

FY2015

FORT CARSON

Army Defense Environmental Restoration Program

Installation Action Plan

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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), US Army Environmental Command (USAEC), Fort Carson (FTC) the executing agencies, the regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules, and tentative 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

4ID	4th Infantry Division
ADP	Analytical Data Package
AECOM	Architecture, Engineering, Consulting, Operations and Management (an environmental company)
AEDB-CC	Army Environmental Database - Compliance-related Cleanup
AEDB-R	Army Environmental Database - Restoration
AOC	Area of Concern
AS	Air Sparging
AST	Aboveground Storage Tank
ATG	Automatic Tank Gauging
BAAF	Butts Army Airfield
BANS	Battery Acid Neutralization Shop
BECS	Butts East Combined Site
Bldg	Building
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
CAP	Corrective Action Plan
CC	Compliance-related Cleanup
CDD	Construction and Demolition Debris
CDPHE	Colorado Department of Public Health and Environment
CGWS	Colorado Groundwater Standards
CLA	Combined Landfill Area
CLIN	Contract Line Item Number
CMI(C)	Corrective Measures Implementation - Construction
CMI(O)	Corrective Measures Implementation - Operation
CMS	Corrective Measures Study
CR	Compliance Restoration
CS	Confirmation Sampling
CTC	Cost-to-Complete
DD	Decision Document
DECAM	Directorate of Environmental Compliance and Management
DERP	Defense Environmental Restoration Program
DES	Design
DF	Draft Final
DIO	Directorate of Industrial Operations
DPW	Directorate of Public Works
DRMO	Defense Reutilization and Marketing Office
ER,A	Environmental Restoration, Army
ESE	Environmental Science and Engineering
ET	Evapotranspiration
FLPM	Field and Laboratory Procedures Manual
FRA	Final Remedial Action
FS	Feasibility Study
FTC	Fort Carson
FY	Fiscal Year
GPL	Groundwater Protection Level
GW	Groundwater

Acronyms

IAP	Installation Action Plan
ICP	Interim Closure Plan
ID	Identification
IM	Interim Measure
IMCOM	Installation Management Command
IMP(C)	Implementation - Construction
IMP(O)	Implementation - Operation
INV	Investigation
IR	Installation Restoration
IRA	Interim Remedial Action
IRP	Installation Restoration Program
ISC	Initial Site Characterization
JP	Jet Propellant
K	thousand
LF	Landfill
LTM	Long-Term Management
LUC	Land Use Control
MEC	Munitions and Explosives of Concern
mg/L	milligrams per liter
MMRP	Military Munitions Response Program
MR	Munitions Response
N/A	Not Applicable
NFA	No Further Action
NPL	National Priorities List
OB	Open Burning
OD	Open Detonation
ODUSD(I&E)	Office of the Deputy Under Secretary of Defense for Installations and Environment
OMA	Operations and Maintenance - Army
OPS	Oil and Public Safety
PA	Preliminary Assessment
PAH	Polycyclic Aromatic Hydrocarbons
PBA	Performance-Based Acquisition
PCE	Tetrachloroethylene
PCMS	Pinon Canyon Maneuver Site
PCP	Pentachlorophenol
POL	Petroleum, Oil and Lubricants
POW	Prisoner of War
PRWP	Presumptive Remedy Work Plan
QCSR	Quality Control Summary Report
RA	Remedial Action
RA(C)	Remedial Action - Construction
RA(O)	Remedial Action - Operations
RAB	Restoration Advisory Board
RBC	Risk Based Concentration
RBSL	Risk-Based Screening Level

Acronyms

RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
RV	Revision
SI	Site Inspection
STP	Sewage Treatment Plant
SVE	Soil Vapor Extraction
SVM	Soil Vapor Monitoring
SVOC	Semi-Volatile Organic Compound
SWMU	Solid Waste Management Unit
TAPP	Technical Assistance for Public Participation
TCA	Trichloroethane
TCE	Trichloroethylene
TRC	Technical Review Committee
TSCA	Toxic Substances Control Act
TSWP	Treatability Study Work Plan
ug/L	micrograms per liter
USACE	US Army Corps of Engineers
USAEC	US Army Environmental Command
USAEHA	US Army Environmental Hygiene Agency
USEPA	US Environmental Protection Agency
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound

Acronym Translation Table

CERCLA

Preliminary Assessment(PA)
Site Inspection(SI)
Remedial Investigation/Feasibility Study(RI/FS)
Remedial Design(RD)
Remedial Action (Construction)(RA(C))
Remedial Action (Operation)(RA(O))
Long Term Management(LTM)
Interim Remedial Action(IRA)

RCRA

= RCRA Facility Assessment(RFA)
= Confirmation Sampling(CS)
= RCRA Facility Investigation/Corrective Measures Study(RFI/CMS)
= Design(DES)
= Corrective Measures Implementation (Construction)(CMI(C))
= Corrective Measures Implementation (Operation)(CMI(O))
= Long Term Management(LTM)
= Interim Measure(IM)

Installation Information

Installation Locale

Installation Size (Acreage): 142560

City: Fort Carson

County: El Paso, Pueblo, Fremont

State: Colorado

Other Locale Information

FTC occupies approximately 220 square miles adjacent to the eastern flank of the Rocky Mountain front range and the Pike National Forest in central Colorado. The northern edge of the post is located in El Paso County, south of Colorado Springs, and the southern boundary is approximately 10 miles north of and parallel to US Highway 50 in Pueblo County. A small area in the southwestern portion of the post is located in Fremont County. The Pinon Canyon Maneuver Site (PCMS) is located approximately 150 miles by road southeast of FTC and encompasses 235,000 acres of training opportunities. PCMS provides critical maneuver land for larger units stationed at FTC.

Installation Mission

The primary mission of FTC is the training and readiness of all assigned and attached troops to ensure combat-ready forces. Activities that support training include: vehicle maintenance, aviation maintenance, weapons maintenance, and range qualifications. Major tenants include the Navy and Marine Corps Reserve, the Colorado Army National Guard, the Army Reserve, Medical Command, and Defense Reutilization. FTC also serves several off-post satellite units and activities in its geographical area of responsibility. The US Air Force Academy, Cheyenne Mountain Air Station, Peterson Air Force Base, and 58 reserve components in nine states also use FTC's administrative, training, logistical, and other services.

Lead Organization

IMCOM

Lead Executing Agencies for Installation

US Army Corps of Engineers (USACE) - Omaha District

Regulator Participation

Federal	US Environmental Protection Agency (USEPA), Region 8
State	Colorado Department of Public Health and Environment (CDPHE)
Local	El Paso County

National Priorities List (NPL) Status

FORT CARSON is not on the NPL

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

RAB established 199411

Installation Information

Installation Program Summaries

IRP

Primary Contaminants of Concern: Metals, Petroleum, Oil and Lubricants (POL), Polycyclic Aromatic Hydrocarbons (PAH), Semi-volatiles (SVOC), Volatiles (VOC)

Affected Media of Concern: Groundwater, Soil, Surface Water

CR

Primary Contaminants of Concern: Asbestos, Metals, Petroleum, Oil and Lubricants (POL), Semi-volatiles (SVOC), Volatiles (VOC)

Affected Media of Concern: Groundwater, Soil, Surface Water

5-Year / Periodic Review Summary

5-Year / Periodic Review Summary

Status	Start Date	End Date	End FY
Complete	201001	201010	2011
Planned	201509	201605	2016

Last Completed 5-Year / Periodic Review Details

Associated ROD/DD Name	Sites
Landfill #5 (FTC-009)	FTC-009
Landfill 4 (FTC-008)	FTC-008
Landfill 9 (FTC-013) Land Use Controls	FTC-013

Results Repairs to the LF 4 cap were recommended.

Actions Repairs are underway.

Plans No further plans are required.

