and Lubricant Sites 1044, 1245, and 1637 Fort Riley, Kansas	Conti/CH2MHill	MAY-2010
	2010 Maintenance and Repair Report and Annual Inspection Report Southwest Funston Landfill Fort Riley, Kansas	Corps of Engineers - Kansas City District	JUN-2010
	Draft Final Remedial Action Completion Report Former Fire Training Area (Operable Unit 004) at - Marshall Army Airfield Fort Riley, Kansas	Louis Berger/ Burns & McDonnell	AUG-2010
	Construction Completion Report Petroleum, Oil, and Lubricant Sites 1044, 1245, and 1637 Fort Riley, Kansas Volumes 1 and 2	Conti/CH2MHill	AUG-2010
	Quality Control Summary Report for June 2010 Sampling Event Dry Cleaning Facilities Area Fort Riley, Kansas	EA Engineering	AUG-2010
	Quality Control Summary Report August 2010 Groundwater Sampling Event at the Open Burning/Open Detonation (Range 16) at Fort Riley, Kansas	Burns & McDonnell /Malcolm Pirnie	SEP-2010
	Camp Funston WWI Incinerator (CFI) Remediation Ft. Riley, KS	CTI	OCT-2010
	Final 2010 Annual Groundwater Sampling Report Dry Cleaning Facilities Area Fort Riley, Kansas	EA Engineering	OCT-2010
	Quality Control Summary Report for September 2010 Supplemental Sampling Event Dry Cleaning Facilities Area Fort Riley, Kansas	EA Engineering	NOV-2010
	Quality Control Summary Report May 2010 Sample Event Post Closure Groundwater Monitoring Custer Hill Landfill Fort Riley, Kansas	CTI	DEC-2010
	Quality Control Summary Report October 2010 Confirmation Sample Event Post Closure Groundwater	CTI	DEC-2010

## IRP Previous Studies

2010

Title	Author	Date
Monitoring Custer Hill Landfill Fort Riley, Kansas		

2011

Final Project Management Plan Quality Assurance Surveillance Plan Environmental Remediation Services Abandoned Gasoline Line	Cape	FEB-2011
Draft Final Long-Term Management and Care Plan Southwest Funston Landfill Site, OU001 Fort Riley, Kansas	DPW Environmental Fort Riley, KS	MAR-2011
2011 Maintenance and Repair Report and Annual Inspection Report for Southwest Funston Landfill Fort Riley, Kansas	Corps of Engineers - Kansas City District	JUN-2011
Final Work Plan Environmental Remediation Services Abandoned Gasoline Line Terminus Area Fort Riley, Kansas	Cape	JUL-2011
Final Technical Memorandum Part I: Technical Memorandum: EE/CA Addendum Part II: Action Memorandum Addendum Environmental Remediation Services Abandoned Gasoline Line Terminus Area Fort Riley, Kansas	Cape	JUL-2011
Final Exit Strategy Plan Environmental Remediation Services Abandoned Gasoline Line Terminus Area Fort Riley, Kansas	Cape	JUL-2011
Final Site-Specific Site Safety and Health Plan for RI/FS Environmental Investigations for the Open Burning-Open Detonation Grounds (Range 16) at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	SEP-2011
Final Site-Specific Investigation Derived Waste Management Plan for RI/FS Environmental Investigations for the Open Burning-Open Detonation Grounds (Range 16) at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	SEP-2011
Quality Control Summary Report August 2011 Sample Event Post Closure Groundwater Monitoring Custer Hill Landfill Fort Riley, Kansas	CTI	OCT-2011
Quality Control Summary Report 354 Area Solvent Detections August 2011 Groundwater Sample Event Fort Riley, Kansas	CTI	OCT-2011
Final Groundwater Sampling Report - August 2011 354 Area Solvent Detections Fort Riley, Kansas	CTI	NOV-2011
Final Remedial Investigation/Feasibility Study Work Plan for the Open Burning/Open Detonation Ground (Range 16) Operable Unit 006 at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	NOV-2011
Final Munitions and Explosives of Concern Avoidance Plan Remedial Investigation/Feasibility Study and Related Activities Open Burning-Open Detonation Grounds (OB/OD) (Range 16) - Operable Unit 006 Fort Riley, Kansas	Louis Berger and ARCADIS/Malcolm Pirnie	NOV-2011
Quality Control Summary Report Long-Term Groundwater Monitoring October 2011 Groundwater Sampling Event Southwest Funston Landfill Fort Riley, Kansas	CTI	DEC-2011
Quality Control Summary Report August and October 2011 Groundwater Sampling Events Dry Cleaning Facilities Area - OU003 Fort Riley, Kansas	CTI	DEC-2011

## IRP Previous Studies

2011

Title	Author	Date
Final Installation-Wide Sampling and Analysis Plan (Including UFP-Quality Assurance Project Plan) for the Fort Riley CERCLA Process Support at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	DEC-2011
Draft Final 2010 Remedial Action (Operations) Report Petroleum, Oil, and Lubricant Sites 1044, 1245, and 1637 Fort Riley, Kansas	Conti/CH2MHill	DEC-2011
Quality Control Summary Report Long-Term Groundwater Monitoring October 2011 Groundwater Sampling Event Southwest Funston Landfill Fort Riley, Kansas	CTI	DEC-2011
Draft Final Site-Specific Investigative-Derived Waste Management Plan for RI/FS Environmental Investigations for the WWI Incinerator, NW Camp Funston (CFI) - Operable Unit 007 at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	DEC-2011

2012

Final Addendum No. 1 to Installation-Wide Accident Prevention Plan (APP) for Open Burning-Open Detonation Grounds (Range 16) Environmental Investigations at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	JAN-2012
Quality Control Summary Report Open Burning-Open Detonation Grounds (Range 16) Operable Unit 006 at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	JAN-2012
Final Installation-Wide Accident Prevention Plan For Environmental Investigations at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	JAN-2012
Draft Final Addendum No. 2 to Installation-Wide Accident Prevention Plan for the WWI Incinerator, NW Camp Funston (CFI) - Operable Unit 007 at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	JAN-2012
2011 Annual Groundwater Sampling Report Dry Cleaning Facilities Area OU-003 Fort Riley, Kansas	CTI	FEB-2012
Long Term Monitoring Report Southwest Funston Landfill Fort Riley, Kansas 2011	CTI	FEB-2012
Quality Control Summary Report Remedial Investigation/Feasibility Study Phase One Sediment and Soil Sampling at the Open Burning/Open Detonation Grounds (Range 16) Operable Unit 006 at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	FEB-2012
Quality Control Summary Report Remedial Investigation/Feasibility Study Phase Two Multi-Incremental Soil Sampling at the Open Burning/Open Detonation Grounds (Range 16) Operable Unit 006 at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	MAR-2012
Quality Control Summary Report Remedial Investigation/Feasibility Study Phase Four Quarterly Groundwater Sampling Event at the Open Burning/Open Detonation Grounds (Range 16) Operable Unit 006 at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	MAY-2012
Quality Control Summary Report May 2012 Sample Event Post Closure Groundwater Monitoring Custer Hill Landfill Fort Riley, Kansas	CTI	JUN-2012
Quality Control Summary Report April 2012 Groundwater Sample Events Dry Cleaning Facilities Area - OU003 Fort Riley, Kansas	CTI	JUN-2012

## IRP Previous Studies

2012

Title	Author	Date
Quality Control Summary Report Post Closure Groundwater Monitoring - April 2012 Building 354 Fort Riley, Kansas	CTI	JUN-2012
2012 Maintenance and Repair Report and Annual Inspection Report Southwest Funston Landfill Fort Riley, Kansas	Corps of Engineers - Kansas City District	JUL-2012
Quality Control Summary Report Remedial Investigation/Feasibility Study Phase One Sediment and Soil Sampling at the Open Burning/Open Detonation Grounds (Range 16) Operable Unit 006 at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	JUL-2012
Final Long-Term Monitoring Report No. 1 Baseline and First Quarterly Sampling Events (October 2011 - January 2012) Environmental Remediation Services Abandoned Gasoline Line Terminus Area Fort Riley, Kansas	Cape	AUG-2012
Final Construction Completion Report for Environmental Remediation Services Abandoned Gas Line Terminus Area Fort Riley, Kansas	Cape	AUG-2012
Quality Assurance Project Plan Soil Removal FTRI 057 - 6200 Area, Custer Hill Fort Riley, Kansas	Prudent Technologies	AUG-2012
Quality Control Summary Report Remedial Investigation/Feasibility Study Phase Three Quarterly Groundwater Sampling Second Quarter Groundwater Sampling Event at the Open Burning/Open Detonation Grounds (Range 16) Operable Unit 006 at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	AUG-2012
Final Work Plan Addendum - Second Groundwater Treatment Event Fort Riley Abandoned Fas Line Terminus Area, Fort Riley, Kansas	Cape	SEP-2012
Long Term Monitoring Field Sampling Modification Fort Riley Abandoned Fas Line Terminus Area, Fort Riley, Kansas	Cape	SEP-2012
Corrective Action Plan - Work Plan Soil Removal FTRI 057 - 6200 Area, Custer Hill Fort Riley, Kansas	Prudent Technologies	SEP-2012
2012 Annual Sampling Report 354 Solvent Detections Site Fort Riley, Kansas	CTI	NOV-2012
Final Long-Term Monitoring Report No. 2 Second Quarterly Sampling Events (March 2012) Environmental Remediation Services Abandoned Gasoline Line Terminus Area Fort Riley, Kansas	Cape	NOV-2012
Quality Control Summary Report Remedial Investigation/Feasibility Study Phase Three Quarterly Groundwater Sampling Third Quarter Groundwater Sampling Event at the Open Burning/Open Detonation Grounds (Range 16) Operable Unit 006 at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	NOV-2012
Draft Final 2011 Remedial Action (Operations) Report Petroleum, Oil, and Lubricant Sites 1044, 1245, and 1637 at Camp Funston Fort Riley, Kansas	Conti/CH2MHill	DEC-2012
2012 Annual Groundwater Sampling Report Dry Cleaning Facilities Area OU-003 Fort Riley, Kansas	CTI	DEC-2012
Quality Control Summary Report (QCSR) Soil Removal FTRI 057 - 6200 Area, Custer Hill Fort Riley, Kansas	Prudent Technologies	DEC-2012

2013

## IRP Previous Studies

2013

Title	Author	Date
Final Technical Memorandum Work Plan Addendum for the Push Soil Investigation at the Metal Debris Pits Open Burning-Open Detonation Grounds (Range 16) Operable Unit 006 at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	JAN-2013
Final Long-Term Monitoring Report No. 3 Third Quarterly Sampling Events (June 2012) Environmental Remediation Services Abandoned Gasoline Line Terminus Area Fort Riley, Kansas	Cape	FEB-2013
Quality Control Summary Report Remedial Investigation/Feasibility Study Phase Three Quarterly Groundwater Sampling Fourth Quarter Groundwater Sampling Event at the Open Burning/Open Detonation Grounds (Range 16) Operable Unit 006 at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	FEB-2013
Quality Control Summary Report Metal Debris Pit Soil Confirmation Investigation Open Burning/Open Detonation Grounds (Range 16) Operable Unit 006 at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	MAR-2013
Operations and Maintenance Manual - Revision 1 Remediation of Petroleum, Oil, and Lubricant Sites 1044, 1245, and 1637 Fort Riley, Kansas	Conti/CH2MHill	MAR-2013
Final Quality Control Plan for RI/FS Environmental Investigations for the WWI Incinerator, NW Camp Funston (CFI) - Operable Unit 007 at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	MAR-2013
Proposed Two-Phase Approach for Field Sampling Activities, RI/FS Investigation at the World War I Incinerator, Northwest Camp Funston - Operable Unit 007, Fort Riley, Kansas	Louis Berger/Burns & McDonnell	MAR-2013
Work Plan Phase II (Characterization) and Phase III (Excavation/Backfill) FTRI 057 - 6200 Area, Custer Hill Fort Riley, Kansas	Prudent	MAY-2013
Accident Prevention Plan/Site Specific Health Plan FTRI 057 - 6200 Area Phase II (Characterization) and Phase III (Excavation/Backfill) Fort Riley, Kansas	Prudent	MAY-2013
Contract Quality Control Plan FTRI 057 - 6200 Area Phase II (Characterization) and Phase III (Excavation/Backfill) Fort Riley, Kansas	Prudent	MAY-2013
Uniform Federal Policy Quality Assurance Project Plan FTRI 057 - 6200 Area Phase II (Characterization) and Phase III (Excavation/Backfill) Fort Riley, Kansas	Prudent	MAY-2013
Final 2012 Annual Remedial Action - Operations / Long Term Monitoring Report Baseline Sampling Event and Quarterly Sampling Events 1 through 4 Environmental Remediation Services Abandoned Gasoline Line Terminus Area Fort Riley, Kansas	CAPE	JUN-2013
Final Long-Term Monitoring Report No. 5 Fourth Quarter 2012 LTM Sampling Event 5 Environmental Remediation Services Abandoned Gasoline Line Terminus Area Fort Riley, Kansas	Cape	JUN-2013
Quality Control Summary Report May 2013 Sample Event Post Closure Groundwater Monitoring Custer Hill Landfill Fort Riley, Kansas	CTI	JUL-2013
Final 2013 Annual Inspection Report Southwest Funston Landfill Fort Riley, Kansas	DPW Environmental Fort Riley, KS	JUL-2013