Recommendations and Implementation Plans:

N/A

Land Use Control (LUC) Summary

LUC Title: CDD Landfill

Site(s): CC SW170

ROD/DD Title: CDD Landfill (SWMU 170)

Location of LUC

The Construction and Demolition Debris (CDD) Landfill is located on the Fort Carson Military Post, within Sections 28, 29, and 32, Township 15 South, Range 66 West of the 6th PM, El Paso County, Colorado.

Land Use Restriction: Landfill restriction - Prohibit activities that would impact the LF cap (or cover system) and drainage system

Types of Engineering Controls: Fences, Signs

Types of Institutional Controls: Dig Permits, Restrictive covenants, Zoning

Date in Place: 200912

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: State

Record of LUC: Master Plan or Equivalent

Documentation Date: 201301

LUC Enforcement: Annual Inspections

Contaminants: VOC

Additional Information

N/A

LUC Title: Landfill 4 (FTC-008)

Site(s): FTC-008

ROD/DD Title: Landfill 4 (FTC-008)

Location of LUC

Fort Carson Military Reservation Landfill 4.

Sections 28, 29 & 32, Township 15 South, Range 66 West of the 6th P.M. County of El Paso, State of Colorado.

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 vehicular traffic, Media specific restriction - Prohibit, or otherwise manage excavation, Restrict land use - No residential use

Types of Engineering Controls: Fences, Signs

Types of Institutional Controls: Dig Permits, Notations in Master Plan, Restrictions on land use, Restrictive covenants

Date in Place: 200903

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: State

Record of LUC: Master Plan or Equivalent

Documentation Date: 200809

LUC Enforcement: Annual Inspections

Land Use Control (LUC) Summary

Contaminants: PETROLEUM HYDROCARBON

Additional Information

N/A

LUC Title: Landfill 9 LUCs

Site(s): FTC-013

ROD/DD Title: Landfill 9 (FTC-013) Land Use Controls

Location of LUC

Fort Carson Military Post. 6.44 acres located southeast of the intersection of Titus Blvd. and Brown Rd. in the south 1/2 of the southwest 1/4 of the southeast 1/4 of Section 21 and the north 1/2 of the northwest 1/4 of the northeast 1/4 of Section 28, both in Township 15 South, Range 66 west.

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 plantings that interfere LF cap or cover system (roots that penetrate the cap or cover system), Landfill restriction - Restrict vehicular traffic, Restrict land use - No residential use

Types of Engineering Controls: Fences, Signs

Types of Institutional Controls: Dig Permits, Restrictive covenants

Date in Place: 200812

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: State

Record of LUC: Master Plan or Equivalent

Documentation Date: 200605

LUC Enforcement: Annual Inspections

Contaminants: DISSOLVED SOLIDS (TOTAL)

Additional Information

N/A

Cleanup Program Summary

Installation Historic Activity

Construction of Camp Carson began in 1942, shortly after the bombing of Pearl Harbor. It was originally known as Camp Carson (after the frontier hero, General 'Kit' Carson) and served primarily as a training facility for more than 100,000 Soldiers during World War II. The 71st, 89th, and 104th Infantry Divisions trained at the installation. The camp was also the site of the Mountain Training Center, the Army Nurse Corps Training Center, and an internment camp for 9,000 German and Italian prisoners of war.

In 1946, the War Department declared Camp Carson a permanent military post. Activities at the camp were greatly reduced and only 600 personnel remained at the site. During the 1950s, the mission of Camp Carson continued to be to provide basic and advanced training for combat-ready troops. Reserve and National Guard units were located on-site during the Korean Conflict. Between 1951 and 1953, Camp Carson served as a separation center where more than 100,000 Soldiers were processed. In 1954, the name of the installation was officially changed from Camp Carson to Fort Carson.

In 1961, FTC was selected as the site for a new Army training center, but the center was phased out after one year. Between 1962 and 1964, the 5th Infantry Division (Mechanized) was activated and stationed at FTC.