## IRP Previous Studies

2013

Title	Author	Date
Quality Control Summary Report May 2013 Groundwater Sample Events Dry Cleaning Facilities Area - OU003 Fort Riley, Kansas	CTI	JUL-2013
Draft Final 2012 Remedial Action (Operations) Report Petroleum, Oil, and Lubricant Sites 1044, 1245, and 1637 at Camp Funston Fort Riley, Kansas	Conti/CH2MHill	JUL-2013
2013 Semiannual Groundwater Monitoring Technical Memorandum POL Sites 1044, 1245, and 1637 Fort Riley, Kansas	Conti/CH2MHill	JUL-2013
Closure/Corrective Action Final Report Soil Removal FTRI 057 - 6200 Area, Custer Hill Fort Riley, Kansas	Prudent	AUG-2013
Final Remedial Investigation Report for the Open Burning/Open Detonation Ground (Range 16) Operable Unit 006 at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	SEP-2013
Final 2013 Annual Groundwater Sampling Report Dry Cleaning Facilities Area OU-003 Fort Riley, Kansas	CTI	SEP-2013
Final Long-Term Monitoring Report No. 6 First Quarter 2013 LTM Sampling Event 6 Environmental Remediation Services Abandoned Gasoline Line Terminus Area Fort Riley, Kansas	Cape	SEP-2013
Final Remedial Investigation/Feasibility Study Work Plan for the WWI Incinerator, NW Camp Funston (CFI) - Operable Unit 007 at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	NOV-2013
Final Site-Specific Investigative-Derived Waste Management Plan for RI/FS Environmental Investigations for the WWI Incinerator, NW Camp Funston (CFI) - Operable Unit 007 at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	NOV-2013

2014

Final Long-Term Monitoring Report No. 7 Third Quarter 2013 LTM Sampling Event 7 Environmental Remediation Services Abandoned Gasoline Line Terminus Area Fort Riley, Kansas	Cape	JAN-2014
Final Feasibility Study Report for the Open Burning/Open Detonation Ground (Range 16) Operable Unit 006 at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	FEB-2014



**FORT RILEY**  
**Installation Restoration Program**  
**Site Descriptions**

Site ID: FTRI-001

## Site Name: CUSTER HILL SANITARY LANDFILL

### STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Metals

Media of Concern: Groundwater

Phases	Start	End
RFA.....	198706.....	198909
CS.....	198706.....	198909
RFI/CMS.....	198909.....	199307
DES.....	199308.....	199311
CMI(C).....	199312.....	199502
CMI(O).....	199503.....	202503

RIP Date: 199503

RC Date: 202503

### SITE DESCRIPTION

Site FTRI-001 is a closed landfill approximately 65-acres in size. The landfill was operated from 1981 to 1994 as a solid waste landfill. The landfill was closed under a regulator approved closure plan from 1994 to 1995. The State of Kansas issued a Consent Order in 1995 to impose post-closure requirements in lieu of post-closure planning. The post-closure requirements include annual inspections, reporting, cover maintenance and repair, groundwater monitoring for 30 years ending in 2025 and/or remediation of post closure groundwater contamination, if found to be a threat to human health and the environment. Arsenic is the contaminant of concern in groundwater in two wells.

### CLEANUP/EXIT STRATEGY

Site-wide five-year groundwater sampling, for VOCs, RCRA 8 metals, and geochemical parameters in all wells and Ra-228 in three wells, is planned for 2015, 2020, and 2025; otherwise limited annual groundwater sampling is conducted for contaminants that exceed their MCLs.

Additional landfill cover repair may be required based on the results of annual inspections.

Well abandonment will occur in 2025 when concurrence from the regulators to end post-closure requirements is received.

Site Name: SOUTHWEST FUNSTON LANDFILL

STATUS

Regulatory Driver: CERCLA
RRSE: MEDIUM
Contaminants of Concern: Volatiles (VOC)
Media of Concern: Groundwater

Table with 3 columns: Phases, Start, End. Rows include PA, SI, RI/FS, RD, IRA, RA(C), RA(O), LTM, RIP Date, and RC Date.

SITE DESCRIPTION

Site FTRI-003 is a closed landfill approximately 120 acres in size. The landfill was operated from the mid-1950s until 1981 as a solid waste landfill. The landfill was closed under a regulator approved closure plan during 1982 to 1983. Sporadic VOCs, metals, and petroleum hydrocarbons of potential concern were detected during the initial 1990s groundwater sampling. A Removal Action for cover repair improvements and construction of a revetment along the Kansas River was performed in 1994-1995. The 1995 Record of Decision (ROD), signed in 1997, established the post closure remedial action requirements for the SFL.

In February 2010, regulators determined based on the Remedial Action Completion Report that remedial action at the SFL was complete. The RAOs and RGs specified in the ROD were achieved. The SFL was approved for the site completion status under CERCLA, and the site became eligible for deletion from the NPL. The site was transitioned to the LTM phase with re-evaluation during five-year reviews required by EPA.

The 2011 Long-Term Management and Care Plan, approved by the regulators, established the de minimis (periodic, as needed) requirements for long-term management and care of the landfill. These requirements include institutional controls, groundwater sampling until terminated, annual inspections, landfill cover/revetment maintenance and repair, and reporting. Vinyl chloride, the primary residual contaminant of concern, has been below its maximum contaminant level (MCL) since 2006. Naphthalene, detected in one shallow well in the center of the landfill, has been consistently above the state's residential risk-based standard (RSK) of 1.11 ppb. Naphthalene does not have an MCL. Based on results from the down-gradient wells, this contaminant is attenuated and/or biodegraded before reaching the Kansas River and is therefore not of concern. Current trends indicate naphthalene will be below Kansas RSK values by 2016.

Groundwater sampling and landfill cover/revetment repairs are scheduled for September/October 2014.

The five-year review reports in 2002, 2007, and 2012 did not reveal any threats to human health and the environment.

CLEANUP/EXIT STRATEGY

A groundwater sampling event is scheduled for FY16 for the five-year review in FY17. If the five-year review's conclusions support unlimited use and unrestricted exposure (UU/UE), Fort Riley will request site closure and cease re-evaluation of the SFL during future five-year reviews.

With site closure groundwater sampling may be terminated and the groundwater monitoring wells abandoned in FY18.

**Site ID: FTRI-003**  
**Site Name: SOUTHWEST FUNSTON LANDFILL**

Fort Riley's Real Property Master Plan will be used as the document to implement institutional controls and any "de minimis" cover/revetment maintenance and repair.

This site will be included in the 2017 Five-Year Review.

**STATUS**

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals, Perchlorate, Volatiles (VOC)

Media of Concern: Groundwater, Soil, Surface Water

Phases	Start	End
PA.....	198312.....	198412
SI.....	199111.....	199809
RI/FS.....	199303.....	201504
RD.....	201505.....	201601
RA(C).....	201502.....	201609
RA(O).....	201610.....	202009
<b>RIP Date:</b>	201610	
<b>RC Date:</b>	202009	

**SITE DESCRIPTION**

The OB/OD Ground (Range 16) is used for emergency ordnance disposal and training (no public access is permitted). There is a suspicion that TCE was utilized as a limited attempt to serve as an accelerant based on its presence in the groundwater at the site, but was not done as a normal practice. The normal practice was to use kerosene or diesel as the accelerant to burn the gun powder. In 1993, TCE was detected in the groundwater. Due to the continued presence of TCE in the groundwater and the complex site hydrogeology, the site has been converted to an operable unit. It is in the RI/FS phase.

RI fieldwork began in January 2012 based on the approved December 2011 work plan. In 2012/2013, soil sampling and four quarterly groundwater sampling events were conducted. TCE and TCA are present in the soil and ground water at high levels. The RI Report was completed 23 September 2013. The FS Report and PP were completed in 2014. Anticipated remedial actions are ex-situ soil treatment/land farming with ground-water and surface-water monitoring. ROD completion is slated for April 2015.

The site was addressed in the 2002, 2007, and 2012 five-year review reports.

**CLEANUP/EXIT STRATEGY**

In 2015, complete the Remedial Design and implement the remedy prescribed by the ROD.

In 2016, begin ground-water and surface water monitoring.

When the site is closed the groundwater monitoring wells abandoned.

This site will be included in the 2017 Five-Year Review.

Site Name: DRY CLEANING FACILITIES AREA

STATUS

Regulatory Driver: CERCLA
RRSE: MEDIUM
Contaminants of Concern: Volatiles (VOC)
Media of Concern: Groundwater, Soil

Table with 3 columns: Phases, Start, End. Rows include PA, SI, RI/FS, RD, IRA, RA(C), RA(O) with corresponding dates. Includes RIP Date: 200807 and RC Date: 204409.

SITE DESCRIPTION

The former DCFA, which lies 800 feet north of the Kansas River, ceased operations in 2002. Tetrachloroethylene (PCE) was used as the dry cleaning solvent. Leaking sewer lines resulted in soil and groundwater contamination. In 2006, a Pilot Study excavated the contaminated soil, treated the eastern groundwater plume using enhanced bioremediation (emulsified soybean oil), and the western groundwater plume using chemical oxidation (potassium permanganate). The 2008 Record of Decision selected monitored natural attenuation and institutional controls as the remedy. In 2010, the eastern groundwater plume was re-treated with emulsified soybean oil. Currently the eastern plume has one well, DCF02-41, at 83.9 ppb dichloroethylene, which is above regulatory levels (70 ppb). While PCE levels initially dropped to near regulatory levels (5 ppb) in the western plume, groundwater contamination levels in several wells show upward trends. For example, in May 2013 monitoring well DCF06-25 tested 39.5 ppb PCE.

The five-year review reports in 2002, 2007, and 2012 did not reveal any threats to human health and the environment.

CLEANUP/EXIT STRATEGY

Annual groundwater sampling will be conducted to determine if the elevated PCE contamination levels in the western plume are a temporary mobilization due to changes in the river stage or if the increased contamination is a rebound that will require remedial action.

A Remedial Action Completion Report will be completed when groundwater contaminant levels in the alluvial wells drop below the MCLs for three straight groundwater monitoring events.

Well abandonment will occur when groundwater sampling is completed.

This site will be included in the 2017 Five-Year Review.

Site Name: 354 AREA SOLVENT DETECTIONS (354)

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Petroleum, Oil and Lubricants (POL), Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA.....	199111.....	199305
SI.....	199312.....	199507
RI/FS.....	199609.....	200608
RD.....	200608.....	200703
RA(C).....	200703.....	200703
RA(O).....	200704.....	201603
LTM.....	201604.....	201609

RIP Date: 200704

RC Date: 201603

SITE DESCRIPTION

Fuel and solvent storage/dispensing occurred near former Building 354 in the public works yard. The USTs were used to store fuel and removed in 1990 and 1991. There are no records to determine if solvents were stored in drums, USTs, or aboveground storage tanks (ASTs). The PCE, its degradation products, carbon tetrachloride, and fuel-related hydrocarbons are present. The site extends from just north of Building 430 (the Main Post fire station) to the "point bar" on the north bank of the Kansas River. At building 430, the only contaminant is carbon tetrachloride below the MCL.

The ROD was signed in 2006 and the site remedy was MNA with institutional controls. The RD was completed in March 2007.

The results of the 2009 groundwater sampling event showed no COC above the MCLs in the alluvial aquifer of the Kansas River for the three years post-ROD as specified in the ROD. The course of action was to make a recommendation to discontinue sampling and close out the site.

Currently, PCE is the only contaminant above the MCL in groundwater samples in three terrace wells. It does not pose a risk and do not present an impact to the Kansas River alluvial aquifer. One well in the transition zone had benzene at 3.3 micrograms/Liter (ug/L) in 2012. Limited groundwater sampling in four wells was conducted in 2011 and 2012 with decreasing concentrations of PCE with each sampling event. The toxicity of PCE was altered to a lesser degree in 2013. The implication is that the MCL will be raised above it current value of 5 ug/L. The anticipated level is expected to be 20 ug/L. The current values for the 3 monitoring wells with PCE are 8.9 ug/L, 8.1 ug/L, and 13.0 ug/L.

This site was addressed in the site-wide five-year review reports completed in 2002, 2007, and 2012. Vapor intrusion at Building 367, an was identified as a potential issue in the 2012 five-year review, was resolved in Technical Memorandum in September 2013.

CLEANUP/EXIT STRATEGY

Fort Riley will work with regulators on the development of an ESD to close the site. The second semi-annual groundwater sampling event will be conducted in late 2014.

The next groundwater sampling (if needed) is planned in 2016 for the 2017 five-year review.

Well abandonment will occur when all groundwater monitoring is completed.