In 1965, approximately 78,500 acres were acquired, increasing the size of the installation to 137,403 acres. This meant that FTC was now able to support and train an entire division. Between 1965 and 1967, concurrent with the escalation of the Vietnam Conflict, military strength at FTC was increased from 10,000 to 25,000 troops. In July and August 1965 two floods occurred in the region that caused major damage to the area and the installation. The first flood resulted in the loss of several lives and \$100 million in damage to the region and the second flood caused \$160,000 in damages at the installation.

Throughout the 1970s, the mission of FTC continued to be the maintenance and training of combat-ready troops. The 4th Infantry Division (4ID) (Mechanized), also known as the 'Iron Horsemen,' was redeployed to FTC from Vietnam. During 1995, FTC became the home of the 10th Special Forces Group and the 3d Armored Cavalry Regiment as well as the 43d Support Group. Two brigades of the 4ID along with the division headquarters were moved to Fort Hood, Texas. The 3d Brigade remained at FTC. As of 1995, operations at FTC were carried out by about 20,000 personnel.

The principal industrial operations at FTC have been the repair and maintenance of vehicles and aircraft. The consolidated maintenance facility [Building (Bldg) 8000] performs specialized repair of tactical and heavy construction and engineering equipment. Vehicle maintenance, at all unit motor pools, includes routine oil changes, lubes, wash downs, and refueling.

On June 4, 1999, the 7th Infantry Division was activated at FTC as an Integrated Division (comprised of an Active component and Army National Guard units). With its headquarters at FTC, the division consists of the 39th Infantry Brigade (Arkansas), the 41st Infantry Brigade (Oregon), and the 45th Infantry Brigade (Oklahoma). The division was originally activated on Dec. 10, 1917.

The US Army announced on Sept. 23, 2004 that FTC would become the new home of the 2nd Brigade, 2nd Infantry Division. FTC underwent a construction boom in 2007 and 2008 in preparation for the arrival of the 4ID from Fort Hood, Texas. In August 2009, the 4ID moved from Fort Hood, Texas, and took over installation command of FTC.

Installation Program Cleanup Progress

IRP

Prior Year Progress: Remedy completion on Landfills 7 and 14 (FTC-011, FTC-026).

Remedy-in-place achieved for SWMUs 13 (FTC-020), 16/53 (FTC-033 and FTC-058), 24 (FTC-021), 164 (FTC-070), 167 (FTC-083), and 168 (FTC-093).

FTC-023: Implementation of the remedies at SWMUs 108 and 109. Remedy completion of SWMU 78.

In lieu of environmental covenants the state of Colorado will issue a notice of environmental use restriction for future SWMU land use requirements.

Future Plan of Action: Monitoring and maintenance will begin or continue at SWMUs 2/3, 4, 5, 7, 8, 9, and 14.

Compliance monitoring at SWMU 168 (FTC-093) and continuing performance monitoring at SWMUs 13 (FTC-020), 16/53 (FTC-033 and FTC-058), 24 (FTC-021), 164 (FTC-070), 167 (FTC-083).

Cleanup Program Summary

FTC-023 - Continue groundwater monitoring for SWMUs 79 and 89.

CR

Prior Year Progress: Remedy completion achieved on Landfills 1 and 170 (CC-SW001, CC-SW170).

Remedy-in-place achieved for SWMU 23 (CC SW023) and 169 (CC SW169)

In lieu of environmental covenants the state of Colorado will issue a notice of environmental use restriction for future SWMU land use requirements.

Future Plan of Action: Monitoring and maintenance will begin or continue at SWMUs 1 and 170.

Continuation of performance monitoring at SWMU 23 (CC SW023) and 169 (CC SW169).