Site Name: ABANDONED GASOLINE LINE

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Petroleum, Oil and Lubricants (POL)

Media of Concern: Groundwater, Soil

Phases	Start	End
ISC.....	199111.....	199409
INV.....	199408.....	199603
CAP.....	199803.....	201107
DES.....	201103.....	201108
IRA.....	200609.....	200909
IMP(C).....	201103.....	201110
IMP(O).....	201110.....	201602

RIP Date: 201110

RC Date: 201602

SITE DESCRIPTION

The USTs and a 1.1 mile steel pipeline that make up the AGL were installed in 1937 to transfer aviation gasoline from the railroad siding at the Main Post to the MAAF. The AGL terminus area associated with the pipeline is located between Buildings 754 and 748B at the airfield. In 1951, the pipeline was removed from service after a portion of the line was destroyed during the flooding of the Kansas River. In 1987, the USTs, where diesel and aviation gasoline were stored, were removed. An investigation of the abandoned pipeline in 1998 showed that it had been cut in several places at the terminus area during installation of utilities.

A preliminary assessment (PA) investigation was performed at the former terminus area in 1993 that showed possible benzene contamination. An SI field investigation in 2001 revealed soil and groundwater contamination related to the former USTs exceeding risk-based standards. The hazardous substance, 1,2-DCA, and petroleum-related constituents were detected. Sampling along the pipeline did not reveal any contamination. Further assessment of the site occurred in August 2004. The soil and groundwater results revealed concentrations of benzene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene well above risk-based standards.

An EE/CA and action memorandum to document the selection of the removal alternative was approved in February 2006. The remedial response was initiated in August 2006 and involved the injection of a chemical oxidant and an oxygen source in the contaminated zones. The fieldwork was performed in October to November 2006 and July to August 2007. Post-treatment groundwater monitoring to analyze the effectiveness was performed in 2007, 2008, and 2009. An investigation to evaluate the extent of the remaining mass of contaminants in the soil and groundwater was completed in February 2010. A performance-based contract for environmental remediation services was awarded in September 2010.

Addenda to the original EE/CA and action memorandum to document the additional response action were made and a public notice published in the spring of 2011. The decision document (DD) was approved by June 2011. This response action is expected to be the final action for the AGL site. The response activities include excavation and land farming of the contaminated soil, two injections of an oxygen source to treat the contaminated groundwater, followed by performance sampling, then MNA until the cleanup goals are met for site closeout. The IMP(C) activities began in mid-August and continued through October 2011. The remedy-in-place (RIP) was achieved on Oct. 28, 2011 to be followed by implementation operation [IMP(O)]. The IMP(O) will continue at least to the end of 2015. The IMP(O) includes groundwater monitoring and potential treatment of the groundwater at the AGL site.

The land-farm was restored in June 2013.

CLEANUP/EXIT STRATEGY

IMP(O) is expected to end in September 2015 with site-closeout approval by KDHE.



**Site ID: FTRI-056**  
**Site Name: ABANDONED GASOLINE LINE**

The ground-water monitoring wells will be plugged and abandoned when the site is closed.

**Site ID: FTIRI-057**

**Site Name: 6200 AREA FUEL OIL LINE**

**STATUS**

**Regulatory Driver:** RCRA  
**RRSE:** LOW

<b>Phases</b>	<b>Start</b>	<b>End</b>
ISC.....	199010.....	199012
INV.....	199312.....	199502
CAP.....	199606.....	199607
IMP(C).....	199601.....	201310
IMP(O).....	201003.....	201410

**RIP Date:** 201310

**RC Date:** 201410

**SITE DESCRIPTION**

FTIRI-057 is the former building 6200 Fuel Oil Line site located in the Custer Hill family housing area. The South Warner Heights development was occupied in 1976. Fuel oil, stored in a 10,000-gallon UST, was distributed from a central UST through pressurized lines to the housing units. In 1982 a second 20,000-gallon UST was installed. By 1986 the fuel oil lines were discovered to be leaking. The USTs were removed, but the lines left in place. In 1996, in response to a resident complaint of strong petroleum odors, the heating oil pipes were removed; and the trenches excavated and backfilled with clean soil.

In early 2011 the RCI housing partner, after demolishing the 1976 housing and in preparation for redevelopment, discovered suspected fuel oil contamination at three locations: the playground area, test pit 8 (TP-8), and test pit 5 (TP-5). The main health concern was vapor intrusion into the housing units from fuel oil contaminated surface soil and groundwater.

During the initial September 2012 soil investigation/removal, the playground area was found to be clean. The playground area was eliminated as a soil or groundwater source of vapors that might negatively impact health of future residents. At TP-8, 1065 cubic yards of contaminated soil, down to bedrock at 12 feet and under a proposed housing unit, was excavated. Due to the depth of excavation, soil was eliminated as a vapor intrusion source at TP-8. At TP-5, 1786 cubic yards of contaminated soil was excavated in 2012 with an additional 2529 cubic yards of contaminated soil excavated in 2013. Due to the depth of excavation, soil was eliminated as a vapor intrusion source at the proposed housing unit co-located at TP-5.

Groundwater was also investigated as part of the 2013 mobilization. Groundwater in monitoring well 4 (MW-4), adjacent to TP-5, tested below state of Kansas residential risk-based standards (RSK). MW-2, adjacent to TP-8, tested 990 ppb Diesel Range Organics (DRO), 11 ppb naphthalene, and 28 ppb 2-methylnaphthalene. These values are above Kansas RSK values of 500 ppb DRO, 1.11 ppb naphthalene, and 16.7 ppb 2-methylnaphthalene. These two wells were completed in the deeper Fort Riley limestone.

Using data from the Phase I, II, and III investigations, the RCI housing partner funded a soil gas investigation and used a vapor intrusion model to evaluate risk to future housing residents. The proposed housing location EB-22, north of TP-8, was the only location that presented an unacceptable health risk. The RCI housing contractor has committed to not building on the EB-22 housing location. Other than EB-22, it is unlikely that indoor air concentrations will be a health concern. The report concludes that a vapor intrusion mitigation system included in the housing construction would eliminate the health risks along with any nuisance odors.

In a January 22, 2014 letter, KDHE requested that additional wells be drilled to evaluate the shallow perched groundwater and the deeper Fort Riley limestone. KDHE stated that the resulting groundwater data was needed to evaluate risks to human health and the environment under the Kansas Risk-Based Corrective Action (KRBCA) process.

Fort Riley drilled 7 additional shallow wells and 2 additional deep wells starting in April 2014.

Based on the groundwater sampling results from new and existing wells, KDHE was able to approve a risk-based closure on July 29, 2014.

**Site ID: FTRI-057**

**Site Name: 6200 AREA FUEL OIL LINE**

## **CLEANUP/EXIT STRATEGY**

Abandon monitoring wells in early FY15 with FY14 funds.

Site ID: FTRI-063

Site Name: FMR BLDG 1044 DISPENSING STATION

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Petroleum, Oil and Lubricants (POL)

Media of Concern: Groundwater, Soil

Phases	Start	End
ISC.....	199001.....	199012
INV.....	199001.....	199510
CAP.....	199603.....	199706
DES.....	200901.....	201003
IRA.....	199001.....	199707
IMP(C).....	200901.....	201003
IMP(O).....	201003.....	201709

RIP Date: 201003

RC Date: 201709

SITE DESCRIPTION

In the 1994-1995 time frame Fort Riley conducted a limited bio-venting/vapor extraction study at the site. The site was granted LTM status by the Kansas Department of Health & Environment North Central District Office. The site was improperly placed in Response Complete without regulatory acceptance. The site is located in Camp Funston. Analysis of data from a pilot study revealed high levels of soil and ground-water contamination at FTRI-063 (former building 1044). This site requires extensive remediation in order to avoid potential mission impacts or human health issues. A performance-based contract (PBC) was issued on 20 January 2009 to cover the work. A work plan to remediate the extensive contamination from fuels-related petroleum hydrocarbons in the soils and ground water was instituted. The efforts include a dual-phase extraction and free-product recovery. The operation of the system at the site was implemented as of March 2010.

Another performance -based contract was issued in August 2013. It is to address the on-going contamination issues at this site. It covers the operation & maintenance of the system, any sampling, and reporting through FY17.

CLEANUP/EXIT STRATEGY

In 2017, Fort Riley will request site closure and the ground-water monitoring wells will be abandoned.

Site ID: FTRI-066

Site Name: FMR BLDG 1245 DISPENSING STATION

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Petroleum, Oil and Lubricants (POL)

Media of Concern: Groundwater, Soil

Phases	Start	End
ISC.....	199001.....	199012
INV.....	199001.....	199503
CAP.....	199603.....	199707
DES.....	200901.....	201003
IRA.....	199001.....	199012
IMP(C).....	200901.....	201003
IMP(O).....	201003.....	201709

RIP Date: 201003

RC Date: 201709

SITE DESCRIPTION

In the 1994-1995 time frame Fort Riley conducted a limited bio-venting/vapor extraction study at the site. The site was granted LTM status by the Kansas Department of Health & Environment North Central District Office. The site was improperly placed in Response Complete without regulatory acceptance. The site is located in Camp Funston. Analysis of data from a pilot study revealed high levels of soil and ground-water contamination at FTRI-066 (former building 1245). This site requires extensive remediation in order to avoid potential mission impacts or human health issues. A performance-based contract (PBC) was issued on 20 January 2009 to cover the work. A work plan to remediate the extensive contamination from fuels-related petroleum hydrocarbons in the soils and ground water was instituted. The efforts include dual-phase extraction and free-product recovery. The operation of the system at the site was implemented as of March 2010.

Another performance-based contract was issued August 2013. It is to address the on-going contamination issues at the site. It covers the operation & maintenance of the system, any sampling, and reporting through FY17.

CLEANUP/EXIT STRATEGY

In 2017, Fort Riley will request site closure and the ground-water monitoring wells will be abandoned.

Site ID: FTRI-068

Site Name: FMR BLDG 1637 DISPENSING STATION

**STATUS**

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Petroleum, Oil and Lubricants (POL)

Media of Concern: Groundwater, Soil

Phases	Start	End
ISC.....	199001.....	199012
INV.....	199001.....	199503
CAP.....	199603.....	199707
DES.....	200901.....	201003
IRA.....	199001.....	199012
IMP(C).....	200901.....	201003
IMP(O).....	201003.....	201709

RIP Date: 201003

RC Date: 201709

**SITE DESCRIPTION**

In the 1994-1995 time frame Fort Riley conducted a limited bio-venting/vapor extraction study at the site. The site was granted LTM status by the Kansas Department of Health & Environment North Central District Office. The site was improperly placed in Response Complete without regulatory acceptance. The site is located in Camp Funston. Analysis of data from a pilot study revealed high levels of soil and ground-water contamination at FTRI-068 (former building 1637). This site requires less extensive remediation in order to avoid potential mission impacts or human health issues. A performance-based contract (PBC) was issued on 20 January 2009 to cover the work. A work plan to remediate the extensive contamination from fuels-related petroleum hydrocarbons in the soils and ground water was instituted. The efforts include a dual-phase extraction. The operation of the system at the site is now being implemented as of March 2010.

Another performance-based contract was issued in August 2013. It is to address the on-going contamination issues at the site. It covers the operations & maintenance of the system, any sampling, and reporting through FY17.

**CLEANUP/EXIT STRATEGY**

In 2017, Fort Riley will request site closure and the ground-water monitoring wells will be abandoned.

Site Name: WWI INCINERATOR, NW CAMP FUNSTON

STATUS

Regulatory Driver: CERCLA
RRSE: LOW
Contaminants of Concern: Metals
Media of Concern: Soil

Table with 3 columns: Phases, Start, End. Rows include PA, SI, RI/FS, IRA with corresponding dates. Includes RIP Date: N/A and RC Date: 201610.

SITE DESCRIPTION

FTRI-074 was discovered as part of a 2000 effort evaluating potential wastewater plant locations. Foundation and slab remnants were found at the site. No information about the operational practices at the site are available.

In 2001, x-ray fluorescence (XRF) and lab confirmation sampling identified elevated levels of lead and arsenic soil contamination above regulatory levels. Due to its isolated location adjacent to the rail tracks, further action was not taken.

In 2006, as part of the expanded site investigation effort to obtain site closures, a more extensive soil sampling effort was conducted. Thirty-six locations consisting of three soil horizons in the top two feet of soil were sampled. This effort showed a higher level of contamination and a more extensive area of contamination than the 2001 sampling event.

In 2010, Fort Riley decided to construct a rail spur that would cover a portion of the incinerator site, which required an emergency removal. Concurrently, the KDHE promulgated a new definition of uncontaminated soil that required disposal of the arsenic/lead contaminated soil as special waste.

Based on the unknown thickness and horizontal extent of the ash disposal area, the project to remove the soil and ash was suspended. The Army elected to open an RI phase at the site. The final Technical Memorandum was submitted in April 2013.

CLEANUP/EXIT STRATEGY

Future actions will be based on the RI results.

## Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FTRI-002	WHITSIDE C/D LANDFILL-CLOSED	199803	Landfill closed and inspected by the KDHE in 2002. This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-004	MAIN POST LANDFILL	199712	This site was investigated under the FTRI-031 354 Area Solvent Detection site and is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-005	CUSTER HILL ROAD RUBBLE DUMP	199305	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-006	DRMO STORAGE AREA	199809	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-007	PCB STORAGE BUILDING 343	198909	This site is part of the overall effort to address improperly closed out sites. It required additional sampling to be conducted in FY08. Received regulatory closure from EPA, Region VII and the KDHE in January 2009.
FTRI-008	PCB STORAGE CONEX (BUILDING 348)	199012	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-010	PESTICIDE (2-4D) UST AT CAMP FUNSTON	199204	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-011	CAMP FUNSTON GW DETECTIONS	200501	Received regulatory closure from the KDHE on 11/9/07 & the EPA, Region VII on 11/26/07.
FTRI-012	WASTE STORAGE DRMO SECONDARY AREA	199509	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-013	ABANDONED VOC TANKS NORTH OF IACH	199202	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-014	HOSPITAL INCINERATOR-IRWIN ACH	198909	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-015	FORMER DRMO LOCATION (DRMO AREA 2)	199509	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-016	WASTE OIL AST-3RD BATTERY	198909	This site is part of the overall effort to address improperly closed out sites.



## Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-017	WASTE OIL AST-4TH BATTERY	198909	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-018	FIRE TRAINING AREA FACILITY (892)	198909	This site is part of the overall effort to address improperly closed out sites. It required additional sampling to be conducted in FY08. Received regulatory closure from EPA, Region VII and the KDHE in January 2009.
FTRI-019	FORMER FIRE TRAINING AREA FFTA-MAAF	201209	The site was closed with regulator approval of a September 2010 Remedial Action Completion Report.
FTRI-020	INDUSTRIAL WASTEWATER SYSTEM (CUSTER HL)	199803	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-022	FORMER WWTP & SLUDGE BEDS (ANCHOR)	200705	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-023	CUSTER HILL WWTP AND SLUDGE BEDS	199305	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-024	FORSYTH WWTP AND SLUDGE BEDS	199305	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-025	MAIN POST WWTP AND SLUDGE BEDS	199305	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-026	RANGE COMPLEX WW LAGOONS	199305	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-028	FMR FIRE TRAINING AREA CAMP FUNSTON	199402	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-029	OLD INCINERATOR SITE SE-CAMP FUNSTON	200308	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-030	PESTICIDE STORAGE FACILITY (MIXING)	201005	The site was closed with regulator approval of an April 2010 Explanation of Significant Differences.
FTRI-032	IMPACT ZONE	199309	This site is an active range and therefore ineligible for ER,A funding.
FTRI-033	DOUTHIT RANGE	199305	This site is an active range and therefore ineligible for ER,A funding.

## Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FTRI-034	IMPACT AREA PERIMETER SMALL ARM RANGES	199612	This site is an active range and therefore ineligible for ER,A funding.
FTRI-035	NON-IMPACT AREA SMALL ARMS RANGES	200007	This site is an active range and therefore ineligible for ER,A funding.
FTRI-036	SOUTHEAST FUNSTON LANDFILL (ANCHOR)	200901	This site is part of the overall effort to address improperly closed out sites. It required additional sampling to be conducted in FY08. Received regulatory closure from EPA, Region VII and the KDHE in January 2009.
FTRI-037	OLD WHITSIDE INCINERATOR AREA	199507	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-038	FORSYTH LANDFILL(S)	200708	Received regulatory closure from the EPA, Region VII & the KDHE for IRP in August 2007.
FTRI-039	CONSOLIDATED MAINTENANCE FACILITY	199305	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-040	FORMER OIL TESTING LAB (ANCHOR)	200711	Received regulatory closure from the EPA, Region VII & the KDHE in November 2007.
FTRI-041	FURNITURE REPAIR SHOPS (3)	199507	This site is part of the overall effort to address improperly closed out sites. Two of the three sites received regulatory closure from the EPA, Region VII & the KDHE in 2007. One site (bldg 1605) required additional sampling in FY08 and received regulatory closure from EPA, Region VII and the KDHE in January 2009.
FTRI-042	TAC VEHICLE MAINTENANCE SHOPS	199305	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-043	FORMER GAS STATIONS/GARAGES	199305	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the KDHE in 2008 and the EPA, Region VII in 2009, except one site at Forsyth I Street that was sampled in FY08.
FTRI-044	FORMER ASPHALT PLANT (NEAR BLDG 354)	199509	This site was addressed in the 354 Area Solvent Detections RI/FS/PP and will fall under the ROD developed for FTRI-031.
FTRI-045	PHOTO AND PRINT PLANTS	199507	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-046	FRMR DS/GS Bldg 1693 Adj Areas	199507	This site is part of the overall effort to address improperly closed out sites. The site was closed with regulator approval of a December 2008 Expanded Site Investigation Report.

## Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FTRI-047	FORMER LIVESTOCK DIPPING FACILITY	200711	Received regulatory closure from the EPA, Region VII & the KDHE in November 2007.
FTRI-048	FORMER PESTICIDES FACILITIES	199507	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-049	MERCURY CONTAMINATION AREAS	199305	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-050	PCB SPILL AREAS /TRANSFORMER SITES	199803	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-051	BLDG. 727 WASTE PIT	199903	This site is part of the overall effort to address improperly closed out sites. It required additional sampling to be conducted in FY08. Received regulatory closure from EPA, Region VII and the KDHE in January 2009.
FTRI-052	INACTIVE LANDFILLS - CAMP WHITSIDE	199507	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-053	POL TANK FARM	200505	This site has been transferred to the Compliance-Related Cleanup Program under CC-FTRI-01.
FTRI-054	CUSTER HILL PX USTS BLDG 5320	199709	This site is part of the overall effort to address improperly closed out sites. It is being addressed in CC-FTRI-09 Fuel Dispensing Stations.
FTRI-055	MILFORD LAKE CAMPGROUND/MARINA WELLS	199507	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-059	REMOVE USTS	199012	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-060	MAINPOST PX GAS STATION / 218	199506	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-061	FORMER GAS SERVICE STATION BLDG 354	199510	This site was closed under the FTRI-031 354 Area Solvent Detection site ROD.
FTRI-062	TMP GAS STATION BLDG 388	200501	This site is part of the overall effort to address improperly closed out sites. It is being addressed in CC-FTRI-09 Fuel Dispensing Stations.
FTRI-064	FMR BLDG 1090 DISPENSING STATION	199506	This site is part of the overall effort to address improperly closed out sites.

## Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-065	FMR BLDG 1190 DISPENSING STATION	199506	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-067	FMR BLDG 1539 DISPENSING STATION	199708	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-069	FMR BLDG 1890 DISPENSING STATION	199708	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-070	FMR BLDG 2341 DISPENSING STATION	199601	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-071	FMR BLDG 2345 DISPENSING STATION	199411	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-072	BLDG 8340 FUEL OIL UST	199411	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.
FTRI-073	BLDG 8360 FUEL OIL UST	199505	This site is part of the overall effort to address improperly closed out sites. Received regulatory closure from the EPA, Region VII & the KDHE in 2007.

# IRP Schedule

Date of IRP Inception: 198312

## Past Phase Completion Milestones

### 1985

PA (FTRI-003 - SOUTHWEST FUNSTON LANDFILL , FTRI-004 - MAIN POST LANDFILL, FTRI-009 - OB/OD GROUND (RANGE 16) , FTRI-023 - CUSTER HILL WWTP AND SLUDGE BEDS, FTRI-024 - FORSYTH WWTP AND SLUDGE BEDS, FTRI-025 - MAIN POST WWTP AND SLUDGE BEDS, FTRI-027 - DRY CLEANING FACILITIES AREA , FTRI-030 - PESTICIDE STORAGE FACILITY (MIXING), FTRI-032 - IMPACT ZONE, FTRI-033 - DOUTHIT RANGE, FTRI-034 - IMPACT AREA PERIMETER SMALL ARM RANGES, FTRI-035 - NON-IMPACT AREA SMALL ARMS RANGES)

SI (FTRI-032 - IMPACT ZONE)

RFA (FTRI-008 - PCB STORAGE CONEX (BUILDING 348), FTRI-039 - CONSOLIDATED MAINTENANCE FACILITY)

### 1989

RFA (FTRI-001 - CUSTER HILL SANITARY LANDFILL, FTRI-002 - WHITSIDE C/D LANDFILL-CLOSED, FTRI-007 - PCB STORAGE BUILDING 343, FTRI-010 - PESTICIDE (2-4D) UST AT CAMP FUNSTON, FTRI-012 - WASTE STORAGE DRMO SECONDARY AREA, FTRI-013 - ABANDONED VOC TANKS NORTH OF IACH, FTRI-016 - WASTE OIL AST-3RD BATTERY, FTRI-017 - WASTE OIL AST-4TH BATTERY, FTRI-036 - SOUTHEAST FUNSTON LANDFILL (ANCHOR), FTRI-038 - FORSYTH LANDFILL(S), FTRI-041 - FURNITURE REPAIR SHOPS (3), FTRI-045 - PHOTO AND PRINT PLANTS, FTRI-046 - FRMR DS/GS Bldg 1693 Adj Areas, FTRI-050 - PCB SPILL AREAS /TRANSFORMER SITES)

PA (FTRI-014 - HOSPITAL INCINERATOR-IRWIN ACH, FTRI-019 - FORMER FIRE TRAINING AREA FFTA-MAAF, FTRI-020 - INDUSTRIAL WASTEWATER SYSTEM (CUSTER HL), FTRI-022 - FORMER WWTP & SLUDGE BEDS (ANCHOR) , FTRI-026 - RANGE COMPLEX WW LAGOONS, FTRI-028 - FMR FIRE TRAINING AREA CAMP FUNSTON, FTRI-029 - OLD INCINERATOR SITE SE-CAMP FUNSTON)

SI (FTRI-003 - SOUTHWEST FUNSTON LANDFILL , FTRI-014 - HOSPITAL INCINERATOR-IRWIN ACH, FTRI-022 - FORMER WWTP & SLUDGE BEDS (ANCHOR) , FTRI-023 - CUSTER HILL WWTP AND SLUDGE BEDS, FTRI-024 - FORSYTH WWTP AND SLUDGE BEDS, FTRI-025 - MAIN POST WWTP AND SLUDGE BEDS, FTRI-027 - DRY CLEANING FACILITIES AREA , FTRI-030 - PESTICIDE STORAGE FACILITY (MIXING), FTRI-034 - IMPACT AREA PERIMETER SMALL ARM RANGES, FTRI-035 - NON-IMPACT AREA SMALL ARMS RANGES)

CS (FTRI-001 - CUSTER HILL SANITARY LANDFILL, FTRI-007 - PCB STORAGE BUILDING 343, FTRI-008 - PCB STORAGE CONEX (BUILDING 348), FTRI-010 - PESTICIDE (2-4D) UST AT CAMP FUNSTON, FTRI-013 - ABANDONED VOC TANKS NORTH OF IACH, FTRI-016 - WASTE OIL AST-3RD BATTERY, FTRI-017 - WASTE OIL AST-4TH BATTERY)

ISC (FTRI-018 - FIRE TRAINING AREA FACILITY (892))

INV (FTRI-018 - FIRE TRAINING AREA FACILITY (892))

DES (FTRI-008 - PCB STORAGE CONEX (BUILDING 348))

### 1990

DES (FTRI-013 - ABANDONED VOC TANKS NORTH OF IACH)

### 1991

IRA (FTRI-066 - FMR BLDG 1245 DISPENSING STATION, FTRI-067 - FMR BLDG 1539 DISPENSING STATION, FTRI-068 - FMR BLDG 1637 DISPENSING STATION, FTRI-069 - FMR BLDG 1890 DISPENSING STATION)

DES (FTRI-010 - PESTICIDE (2-4D) UST AT CAMP FUNSTON)

CMI(C) (FTRI-008 - PCB STORAGE CONEX (BUILDING 348))

INV (FTRI-064 - FMR BLDG 1090 DISPENSING STATION, FTRI-065 - FMR BLDG 1190 DISPENSING STATION)

IMP(C) (FTRI-059 - REMOVE USTS)

ISC (FTRI-057 - 6200 AREA FUEL OIL LINE, FTRI-059 - REMOVE USTS, FTRI-061 - FORMER GAS SERVICE STATION BLDG 354, FTRI-063 - FMR BLDG 1044 DISPENSING STATION, FTRI-064 - FMR BLDG 1090 DISPENSING STATION, FTRI-065 - FMR BLDG 1190 DISPENSING STATION, FTRI-066 - FMR BLDG 1245 DISPENSING STATION, FTRI-067 - FMR BLDG 1539 DISPENSING STATION, FTRI-068 - FMR BLDG 1637 DISPENSING STATION, FTRI-069 - FMR BLDG 1890 DISPENSING STATION, FTRI-070 - FMR BLDG 2341 DISPENSING STATION)

## IRP Schedule

### 1992

RFA (FTRI-049 - MERCURY CONTAMINATION AREAS)  
IRA (FTRI-054 - CUSTER HILL PX USTS BLDG 5320, FTRI-061 - FORMER GAS SERVICE STATION BLDG 354)  
CMI(C) (FTRI-010 - PESTICIDE (2-4D) UST AT CAMP FUNSTON, FTRI-013 - ABANDONED VOC TANKS NORTH OF IACH, FTRI-049 - MERCURY CONTAMINATION AREAS)  
ISC (FTRI-054 - CUSTER HILL PX USTS BLDG 5320, FTRI-072 - BLDG 8340 FUEL OIL UST, FTRI-073 - BLDG 8360 FUEL OIL UST)

### 1993

RFI/CMS (FTRI-001 - CUSTER HILL SANITARY LANDFILL)  
ISC (FTRI-043 - FORMER GAS STATIONS/GARAGES, FTRI-053 - POL TANK FARM, FTRI-060 - MAINPOST PX GAS STATION / 218)  
SI (FTRI-004 - MAIN POST LANDFILL, FTRI-019 - FORMER FIRE TRAINING AREA FFTA-MAAF, FTRI-020 - INDUSTRIAL WASTEWATER SYSTEM (CUSTER HL), FTRI-026 - RANGE COMPLEX WW LAGOONS, FTRI-028 - FMR FIRE TRAINING AREA CAMP FUNSTON, FTRI-029 - OLD INCINERATOR SITE SE-CAMP FUNSTON, FTRI-033 - DOUTHIT RANGE, FTRI-037 - OLD WHITSIDE INCINERATOR AREA)  
RI/FS (FTRI-028 - FMR FIRE TRAINING AREA CAMP FUNSTON, FTRI-032 - IMPACT ZONE)  
RFA (FTRI-005 - CUSTER HILL ROAD RUBBLE DUMP, FTRI-006 - DRMO STORAGE AREA, FTRI-015 - FORMER DRMO LOCATION (DRMO AREA 2), FTRI-042 - TAC VEHICLE MAINTENANCE SHOPS, FTRI-047 - FORMER LIVESTOCK DIPPING FACILITY, FTRI-048 - FORMER PESTICIDES FACILITIES, FTRI-051 - BLDG. 727 WASTE PIT, FTRI-052 - INACTIVE LANDFILLS - CAMP WHITSIDE, FTRI-055 - MILFORD LAKE CAMPGROUND/MARINA WELLS)  
CS (FTRI-002 - WHITSIDE C/D LANDFILL-CLOSED, FTRI-006 - DRMO STORAGE AREA, FTRI-012 - WASTE STORAGE DRMO SECONDARY AREA, FTRI-015 - FORMER DRMO LOCATION (DRMO AREA 2), FTRI-036 - SOUTHEAST FUNSTON LANDFILL (ANCHOR), FTRI-038 - FORSYTH LANDFILL(S), FTRI-039 - CONSOLIDATED MAINTENANCE FACILITY, FTRI-041 - FURNITURE REPAIR SHOPS (3), FTRI-045 - PHOTO AND PRINT PLANTS, FTRI-046 - FRMR DS/GS Bldg 1693 Adj Areas, FTRI-047 - FORMER LIVESTOCK DIPPING FACILITY, FTRI-048 - FORMER PESTICIDES FACILITIES, FTRI-050 - PCB SPILL AREAS /TRANSFORMER SITES, FTRI-051 - BLDG. 727 WASTE PIT, FTRI-052 - INACTIVE LANDFILLS - CAMP WHITSIDE, FTRI-055 - MILFORD LAKE CAMPGROUND/MARINA WELLS)  
PA (FTRI-011 - CAMP FUNSTON GW DETECTIONS, FTRI-031 - 354 AREA SOLVENT DETECTIONS (354), FTRI-037 - OLD WHITSIDE INCINERATOR AREA, FTRI-040 - FORMER OIL TESTING LAB (ANCHOR), FTRI-044 - FORMER ASPHALT PLANT (NEAR BLDG 354))

### 1994

DES (FTRI-001 - CUSTER HILL SANITARY LANDFILL)  
RA(C) (FTRI-028 - FMR FIRE TRAINING AREA CAMP FUNSTON)  
INV (FTRI-070 - FMR BLDG 2341 DISPENSING STATION, FTRI-072 - BLDG 8340 FUEL OIL UST)  
IRA (FTRI-030 - PESTICIDE STORAGE FACILITY (MIXING), FTRI-035 - NON-IMPACT AREA SMALL ARMS RANGES, FTRI-060 - MAINPOST PX GAS STATION / 218)  
ISC (FTRI-056 - ABANDONED GASOLINE LINE, FTRI-062 - TMP GAS STATION BLDG 388, FTRI-071 - FMR BLDG 2345 DISPENSING STATION)

### 1995

CMI(C) (FTRI-001 - CUSTER HILL SANITARY LANDFILL)  
RI/FS (FTRI-037 - OLD WHITSIDE INCINERATOR AREA)  
CAP (FTRI-064 - FMR BLDG 1090 DISPENSING STATION, FTRI-065 - FMR BLDG 1190 DISPENSING STATION)  
INV (FTRI-057 - 6200 AREA FUEL OIL LINE, FTRI-060 - MAINPOST PX GAS STATION / 218, FTRI-061 - FORMER GAS SERVICE STATION BLDG 354, FTRI-062 - TMP GAS STATION BLDG 388, FTRI-066 - FMR BLDG 1245 DISPENSING STATION, FTRI-067 - FMR BLDG 1539 DISPENSING STATION, FTRI-068 - FMR BLDG 1637 DISPENSING STATION, FTRI-069 - FMR BLDG 1890 DISPENSING STATION, FTRI-071 - FMR BLDG 2345 DISPENSING STATION, FTRI-073 - BLDG 8360 FUEL OIL UST)  
RFI/CMS (FTRI-002 - WHITSIDE C/D LANDFILL-CLOSED, FTRI-012 - WASTE STORAGE DRMO SECONDARY AREA, FTRI-015 - FORMER DRMO LOCATION (DRMO AREA 2), FTRI-041 - FURNITURE REPAIR SHOPS

## IRP Schedule

IMP(C)	(3), FTRI-045 - PHOTO AND PRINT PLANTS, FTRI-046 - FRMR DS/GS Bldg 1693 Adj Areas, FTRI-047 - FORMER LIVESTOCK DIPPING FACILITY, FTRI-048 - FORMER PESTICIDES FACILITIES, FTRI-052 - INACTIVE LANDFILLS - CAMP WHITSIDE, FTRI-055 - MILFORD LAKE CAMPGROUND/MARINA WELLS) (FTRI-064 - FMR BLDG 1090 DISPENSING STATION, FTRI-065 - FMR BLDG 1190 DISPENSING STATION, FTRI-071 - FMR BLDG 2345 DISPENSING STATION, FTRI-072 - BLDG 8340 FUEL OIL UST, FTRI-073 - BLDG 8360 FUEL OIL UST)
SI	(FTRI-011 - CAMP FUNSTON GW DETECTIONS, FTRI-031 - 354 AREA SOLVENT DETECTIONS (354), FTRI-044 - FORMER ASPHALT PLANT (NEAR BLDG 354))
<b>1996</b>	
INV	(FTRI-053 - POL TANK FARM, FTRI-056 - ABANDONED GASOLINE LINE, FTRI-063 - FMR BLDG 1044 DISPENSING STATION)
IMP(C)	(FTRI-070 - FMR BLDG 2341 DISPENSING STATION)
CAP	(FTRI-057 - 6200 AREA FUEL OIL LINE)
RD	(FTRI-003 - SOUTHWEST FUNSTON LANDFILL )
RI/FS	(FTRI-003 - SOUTHWEST FUNSTON LANDFILL )
<b>1997</b>	
RI/FS	(FTRI-004 - MAIN POST LANDFILL, FTRI-030 - PESTICIDE STORAGE FACILITY (MIXING))
IRA	(FTRI-003 - SOUTHWEST FUNSTON LANDFILL , FTRI-062 - TMP GAS STATION BLDG 388, FTRI-063 - FMR BLDG 1044 DISPENSING STATION)
CAP	(FTRI-062 - TMP GAS STATION BLDG 388, FTRI-063 - FMR BLDG 1044 DISPENSING STATION, FTRI-066 - FMR BLDG 1245 DISPENSING STATION, FTRI-067 - FMR BLDG 1539 DISPENSING STATION, FTRI-068 - FMR BLDG 1637 DISPENSING STATION, FTRI-069 - FMR BLDG 1890 DISPENSING STATION)
INV	(FTRI-054 - CUSTER HILL PX USTS BLDG 5320)
RA(C)	(FTRI-003 - SOUTHWEST FUNSTON LANDFILL )
<b>1998</b>	
SI	(FTRI-009 - OB/OD GROUND (RANGE 16) )
RFI/CMS	(FTRI-006 - DRMO STORAGE AREA, FTRI-050 - PCB SPILL AREAS /TRANSFORMER SITES, FTRI-051 - BLDG. 727 WASTE PIT)
RI/FS	(FTRI-020 - INDUSTRIAL WASTEWATER SYSTEM (CUSTER HL))
<b>2000</b>	
IRA	(FTRI-029 - OLD INCINERATOR SITE SE-CAMP FUNSTON)
RI/FS	(FTRI-035 - NON-IMPACT AREA SMALL ARMS RANGES)
<b>2001</b>	
RFI/CMS	(FTRI-038 - FORSYTH LANDFILL(S))
PA	(FTRI-074 - WWI INCINERATOR, NW CAMP FUNSTON)
IRA	(FTRI-036 - SOUTHEAST FUNSTON LANDFILL (ANCHOR), FTRI-038 - FORSYTH LANDFILL(S))
<b>2003</b>	
IRA	(FTRI-019 - FORMER FIRE TRAINING AREA FFTA-MAAF)
RI/FS	(FTRI-029 - OLD INCINERATOR SITE SE-CAMP FUNSTON)
<b>2005</b>	
LTM	(FTRI-011 - CAMP FUNSTON GW DETECTIONS, FTRI-062 - TMP GAS STATION BLDG 388)
CAP	(FTRI-053 - POL TANK FARM)
RA(C)	(FTRI-019 - FORMER FIRE TRAINING AREA FFTA-MAAF)
RI/FS	(FTRI-011 - CAMP FUNSTON GW DETECTIONS, FTRI-019 - FORMER FIRE TRAINING AREA FFTA-MAAF)
<b>2006</b>	
RI/FS	(FTRI-031 - 354 AREA SOLVENT DETECTIONS (354))

# IRP Schedule

IRA	(FTRI-027 - DRY CLEANING FACILITIES AREA )
<b>2007</b>	
RA(C)	(FTRI-031 - 354 AREA SOLVENT DETECTIONS (354))
RD	(FTRI-031 - 354 AREA SOLVENT DETECTIONS (354))
LTM	(FTRI-022 - FORMER WWTP & SLUDGE BEDS (ANCHOR) , FTRI-038 - FORSYTH LANDFILL(S))
<b>2008</b>	
RD	(FTRI-027 - DRY CLEANING FACILITIES AREA )
RI/FS	(FTRI-027 - DRY CLEANING FACILITIES AREA )
RA(C)	(FTRI-027 - DRY CLEANING FACILITIES AREA )
LTM	(FTRI-040 - FORMER OIL TESTING LAB (ANCHOR), FTRI-047 - FORMER LIVESTOCK DIPPING FACILITY)
<b>2009</b>	
IRA	(FTRI-056 - ABANDONED GASOLINE LINE)
RFI/CMS	(FTRI-036 - SOUTHEAST FUNSTON LANDFILL (ANCHOR))
<b>2010</b>	
DES	(FTRI-063 - FMR BLDG 1044 DISPENSING STATION, FTRI-066 - FMR BLDG 1245 DISPENSING STATION, FTRI-068 - FMR BLDG 1637 DISPENSING STATION)
IMP(C)	(FTRI-063 - FMR BLDG 1044 DISPENSING STATION, FTRI-066 - FMR BLDG 1245 DISPENSING STATION, FTRI-068 - FMR BLDG 1637 DISPENSING STATION)
RA(O)	(FTRI-003 - SOUTHWEST FUNSTON LANDFILL )
LTM	(FTRI-030 - PESTICIDE STORAGE FACILITY (MIXING))
<b>2011</b>	
DES	(FTRI-056 - ABANDONED GASOLINE LINE)
RA(O)	(FTRI-019 - FORMER FIRE TRAINING AREA FFTA-MAAF)
SI	(FTRI-074 - WWI INCINERATOR, NW CAMP FUNSTON)
IRA	(FTRI-074 - WWI INCINERATOR, NW CAMP FUNSTON)
CAP	(FTRI-056 - ABANDONED GASOLINE LINE)
<b>2012</b>	
LTM	(FTRI-019 - FORMER FIRE TRAINING AREA FFTA-MAAF)
IMP(C)	(FTRI-056 - ABANDONED GASOLINE LINE)

## 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
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**Final RA(C) Completion Date:** 201609