FORT CARSON
Army Defense Environmental Restoration Program
Installation Restoration Program

IRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 79/63

Installation Site Types with Future and/or Underway Phases

1	Contaminated Fill (FTC-093)
1	Contaminated Ground Water (FTC-083)
1	Dip Tank (FTC-058)
1	Disposal Pit/Dry Well (FTC-020)
1	Fire/Crash Training Area (FTC-021)
7	Landfill (FTC-006, FTC-008, FTC-009, FTC-011, FTC-012, FTC-013, FTC-026)
1	Surface Disposal Area (PBA@Carson)
3	Underground Storage Tank (FTC-023, FTC-033, FTC-070)

Most Widespread Contaminants of Concern

Metals, Petroleum, Oil and Lubricants (POL), Polycyclic Aromatic Hydrocarbons (PAH), Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern

Groundwater, Soil, Surface Water

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

Site ID	Site Name	Action	Remedy	FY
FTC-051	FORMER UST SITE, BLDG 9648	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1987
FTC-033	Fmr Waste Oil/Solv USTs, Bldg 8000	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1991
FTC-006	LANDFILLS 2/3 (1960-1978)	IRA	DRAINAGE CONTROLS	1993
FTC-006	LANDFILLS 2/3 (1960-1978)	IRA	FENCE OR OTHER SITE ACCESS CONTROL MEASURES	1993
FTC-026	PETE'S HILL	IRA	DRAINAGE CONTROLS	1995
FTC-068	FORMER UST SITE, BLDG 8300	IRA	WASTE REMOVAL - SOILS	1995
FTC-068	FORMER UST SITE, BLDG 8300	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1997
FTC-068	FORMER UST SITE, BLDG 8300	IRA	WASTE REMOVAL - SOILS	1997
FTC-033	Fmr Waste Oil/Solv USTs, Bldg 8000	IRA	GROUND WATER TREATMENT	1999
FTC-051	FORMER UST SITE, BLDG 9648	IRA	BIOREMEDIATION	1999
FTC-055	FORMER UST SITE, BLDG 981	FRA	WASTE REMOVAL - SOILS	1999
FTC-051	FORMER UST SITE, BLDG 9648	FRA	AIR SPARGING	2000
FTC-058	FORMER VAPOR DEGREASER	IRA	REMOVAL	2000
FTC-009	LANDFILL 5 (1946-1956)	IRA	CAPPING	2001
FTC-021	ABANDONED FIRE TRAINING AREA	IRA	REMOVAL	2001

IRP Summary

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

Site ID	Site Name	Action	Remedy	FY
FTC-017	Range 1, Open Burn Grounds	IRA	WASTE REMOVAL - SOILS	2002
FTC-068	FORMER UST SITE, BLDG 8300	IRA	BIOREMEDIATION - IN SITU	2002
FTC-079	SLUDGE TRENCH PIT	IRA	WASTE REMOVAL - SLUDGES	2002
FTC-020	GRIT OIL PIT	IRA	FREE PRODUCT RECOVERY	2003
FTC-020	GRIT OIL PIT	IRA	SOIL VAPOR EXTRACTION	2003
FTC-023	FORMER USED/WASTE OIL STORAGE TANKS	IRA	WASTE REMOVAL - SOILS	2003
FTC-009	LANDFILL 5 (1946-1956)	FRA	CAPPING	2005
FTC-020	GRIT OIL PIT	IRA	REMOVAL	2005
FTC-083	North Specker Avenue Plumes	IRA	AIR SPARGING	2005
FTC-033	Fmr Waste Oil/Solv USTs, Bldg 8000	IRA	FREE PRODUCT RECOVERY	2006
FTC-013	LANDFILL 9 (1965-1973)	FRA	CAPPING	2007
FTC-093	Former POW Camp	FRA	BIOREMEDIATION - IN SITU GROUNDWATER	2010
FTC-012	LANDFILL 8 (1972-1973)	FRA	CAPPING	2012
FTC-033	Fmr Waste Oil/Solv USTs, Bldg 8000	IRA	IN-SITU SOIL TREATMENT	2012
FTC-006	LANDFILLS 2/3 (1960-1978)	FRA	CAPPING	2013
FTC-021	ABANDONED FIRE TRAINING AREA	FRA	BIOREMEDIATION - IN SITU GROUNDWATER	2013
FTC-056	FORMER UST SITE, BLDG 1382	FRA	REMOVAL	2013
FTC-011	LANDFILL 7 (1968-1978)	FRA	CAPPING	2014
FTC-026	PETE'S HILL	FRA	CAPPING	2014
FTC-083	North Specker Avenue Plumes	FRA	BIOREMEDIATION - IN SITU GROUNDWATER	2014
FTC-020	GRIT OIL PIT	FRA	BIOREMEDIATION - IN SITU GROUNDWATER	2015
FTC-023	FORMER USED/WASTE OIL STORAGE TANKS	FRA	BIOREMEDIATION - IN SITU GROUNDWATER	2015
FTC-033	Fmr Waste Oil/Solv USTs, Bldg 8000	FRA	BIOREMEDIATION - IN SITU GROUNDWATER	2015
FTC-058	FORMER VAPOR DEGREASER	FRA	BIOREMEDIATION - IN SITU GROUNDWATER	2015
PBA@Carson	PBA@Carson	FRA	OTHER	2015