**Schedule for Next Five-Year Review:** N/A

**Estimated Completion Date of IRP at Installation (including LTM phase):** 204409



## FORT RILEY IRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY15	FY16	FY17	FY18	FY19	FY20+
FTRI-001	CUSTER HILL SANITARY LANDFILL	CMI(O)						
SITE ID	SITE NAME	PHASE	FY15	FY16	FY17	FY18	FY19	FY20+
FTRI-003	SOUTHWEST FUNSTON LANDFILL	LTM						
SITE ID	SITE NAME	PHASE	FY15	FY16	FY17	FY18	FY19	FY20+
FTRI-009	OB/OD GROUND (RANGE 16)	RI/FS						
		RD						
		RA(C)						
		RA(O)						
SITE ID	SITE NAME	PHASE	FY15	FY16	FY17	FY18	FY19	FY20+
FTRI-027	DRY CLEANING FACILITIES AREA	RA(O)						
SITE ID	SITE NAME	PHASE	FY15	FY16	FY17	FY18	FY19	FY20+
FTRI-031	354 AREA SOLVENT DETECTIONS (354)	RA(O)						
		LTM						
SITE ID	SITE NAME	PHASE	FY15	FY16	FY17	FY18	FY19	FY20+
FTRI-056	ABANDONED GASOLINE LINE	IMP(O)						
SITE ID	SITE NAME	PHASE	FY15	FY16	FY17	FY18	FY19	FY20+
FTRI-057	6200 AREA FUEL OIL LINE	IMP(O)						
SITE ID	SITE NAME	PHASE	FY15	FY16	FY17	FY18	FY19	FY20+
FTRI-063	FMR BLDG 1044 DISPENSING STATION	IMP(O)						
SITE ID	SITE NAME	PHASE	FY15	FY16	FY17	FY18	FY19	FY20+
FTRI-066	FMR BLDG 1245 DISPENSING STATION	IMP(O)						
SITE ID	SITE NAME	PHASE	FY15	FY16	FY17	FY18	FY19	FY20+
FTRI-068	FMR BLDG 1637 DISPENSING STATION	IMP(O)						
SITE ID	SITE NAME	PHASE	FY15	FY16	FY17	FY18	FY19	FY20+
FTRI-074	WWI INCINERATOR, NW CAMP FUNSTON	RI/FS						

**FORT RILEY**  
**Army Defense Environmental Restoration Program**  
**Military Munitions Response Program**

# MMRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 4/2

## Installation Site Types with Future and/or Underway Phases

- 1 Small Arms Range  
(FTRI-001-R-02)
- 1 Unexploded Munitions/Ordnance  
(FTRI-003-R-01)

## Most Widespread Contaminants of Concern

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

## Media of Concern

Groundwater, Sediment, Soil, Surface Water

## 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 200303

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201609/204409

Date of MMRP completion including Long Term Management (LTM): 204409

# MMRP Contamination Assessment

## Contamination Assessment Overview

The Military Munitions Response Program (MMRP) manages the environmental and health issues associated with MC and MEC. In 2000, Fort Riley completed the advance range survey followed by an active/inactive (A/I) range inventory in 2002. The closed, transferring, and transferred range (CTT)/site inventory report was completed in 2003. That report identified the Sherman Heights Small Arms Range (SHSAR) and the Southeast Funston Landfill (SEFL) incinerator site as inactive ranges requiring further investigation. In April 2005 the historical records review (HRR) on these two sites was completed. The SI work plan was completed July 1, 2005, and the SI was initiated in 2005.

There is a low potential for MEC, MC or unexploded ordnance (UXO) at the two sites. Sherman Heights is a small arms range that is wholly contained on the installation. In 1994, lead-contaminated soil was removed from Sherman Heights (Colyer Manor) under CERCLA. The SEFL incinerator site was transferred to the Kansas Department of Wildlife and Parks (KDWP). In 1999, lead-contaminated soil and UXO were removed from the SEFL incinerator site. In summer 2008, the state of Kansas performed UXO clearance in association with road construction and found no UXO.

There is a third site near the Camp Forsyth Landfill Area 2 contained in the sandbars within the Republican River. The site contains munitions debris. There have been three occasions where UXO removal or blow-in-place was conducted. The site is on the installation boundary and can be accessed by the general public in a relatively uncontrolled manner.

## Cleanup Exit Strategy

Future actions will be determined on the basis of the results of the RI/FS. An MC and MEC soil removal, off-site soil disposal, institutional controls, and monitoring may be required.

## MMRP Previous Studies

Year	Title	Author	Date
1993	Action Memorandum for Removal Action Sensitive-Receptor Lead Site - Colyer Manor Area, Fort Riley Military Installation, Fort Riley, Kansas	Fort Riley	DEC-1993
1994	Work Plan for Rapid Response Removal of Contaminated Soils Pesticide Storage Facility and Colyer Manor Sites, Fort Riley, Kansas	OHM Corporation	JAN-1994
	Project Report for Rapid Response Removal of Contaminated Soils Pesticide Storage Facility and Colyer Manor Sites, Fort Riley, Kansas (5 Volumes),	OHM Corporation	JUN-1994
2002	US Army Active/Inactive (A/I) Range Inventory Range Inventory Binder Fort Riley, Kansas	Colorado State University/FORSCOM	MAR-2002
2003	Closed, Transferring, and Transferred Range/Site Inventory Report Fort Riley, Kansas	e2M	OCT-2003
2005	Stakeholder Final of the Military Munitions Response Program Historical Records Review Fort Riley, Kansas	e2m	APR-2005
	Work Plan Military Munitions Response Program Site Inspection Munitions Response Sites Fort Riley - Kansas	e2m	JUL-2005
2006	Site Inspection Report Military Munitions Response Program Site Inspection Fort Riley, Kansas	e2m	MAY-2006
2010	Work Plan MMRP RI/FS Sherman Heights Small Arms Range Impact Slope (FTRI-001-R-02) Junction City, Kansas	Bay West	APR-2010
	Final Explosives Safety Submission Military Munitions Response Program Remedial Investigation/Feasibility Study Camp Forsyth Landfill Area 2 Munitions Response Site Fort Riley, Kansas	Bay West	MAY-2010
	Final Explosives Safety Submission Military Munitions Response Program Remedial Investigation/Feasibility Study Sherman Heights Small Arms Range Impact Slope Fort Riley, Kansas	Bay West	MAY-2010
2011	MC Site Characterization Sampling Addendum MMRP Remedial Investigation and Feasibility Study (RI/FS) Sherman Heights Small Arms Range Impact Slope (FTRI-001-R-02) Fort Riley, Kansas	Bay West	NOV-2011
2012	Final MMRP Historical Records Review Fort Riley, Kansas Camp Forsyth Landfill Area 2 MRS Junction City, Kansas	Bay West	OCT-2012
2013	Explosive Safety Plan (ESP) amendment 1 Military Munitions Response Program Remedial Investigation/Feasibility Study, Camp Forsyth Landfill Area 2 Munitions Response Site Fort Riley, KS	Bay West	SEP-2013

## MMRP Previous Studies

2014

Title	Author	Date
Draft Final Work Plan MMRP Remedial Investigation/Feasibility Study Fort Riley Camp Forsyth Landfill Area 2 MRS Junction City, Kansas	Bay West	JAN-2014
Draft Final Remedial Investigation/Feasibility Study Fort Riley Sherman Heights Small Arms Range Impact Slope Junction City, Kansas	Bay West	FEB-2014
Draft Final Work Plan Addendum 1 MMRP Remedial Investigation/Feasibility Study Fort Riley Camp Forsyth Landfill Area 2 MRS Junction City, Kansas	Bay West	MAR-2014

**FORT RILEY**  
**Military Munitions Response Program**  
**Site Descriptions**

# Site ID: FTRI-001-R-02

## Site Name: SHSAR Impact Slope

### STATUS

Regulatory Driver: CERCLA

MRSPP Score: 04

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

Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	200303.....	200310
SI.....	200406.....	200605
RI/FS.....	200708.....	201504
RD.....	201510.....	201511
RA(C).....	201512.....	201606
RA(O).....	201606.....	204409
<b>RIP Date:</b>	201606	
<b>RC Date:</b>	204409	

### SITE DESCRIPTION

The SHSAR Impact Slope munitions response site (MRS) covers approximately 52 acres and is located above the Colyer Manor housing area in Camp Forsyth. Small arms ranges were operational from the 1880s until the 1980s. Nine millimeter (mm), .22 caliber, .38 caliber, and .45 caliber pistols, small caliber anti-tank machine gun, and .22 caliber (subcaliber) anti-aircraft machine guns were used on these ranges. During the 2005 site investigation fieldwork, four-inch practice Stokes mortars were discovered. Lead contamination was the focus at the SHSAR Firing Points MRS, which is co-located with the Colyer Manor housing. In 1994 under the IRP, 1500 cubic yards of lead-contaminated soil were removed from a target area near Building 3135. This site received clean closure in a 1994 SI report. Negative lead detections from confirmation soil sampling conducted during the 2005 MMRP SI fieldwork resulted in clean closure of the SHSAR Firing Points MRS under the MMRP.

In 2010 and 2011, the SHSAR Impact Slope site was characterized for MEC using a combination of digital and analog geophysical technologies.

Three MEC items were found on the west end of the slope: a 3-inch Hotchkiss projectile, a 3-inch common projectile, and a 2.36-inch anti-tank rocket. No live practice 4-inch Stokes mortars, the munitions of concern, were found.

A 5.5 acre area of lead-contaminated soil was delineated on the eastern end of the SHSAR Impact Slope. The maximum level of soil lead contamination was 1316 ppm XRF and 38,000 ppm Lab. The residential soil Risk-Based Standards for Kansas is 400 ppm. No lead-contaminated groundwater was found.

In 2014, the RI/FS report was completed. Alternative 2 with Land use Controls to reduce the potential for exposure to lead-contaminated soil was recommended. The Land Use Controls include public education, physical access restrictions to include fencing and signage, and inclusion in Fort Riley's Real Property Master Plan. Long-Term Monitoring includes annual inspections, soil sampling every two years, and groundwater sampling every five years.

### CLEANUP/EXIT STRATEGY

The Proposed Plan is scheduled to be completed in October 2014, followed by the Record of Decision in April 2015. In 2016, a Remedial Design Plan will be completed to construct the fencing and install signage. Long-term monitoring activities will begin in 2017.



**Site ID: FTRI-003-R-01**  
**Site Name: Camp Forsyth Landfill Area 2 MRS**

**STATUS**

**Regulatory Driver:** CERCLA  
**MRSPP Score:** 04  
Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)  
Media of Concern: Sediment, Surface Water

<b>Phases</b>	<b>Start</b>	<b>End</b>
PA.....	200303.....	200310
SI.....	200406.....	200605
RI/FS.....	200708.....	201609
<b>RIP Date:</b>	N/A	
<b>RC Date:</b>	201609	

**SITE DESCRIPTION**

The Camp Forsyth Landfill Area 2 MRS lies along the southwestern boundary of Fort Riley and covers approximately 30 acres of sandbars and riverbed in the Republican River. The River Walk, a nature trail, passes by the site. A series of warning signs are posted between the site and the River Walk to warn the public of the possible presence of munitions. During the winter months, bald eagles pass over the site as they travel between their roosting site downstream on the Kansas River and their feeding areas upstream on Milford Lake.

Munitions debris was found on a downstream sandbar after the 1993 regional flood. In 1994, munitions debris consisting of 3.5- and 2.36-inch rockets, M1 land mines, and expended small arms ammunitions was destroyed. In 2000 and 2001, a 1500-foot revetment was constructed to stabilize the bank on the Fort Riley side of the river. Between 2002 and 2009, 2.36-inch rockets, and expended small arms ammunition were found on the sandbar adjacent to the revetment during annual inspections.

In 2011, an MMRP RI work plan was submitted to the USEPA and KDHE. Later that year, the revetment was extended upriver to prevent erosion into the landfill, the River Walk was rerouted outside the hazardous fragmentation zone, and the site was characterized for MEC using a combination of digital and analog geophysical technologies.

Nine MEC items were found on Republican River sandbars. They included smoke grenades, rifle grenades, 2.36-inch anti-tank rockets, a slap flare, and an M-6 anti-tank land mine. A stick of TNT was also found.

No munitions constituents or lead contamination was found. Based on the discovery of multiple MEC items, it was decided that additional fieldwork was required. To identify areas with a high probability of containing MEC, an HHR was completed in 2012.

KDHE approved the RI/FS Work Plan in February 2014 with EPA approval following in March 2014.

The second field mobilization was completed in the summer 2014.

**CLEANUP/EXIT STRATEGY**

Depending on the results of the second mobilization in 2014, Fort Riley may request site closure.

## Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FTRI-001-R-01	SHSAR Firing Points	200605	Made RC after the June 2006 Site Investigation based on no MEC or MC Contamination.
FTRI-002-R-01	SOUTHEAST FUNSTON LANDFILL	200605	Made RC after the June 2006 Site Investigation based on no MEC or MC Contamination.

# MMRP Schedule

**Date of MMRP Inception** 200303

## Past Phase Completion Milestones

### 2004

PA (FTRI-001-R-01 - SHSAR Firing Points, FTRI-001-R-02 - SHSAR Impact Slope, FTRI-002-R-01 - SOUTHEAST FUNSTON LANDFILL, FTRI-003-R-01 - Camp Forsyth Landfill Area 2 MRS)

### 2006

SI (FTRI-001-R-01 - SHSAR Firing Points, FTRI-001-R-02 - SHSAR Impact Slope, FTRI-002-R-01 - SOUTHEAST FUNSTON LANDFILL, FTRI-003-R-01 - Camp Forsyth Landfill Area 2 MRS)

## Additional Past Phase Completion Milestones

### 2003

Preliminary Assessment, Sites FTRI-001-R-01, FTRI-001-R-02, FTRI-002-R-01, FTRI-003-R-01, October

### 2005

Site Investigation, Sites FTRI-001-R-01, FTRI-001-R-02, FTRI-002-R-01, FTRI-003-R-01, December

## 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
FTRI-003-R-01	Camp Forsyth Landfill Area 2 MRS	CFLA2 Decision Document	20151009
FTRI-001-R-02	SHSAR Impact Slope	SHSAR Impact Slope Decision Document	20150220

**Final RA(C) Completion Date:** 201606

**Schedule for Next Five-Year Review:** N/A

**Estimated Completion Date of MMRP at Installation (including LTM phase):** 204409

## FORT RILEY MMRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY15	FY16	FY17	FY18	FY19	FY20+
FTRI-001-R-02	SHSAR Impact Slope	RI/FS						
		RD						
		RA(C)						
		RA(O)						
SITE ID	SITE NAME	PHASE	FY15	FY16	FY17	FY18	FY19	FY20+
FTRI-003-R-01	Camp Forsyth Landfill Area 2 MRS	RI/FS						

**FORT RILEY**  
**Army Defense Environmental Restoration Program**  
**Compliance Restoration**

## CR Summary

**Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count:** 5/1

### Installation Site Types with Future and/or Underway Phases

- 1 Contaminated Ground Water  
(CC-FTRI-01)
- 2 Underground Storage Tank  
(CC-FTRI-09, CC-FTRI-11)
- 1 Underground Tank Farm  
(CC-FTRI-12)

### Most Widespread Contaminants of Concern

Petroleum, Oil and Lubricants (POL)

### Media of Concern

Groundwater, Soil

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

Site ID	Site Name	Action	Remedy	FY
CC-FTRI-01	POL Tank Farm Site	FRA	FREE PRODUCT RECOVERY	2011

### Duration of CR

**Date of CR Inception:** 199104

**Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC):** 201809/204409

**Date of CR completion including Long Term Management (LTM):** 204409

## CR Contamination Assessment

### Contamination Assessment Overview

The POL tank farm is an active facility with six ASTs consisting of motor gasoline (MOGAS), diesel, and slop oil (recyclable liquid petroleum products). Spills varying in magnitude have occurred since the facility began operations. Free-product recovery events have resulted in only partial recovery. The POL tank farm has undergone several phases of an ongoing site investigation that found measurable free-product and levels of benzene that exceed MCL in the groundwater.

Building 388 is an active transportation motor pool dispensing station with two 8000-gallon ASTs for gasoline and diesel. In 2008, 32 gallons of free-product were recovered from the site.

Building 5320 is an Army/Air Force Exchange Services service station with four 6000-gallon gasoline ASTs.

Building 388 has free-product and both sites have benzene contaminated groundwater above regulatory levels.

### Cleanup Exit Strategy

CC-FTRI-01: Monitor and bail semiannually until the tank farm ceases operations; develop and implement a regulator-approved corrective action.

CC-FTRI-09:

Bldg. 388 - Sample groundwater and soil, complete investigation for the free-product source, and develop regulator-approved corrective action.

Bldg. 5320 - Conduct groundwater sampling, determine removal schedule for tanks, pipes and pumps; develop and implement regulator-approved corrective action.

CC-FTRI-11:

Bldg. 700 - Further investigation/remediation will be conducted in 2014.

## CR Previous Studies

Year	Title	Author	Date
1995	Final Letter Report POL Tank Farm Site Investigation POL UST Site Investigations/Remedial Action Plans Fort Riley, Kansas	Dames & Moore	NOV-1995
1998	Data Summary Report for the POL Tank Farm Investigation Fort Riley, Kansas	Corps of Engineers - Kansas City District	JUL-1998
	Letter Report - Custer Hill POL Facility Fractured Limestone Analysis	Burns & McDonnell	SEP-1998
1999	Draft Site Specific Safety and Health Plan Phase II Site Investigation at POL Tank Farm Custer Hill Fort Riley, Kansas	Burns & McDonnell	AUG-1999
	Quality Control Plan Phase II Site Investigations at POL Tank Farm Custer Hill Fort Riley, Kansas	Burns & McDonnell	AUG-1999
	Tracer Integrity Test 500' IW Sewer Line Fort Riley Manhattan Kansas September 1999	Tracer Research Corporation	SEP-1999
	Draft Final Site Specific Sampling and Analysis Plan Phase II Site Investigations at POL Tank Farm Custer Hill Fort Riley, Kansas	Burns & McDonnell	OCT-1999
2002	Draft Final Phase II Assessment Addendum for the Petroleum Tank Farm Facilities Area at Fort Riley, Kansas	Burns & McDonnell	AUG-2002
	Draft Final Phase II Site Investigation Report for the POL Tank Farm at Fort Riley, Kansas	Burns & McDonnell	AUG-2002
2003	Draft Final Work Plan Addendum Phase II Site Investigation for the POL Tank Farm at Fort Riley, Kansas	Burns & McDonnell	FEB-2003
	Quality Control Summary Report June 2003 Groundwater Sampling Event at the POL Tank Farm at Main Post Fort Riley, Kansas	Burns & McDonnell	JUL-2003
2004	Quality Control Summary Report June 2004 Groundwater Sampling Event at the POL Tank Farm at Fort Riley, Kansas	Burns & McDonnell	AUG-2004
	Field Technical Memorandum for the POL Tank Farm at Fort Riley, Kansas	Burns & McDonnell	SEP-2004
	Quality Control Summary Report October 2004 Groundwater Sampling Event at the POL Tank Farm at Fort Riley, Kansas	Burns & McDonnell	OCT-2004
	Boring Logs Phase II Site Investigation POL Tank Farm Fort Riley, Kansas	Burns & McDonnell	DEC-2004
2005	Quality Control Summary Report February 2005 Groundwater Sampling Event at the POL Tank Farm at Fort Riley, Kansas	Burns & McDonnell	MAR-2005
	Data Summary Report Phase II Site Investigation for the POL Tank Farm Investigation Fort Riley, Kansas	Burns & McDonnell	JUN-2005
	Draft Final Site Investigation Work Plan for the Petroleum, Oil, and Lubricant Site 388 at Main Post Fort Riley, Kansas	ECC/Burns & McDonnell	JUN-2005



## CR Previous Studies

	Title	Author	Date
2005	Draft Final Site Investigation Work Plan for the Petroleum, Oil, and Lubricant Site 5320 at Main Post Fort Riley, Kansas	ECC/Burns & McDonnell	JUN-2005
2008	Project Submittals for the Petroleum, Oil, and Lubricant Tank Farm Custer Hill Fort Riley, Kansas	ECC/Burns & McDonnell	JAN-2008
	Quality Control Summary Report May 2008 Groundwater Sampling Event at the Petroleum, Oil, and Lubricant Site 5320 Fort Riley, Kansas	ECC/Burns & McDonnell	JUN-2008
	Quality Control Summary Report SVE/DPE and November 2008 Groundwater Sampling Event at the Petroleum, Oil, and Lubricant Site 388 Fort Riley, Kansas	ECC/Burns & McDonnell	DEC-2008
2009	Data Summary Report for the SVE/DPE Pilot Test and the November 2008 Groundwater Sampling Event for the POL Site 388 at Fort Riley, Kansas	ECC/Burns & McDonnell	MAR-2009
	2008 Data Summary Report Product Recovery Remediation System for the POL Tank Farm Custer Hill Fort Riley, Kansas	ECC/Burns & McDonnell	JUN-2009
2010	Site-Specific Safety and Health Plan Fuels Sites Environmental Investigation (Multiple Sites) at Fort Riley, Kansas (388, 1460, 2597, & 5320)	Malcolm Pirnie/Burns & McDonnell	JAN-2010
	Plan Addenda Fuels Sites Environmental Investigation (Multiple Sites) at Fort Riley, Kansas Sampling and Analysis Plan Addendum Volume I - FSP Addendum Volume II QAPP Addendum Investigative Derived Waste Management Plan Addendum (388, 1460, 2597, & 5320)	Malcolm Pirnie/Burns & McDonnell	FEB-2010
	Work Plan Fuels Sites Environmental Investigation (Multiple Sites) at Fort Riley, Kansas (388, 1460, 2597, & 5320)	Malcolm Pirnie/Burns & McDonnell	FEB-2010
	Quality Control Summary Report Fuels Sites Environmental Investigation (Multiple Sites) at Fort Riley, Kansas (388, 1460, 2597, & 5320)	Louis Berger/Burns & McDonnell	MAY-2010
	Quality Control Summary Report June 2010 Groundwater Sampling Event at the Petroleum, Oil, and Lubricant Tank Farm Site Fort Riley, Kansas	ECC/Burns & McDonnell	AUG-2010
	Site Recommendation Reports Building 388 Building 1460 Building 2597 Data Summary Report Buildings 388 and 5320 Fuels Sites Environmental Investigation at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	SEP-2010
	2010 Data Summary Report for the Product Recovery Remediation System and Groundwater Sampling Event at the POL Tank Farm Custer Hill Fort Riley, Kansas	ECC/Burns & McDonnell	OCT-2010
2011	Draft Final Building 388 Site Additional Investigation Work Plan at Main Post Fort Riley, Kansas	Louis Berger/Burns & McDonnell	AUG-2011
	Quality Control Summary Report June 2011 Groundwater Sampling Event at the Petroleum, Oil, and Lubricant Tank Farm Site Fort Riley, Kansas	ECC/Burns & McDonnell	OCT-2011
2012			

## CR Previous Studies

	<b>Title</b>	<b>Author</b>	<b>Date</b>
<b>2012</b>	Final Site Investigation Work Plan Building 700 Fuels Site at Fort Riley, Kansas	Burns & McDonnell	JAN-2012
	2011 Data Summary Report for the Product Recovery Remediation System Deactivation, Streamlined Risk Assessment and Groundwater Sampling Event at the POL Tank Farm Custer Hill Fort Riley, Kansas	ECC/Burns & McDonnell	JAN-2012
	Draft Final Additional Field Investigation Report Building 388 at Main Post Fort Riley, Kansas	Louis Berger/Burns & McDonnell	JAN-2012
	Quality Control Summary Report Building 700 Fuels Site, Site Investigation at Fort Riley, Kansas	Burns & McDonnell	APR-2012
	Final Site Recommendation Report Building 700 Fuels Site at Fort Riley, Kansas	Burns & McDonnell	JUN-2012
	Quality Control Summary Report Groundwater Monitoring - Former AAFES Gasoline Station Building 5320, Fort Riley, Kansas	CTI	OCT-2012
	Final Addendum No.3 to the Installation-Wide Accident Prevention Plan for the POL Tank Farm at Fort Riley, Kansas	Avatar/Burns & McDonnell	DEC-2012
	Final Work Plan for the POL Tank Farm at Fort Riley, Kansas	Avatar/Burns & McDonnell	DEC-2012
<b>2013</b>	Final Data Summary Report - July 2012 Building 5320, Former AAFES Gasoline Station Fort Riley, Kansas	CTI	JAN-2013
	Final Project Management Plan and Quality Control Plan for Groundwater Monitoring and Related Activities at the Building 388 Site at Main Post Fort Riley, Kansas	Louis Berger/Burns & McDonnell	FEB-2013
	Final Addendum No.4 to the Installation-Wide Accident Prevention Plan for the Building 388 Site at Fort Riley, Kansas	Louis Berger/Burns & McDonnell	FEB-2013
	Final Work Plan for Groundwater Monitoring and Related Activities at the Building 388 Site at Main Post Fort Riley, Kansas	Louis Berger/Burns & McDonnell	FEB-2013
	Quality Control Summary Report December 2012 Groundwater Sampling Event at the POL Tank Farm Site Fort Riley, Kansas	Avatar/Burns & McDonnell	FEB-2013
	Quality Control Summary Reports for Soil Sampling - Excavation Phase and Investigation Derived Waste (IDW) Samples and First Quarter Groundwater Sampling Event / Groundwater Sampling Summary at the Building 388 Site at Main Post Fort Riley, Kansas	Louis Berger/Burns & McDonnell	JUN-2013
	Quality Control Summary Reports and Groundwater Sampling Summary Second Quarter Groundwater Sampling Event at the Buidling 388 Site at Main Post Fort Riley, Kansas	Louis Berger/Burns & McDonnell	SEP-2013
	Quality Control Summary Reports and Groundwater Sampling Summary Third Quarter Groundwater Sampling Event at the Buidling 388 Site at Main Post Fort Riley, Kansas	Louis Berger/Burns & McDonnell	DEC-2013
<b>2014</b>	Quality Control Summary Reports and Groundwater Sampling Summary Fourth Quarter Groundwater Sampling Event at the Buidling 388 Site at Main Post Fort Riley, Kansas	Louis Berger/Burns & McDonnell	FEB-2014
	Final Work Plan for the POL Tank Farm at Fort Riley,	Avatar/Burns & McDonnell	MAR-2014