Duration of IRP

Date of IRP Inception: 198210

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201609/203006

Date of IRP completion including Long Term Management (LTM): 204509

IRP Contamination Assessment

Contamination Assessment Overview

FTC's principal industrial operation has been the repair and maintenance of vehicles, aircraft, and equipment. Approximately 20 maintenance facilities (motor pools) have been constructed throughout FTC, including the consolidated maintenance facility at Bldg 8000, which performs specialized repair of tactical and heavy construction and engineering equipment and vehicles. In addition, since the 1960s, more than 300 underground storage tanks (UST) and aboveground storage tanks (AST) have been installed throughout the fort to store a variety of fuels (gasoline, jet propellant (JP)-4, JP-8, kerosene, diesel), and used/waste oils. To date, over 150 individual USTs have been removed and 36 have been upgraded to comply with 1998 state and US Environmental Protection Agency (USEPA) standards. In July 1992 investigations of these facilities detected low levels of tetrachloroethylene (PCE), trichloroethylene (TCE), trichloroethane (TCA), heavy metals, petroleum hydrocarbons, and several other substances in the soil and groundwater at some sites. Results of the investigations prompted the implementation of an installation-wide groundwater monitoring program.

In May 1994, the USEPA completed a Resource Conservation and Recovery Act (RCRA) facility assessment (RFA) of FTC. In September 1994, CDPHE augmented the RFA and in October 1995, based on sites identified in the RFA, they issued FTC a RCRA hazardous waste Part B permit designating the solid waste management units (SWMU) listed in this IAP. The FTC site numbers also listed in this IAP were designated in the US Army Environmental Hygiene Agency (USAEHA) Interim Final Report, Hazardous Waste Consultation No. 37-26-0185-89, Evaluation of SWMUs, Fort Carson, Colorado Springs, Colorado (1988).

The RCRA Part B permit identifies several potential landfill sites that were primarily used for sanitary and construction debris, open burning (OB)/open detonation (OD) units, a fire training area, battery acid neutralization shops (BANS), several vehicle washrack drainage areas, and several additional areas listed in the respective site description sections. The most widespread contaminants of concern are POLs, metals, inorganics, and volatile organic compounds (VOC) including, but not limited to, benzene, toluene, ethylbenzene, and xylenes (BTEX), TCE, PCE, TCA, and cis-1,2-dichloroethylene. Limited amounts of contamination other than POL and solvents have been discovered. Groundwater contamination above regulatory limits has been found at several sites. Based on the results of the ongoing groundwater monitoring program, there are no known hazardous constituents migrating off or onto the installation.

The current Army Environmental Database - Restoration (AEDB-R) for the FTC installation contains information on 17 sites [one of which carries information on the fiscal year (FY) 08 performance-based acquisition (PBA)]. The database numbering system does not accurately reflect the number of physical sites because one AEDB-R number refers to multiple site locations. FTC-023 includes 57 locations (SWMUs 55 - 111) of former used/waste oil USTs and each is listed in the RCRA permit as a separate SWMU. Most of the other active sites are currently being addressed under the FY08 PBA (FTC-06, -08, -09, -11, -12, -13, -20, -21, -26, -33, -58, -70, -75, -83, and -93). FTC-017 is in the final stages of completion.

In accordance with the RCRA Part B permit requirements, known or suspected constituents of concern identified for each SWMU in the permit were and are currently being addressed. Contaminants of concern identified above regulatory or risk-based screening criteria during the RFI process are listed in the 'STATUS' box for each SWMU. In cases where no RFI has been performed at the SWMU (i.e., active facilities), the contaminants listed in the 'STATUS' box reflect the suspected constituents of concern listed in the Part B permit.

Cleanup Exit Strategy

The exit strategy for FTC consists of an integrated approach through the use of a large PBA contract to consolidate and streamline the cleanup process. The PBA goes through FY20 and addresses the following Installation Restoration (IR) sites:

IR SWMUs: 2/3, 4, 5, 7, 8, 9, 13, 14, 16, 24, 36, 53, 164, 167, 168

IR sites: 6, 8, 9, 11, 12, 13, 20, 26, 58, 21, 75, 33, 70, 83, 93

These PBA sites include all significant IR cleanup projects at FTC and will move forward according to the PBA schedule, which continues through FY20. All sites are scheduled for response complete (RC) by the end of the PBA. Several sites will have continuing LTM requirements to address groundwater monitoring and landfill cap maintenance.

IRP Previous Studies

1992	Title	Author	Date
	UST Sites, Remedial Design	Not on Record	JUN-1992
	FTC-33, SWMU-53, Bldg. 8000, Pre-Design Study Report UST Sites	Woodward-Clyde Consultants	JUN-1992
	Bldg. 8000, Two 26K Gallon Used Oil Tanks	Not on Record	JUN-1992
1993	Multiple USTs Final A-E, Chemical Data Acquisition Plan/Work Plan for Site Assessment on Multiple USTs	Rust Environment and Infrastructure	MAR-1993
	Final Site Specific Safety, Health and Emergency Response Plan for Sludge Pit Excavation	Rust Environment and Infrastructure	JUN-1993
1994	Final A-E Chemical Data Acquisition Plan/Work Plan for Site Assessment on Multiple USTs	Rust Environment and Infrastructure	MAR-1994
	Final Site Safety and Health Plan, Grit/Oil Pit	Rust Environment and Infrastructure	MAR-1994
	Final Site Safety and Health Plan, Site Assessment on Multiple USTs	Rust Environment and Infrastructure	MAR-1994
	FTC-20, SWMU-13, Grit/Oil Pit Final A-E Work Plan	Rust Environment and Infrastructure	MAR-1994
	Final RCRA Facility Assessment for Fort Carson	SAIC	MAY-1994
	Design Concept Submittal	Rust Environment and Infrastructure	JUN-1994
	Pre-Final Design Analysis Report	Rust Environment and Infrastructure	JUL-1994
	Final Design Submittal, Vol.1: Design Analysis Report	Rust Environment and Infrastructure	AUG-1994
	Final Design Submittal, Vol.2: Specifics & Bid Schedule	Rust Environment and Infrastructure	AUG-1994
	Final Submittal Grit/Oil Pit Voluntary Corrective Action	Rust Environment and Infrastructure	AUG-1994
	Final Design Submittal, Vol.3: Cost Estimates and Construction Schedule	Rust Environment and Infrastructure	AUG-1994
	Final Sampling & Analysis Plan for Group A	Rust Environment and Infrastructure	AUG-1994
	Final Analytical Data Package Vol. 1-4, for Site Assessment on Multiple USTs	Rust Environment and Infrastructure	SEP-1994
	Programmatic Site Safety & Health Plan for Voluntary Site Assessment Health-Based Risk Assessment & Remedial Design	Rust Environment and Infrastructure	OCT-1994
	Draft Final, Rev 1, Sampling and Analysis and Site-specific Health & Safety Plan for Group B Sites	Rust Environment and Infrastructure	NOV-1994
	Final Sampling and Analysis Plan and Site-specific Health and Safety Plan for Equalization Basin	Rust Environment and Infrastructure	NOV-1994
	Final Sampling and Analysis and Site-specific Health & Safety Plan for Group B Sites	Rust Environment and Infrastructure	NOV-1994
	Sampling and Analysis Plan for Group B Sites (Delivery Order Specific)	Rust Environment and Infrastructure	NOV-1994
	Final Sampling and Analysis Plan for Group A Sites	Rust Environment and Infrastructure	NOV-1994
	Groundwater Development Photograph Log for Multiple USTs	Rust Environment and Infrastructure	NOV-1994
	FTC-6, SWMU-2, Landfill 2 Remedial Design Landfills 2,5 & 6 and Vapor Degreaser(Rev.1) (Delivery Order	Rust Environment and Infrastructure	DEC-1994