## CR Previous Studies

2014

Title	Author	Date
Kansas		
Final Addendum No.3 to the Installation-Wide Accident Prevention Plan for the POL Tank Farm at Fort Riley, Kansas	Avatar/Burns & McDonnell	MAR-2014
Draft Final Site-Specific Sampling and Analysis Plan (Including Site Specific UFP-Quality Assurance Project Plan) for the POL Tank Farm at Custer Hill Fort Riley, Kansas	Avatar/Burns & McDonnell	MAR-2014

**FORT RILEY**  
**Compliance Restoration**  
**Site Descriptions**

**Site ID: CC-FTRI-01**

**Site Name: POL Tank Farm Site**

## STATUS

**Regulatory Driver:** RCRA

Contaminants of Concern: Petroleum, Oil and Lubricants (POL)

Media of Concern: Groundwater, Soil

Phases	Start	End
ISC.....	199104.....	199808
INV.....	199809.....	200304
CAP.....	200409.....	200409
DES.....	200409.....	200409
IMP(C).....	200409.....	201107
IMP(O).....	201403.....	204409

**RIP Date:** 201403

**RC Date:** 204409

## SITE DESCRIPTION

CC-FTRI-01 (alias FTRI-053) is an active POL Tank Farm, located in the Custer Hill troop area. In operation since 1989, the facility was constructed to consolidate storage of petroleum products. The products currently stored in four ASTs consist of MOGAS and diesel. The fifth tank stores slop oil (recyclable petroleum products). The sixth tank that formerly contained Stoddard solvent is not in use.

The POL records indicate that releases varying in magnitude have occurred since the facility began operations. The last known release to the environment occurred in 2001 when 1246 gallons of diesel leaked from a fuel filter with faulty seals in building 8314.

From September 2004 to July 2011, active free product recovery was conducted in two wells with in-well skimmers. Hand bailing began in July 2011 in three wells.

From 2005 to 2008, the POLTF was upgraded with secondary containment installed around the 4 product tanks (geotextile liners), the slop oil tank (concrete), and building 8314 (concrete). The oil/water separator was replaced and the four MOGAS/diesel tanks were inspected for leaks and upgraded to new regulatory standards. In 2007, before pouring the concrete secondary containment for the slop oil tank, 91 tons of POL-contaminated soil was excavated from inside the clay-bermed secondary containment. The slop oil tank is an open site under Buried Tank Leak Assessment A5-081-40328.

PTF01-07 is the only well with dissolved POL groundwater contamination. In 2012, benzene tested at 68 ppb against a maximum contaminant level (MCL) of 5 ppb. Naphthalene tested 8 ppb and Gasoline Range Organics (GRO) tested 1400 ppb against the state's residential risk (RSK) based levels of 1.11 ppb and 500 ppb, respectively.

Free-product recovery is present in a cluster of 3 wells: PTF01-02, PTF03-11, and PTF07-16. In 2011, 17.5 gallons were hand bailed from the three wells. In 2012 due to the drought, free product recovery was minimal. The five-year average recovery is 15 gallons of free-product per year.

## CLEANUP/EXIT STRATEGY

Continue annual groundwater sampling as long as free product is present. Conduct semiannual free-product recovery by manual bailing.

Drill two monitoring wells to complete site characterization.

As long as the POLTF is an active facility, remediation beyond free product recovery is not planned.

**Site ID: CC-FTRI-09**  
**Site Name: Fuel Dispensing Stations**

**STATUS**

**Regulatory Driver:** RCRA  
Contaminants of Concern: Petroleum, Oil and Lubricants (POL)  
Media of Concern: Groundwater, Soil

<b>Phases</b>	<b>Start</b>	<b>End</b>
ISC.....	200810.....	200811
INV.....	200812.....	201809
<b>RIP Date:</b>	N/A	
<b>RC Date:</b>	201809	

**SITE DESCRIPTION**

This site consists of two fuel dispensing stations.

Building 388 (FTRI-062) is an active transportation motor pool dispensing station. In 2008, approximately 32 gallons of free-product were recovered from the site and the groundwater has benzene contamination above the MCL of 5 ug/L. Conducted a full-scale site characterization investigation in 2013. Installed new monitoring wells & conducted quarterly ground-water samplings. Bailed free product from two monitoring wells. A recommendations report is due once the QCSR for the final ground-water sampling event is processed. A project to install an E-85 tank resulted in the replacement of lines & the sump that held the shut-off valves. This sump was predicted to be the source of the ground-water contamination from free product. When the sump was being replaced, it was found that the secondary containment had been breached at the sump due to the settlement of the overlying concrete & fill material as a result of heavy vehicle traffic. It was noted at the time of replacement that water was leaking from the gap & into the surrounding soil.

Building 5320 (FTRI-054) is an Army/Air Force Exchange Services service station that has been deactivated. It has benzene groundwater contamination above the MCL. A groundwater sampling event was conducted in 2012. The site is awaiting further deactivation activities prior to proceeding with developing a cleanup plan.

Both sites are in the "monitor" status in the KDHE's buried tank leak assessment database.

KDHE has requested additional work to address the conditions at both sites.

**CLEANUP/EXIT STRATEGY**

Building 388 - 2015 and 2016 ground-water sampling results and the quantity of free-product recovered will be used to evaluate possible cleanup actions.

Building 5320 - Ground water will be sampled in 2017. Once the ASTs and lines are deactivated or removed, and the site is released by Real Property, a cleanup plan will be developed.

**Site ID: CC-FTRI-11**  
**Site Name: Former Building 700 Fuels Site**

**STATUS**

**Regulatory Driver:** RCRA

Contaminants of Concern: Petroleum, Oil and Lubricants (POL)

Media of Concern: Groundwater, Soil

<b>Phases</b>	<b>Start</b>	<b>End</b>
ISC.....	201201.....	201206
INV.....	201303.....	201609

**RIP Date:** N/A

**RC Date:** 201609

**SITE DESCRIPTION**

The Former Building 700 area had a total of nine USTs. Four 25,000-gal USTs were installed in 1964 and four 20,000-gal USTs were installed in 1987 for JP-8. There was one 550-gal used oil UST installed in 1987. All of the USTs were removed Dec. 30, 1997. In late-2010 during geotechnical drilling operations, the crew noticed hydrocarbon odors and a groundwater sample was obtained and tested. The analysis determined that there was contamination that warranted further investigation to define the levels of contamination.

Per the Final Site Recommendation Report Building 700 Fuels Site dated June 25, 2012, a remedial action should be considered to address the impacted soil and ground water due to elevated concentrations of TPH-GRO, benzene, and naphthalene. Additional field investigation should be considered to determine the nature and extent of the contamination. These efforts are to be documented in a work plan. The potential is for quarterly ground-water sampling, soil sampling, and some form of remedial action to treat the contamination.

**CLEANUP/EXIT STRATEGY**

Develop a remedial action after the additional field investigation is completed.

**Site ID: CC-FTRI-12**

**Site Name: Former 7353 Fuel Dispensing Station**

**STATUS**

**Regulatory Driver:** RCRA

Contaminants of Concern: Petroleum, Oil and Lubricants (POL)

Media of Concern: Soil

<b>Phases</b>	<b>Start</b>	<b>End</b>
ISC.....	201304.....	201304
INV.....	201403.....	201502

**RIP Date:** N/A

**RC Date:** 201502

**SITE DESCRIPTION**

This POL-contaminated site was discovered during the 2013 demolition of the former fuel dispensing station 7353 (121-square feet) that was associated with four diesel tanks. The tanks were installed in 1969 and removed in 1995. The tank hold associated with the two 30,000-gallon diesel tanks did not have any evidence of contamination. However the fill material in the tank hold for the two 10,500-gallon diesel tanks was contaminated based on field screening using Drager tubes. This POL-contaminated fill material was excavated and remediated. The tanks received clean closure from KDHE in 1995. After the tanks were removed, building 7353 was re-purposed as an oil storage building.

Building 7353 is part of the building 7350 tactical vehicle maintenance motor pool in Custer Hill Troop Area.

The April 2013 lab results for the POL-contaminated soil at building 7353 tested 523 mg/kg GRO, which is above the KDHE GRO non-residential soil standard of 450 mg/kg. The soil also tested 7840 mg/kg DRO, which is above the KDHE DRO non-residential soil-to-GW pathway of 7830 mg/kg. Based on soil coloration, the contamination seemed to be getting worse the deeper the site was excavated.

Fort Riley is conducting a SI soil and groundwater investigation in 2014 that will extend into 2015 before a definite answer as to the course of action is determined.

**CLEANUP/EXIT STRATEGY**

Depending on the SI results, either site closure will be requested or an RI type characterization will be implemented.



## Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
CC-FTRI-10	Fuel USTs (Active & Abandoned)	201009	The 2597 and 1460 sites were closed with regulator approval of a September 2010 Site Recommendation Report.

## CR Schedule

**Date of CR Inception:** 199104

### **Past Phase Completion Milestones**

**1998**

ISC (CC-FTRI-01 - POL Tank Farm Site)

**2003**

INV (CC-FTRI-01 - POL Tank Farm Site)

**2004**

DES (CC-FTRI-01 - POL Tank Farm Site)

CAP (CC-FTRI-01 - POL Tank Farm Site)

**2009**

ISC (CC-FTRI-09 - Fuel Dispensing Stations, CC-FTRI-10 - Fuel USTs (Active & Abandoned))

**2010**

INV (CC-FTRI-10 - Fuel USTs (Active & Abandoned))

**2011**

IMP(C) (CC-FTRI-01 - POL Tank Farm Site)

**2012**

ISC (CC-FTRI-11 - Former Building 700 Fuels Site)

**2013**

ISC (CC-FTRI-12 - Former 7353 Fuel Dispensing Station)

### **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:** 201107

**Schedule for Next Five-Year Review:** N/A

**Estimated Completion Date of CR at Installation (including LTM phase):** 204409

## FORT RILEY CR Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY15	FY16	FY17	FY18	FY19	FY20+
CC-FTRI-01	POL Tank Farm Site	IMP(O)						
SITE ID	SITE NAME	PHASE	FY15	FY16	FY17	FY18	FY19	FY20+
CC-FTRI-09	Fuel Dispensing Stations	INV						
SITE ID	SITE NAME	PHASE	FY15	FY16	FY17	FY18	FY19	FY20+
CC-FTRI-11	Former Building 700 Fuels Site	INV						
SITE ID	SITE NAME	PHASE	FY15	FY16	FY17	FY18	FY19	FY20+
CC-FTRI-12	Former 7353 Fuel Dispensing Station	INV						

## Community Involvement

**Technical Review Committee (TRC):** 199201

**Community Involvement Plan (Date Published):** 201208

**Restoration Advisory Board (RAB):** RAB established 199709

**RAB Adjournment Date:** N/A

**RAB Adjournment Reason:** None

### Additional Community Involvement Information

On Sept. 30, 1997, Fort Riley held its orientation meeting for members of the community who were interested in participating on a RAB. Adjacent landowners, local environmental groups, local college professors, mayors and other public officials, members of the local Chambers of Commerce, and select individuals recommended to the Directorate of Environment and Safety were invited to the orientation meeting by direct mail. Newspaper advertisements and television and radio announcements were also used to announce the formation of the RAB.

Approximately 20 people attended the orientation meeting. If they had not completed and returned an application beforehand, interested community members were asked to complete an application, a biographical information form and a demographic information form. A community co-chair was elected by the community representatives who were in attendance. The low number of applications received at that time made it possible to appoint everyone that applied to be a member of the RAB.

The current RAB members include citizens from Riley and Geary Counties, USEPA, KDHE, and representatives from the Geary County Extension Office and the city of Ogden (former mayor).

The RAB meets on an as-needed basis or once per year. An updated community involvement plan was completed in 2012. RAB meetings were held in April 2008, April 2009, May 2010, January 2011, and March 2012. The main topics in 2011 were Camp Forsyth Landfill Area 2, FTRI-003-R-01; the remediation project at FTRI-057, and the proposed remediation activities at FTRI-056.

Over the next year RAB members will continue to gain knowledge of FTRI's sites and regulatory issues, review documents, provide technical advice, and participate in formal public comment period activities.

### Administrative Record is located at

407 Pershing Court  
Fort Riley, KS 66442  
(785) 239-3194/8536/3343

### Information Repository is located at

Federal Document Repository  
Hale Library  
Kansas State University

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

**TAPP Title:** N/A

**Potential TAPP:** N/A