IRP Previous Studies

1994	Title	Author	Date
	Specific)		
	Site Safety and Health Plan, Former Fire Training Area	Rust Environment and Infrastructure	DEC-1994
	Site Safety and Health Plan, Voluntary Site Investigation and Health-Based Risk Assessment	Rust Environment and Infrastructure	DEC-1994
1995			
	Final Site Assessment Report for Multiple USTs	Rust Environment and Infrastructure	FEB-1995
	Final Analytical Data Package for Site Investigation at Group B Sites	Rust Environment and Infrastructure	MAR-1995
	Final QCSR for Site Investigations at Group B Sites	Rust Environment and Infrastructure	APR-1995
	Site Investigation at Group B Sites	Rust Environment and Infrastructure	APR-1995
	Executive Summary & Rev Table of Contents for Final Site Assessment Report for Multiple USTs	Foothill Engineering Consultants	JUN-1995
	Final, Analytical Data Package for Site Investigation at Group A Sites	Rust Environment and Infrastructure	JUN-1995
	Analytical Data Package for RFI at Landfills 2, 5 & 6 and Vapor Degreaser Site at Building 8000: Vol 1 & 2	Rust Environment and Infrastructure	JUL-1995
	RFIs at Group A Sites: Landfill 4, DRMO Hazardous Waste Storage Area, Vehicle Washrack Drainage	Rust Environment and Infrastructure	SEP-1995
	QCSR for RFIs at Group A Sites: Landfill 4, DRMO Hazardous Waste Storage Area, Vehicle Washrack Drainage	Rust Environment and Infrastructure	SEP-1995
	FLPM, Working Draft Field and Laboratory Manual for Fort Carson Army Installation	Rust Environment and Infrastructure	SEP-1995
	Site Safety and Health Plan, Grit/Oil Pit	Rust Environment and Infrastructure	SEP-1995
	FTC-58, SWMU-16, Vapor Degreaser, Design Analysis for Former Vapor Degreaser and Soil Vapor Extraction System	Rust Environment and Infrastructure	OCT-1995
	Final Report Fort Carson Landfill Survey	Geo-Centers	NOV-1995
	Revised Conceptual (30%) Design Engineering Design Analysis Landfill 2	Rust Environment and Infrastructure	NOV-1995
	Final Revision 2 RFI Work Plan, Grit/Oil Pit	Rust Environment and Infrastructure	NOV-1995
	Final Quality Control Summary Report for RFI at Group A Sites	Rust Environment and Infrastructure	NOV-1995
1996			
	Site-specific Safety & Health Plan Landfills 2, 5, 6 Cap Installation Program	Rust Environment and Infrastructure	JAN-1996
	Draft Final RFI Specific Site and Safety Health Plan Battery Acid Neutralization Shops, Bldgs. 8030, 8000, 8142	Foothill Engineering Consultants, Inc.	JAN-1996
	RFI Work Plan, Draft Final, Landfill 1 SWMU 1, FTC-5	Rust Environment and Infrastructure	JAN-1996
	Draft Final RFI Work Plan, Battery Acid Neutralization Shops, Building 8000, Building 8030, Building 8142 (inclusive of background soil sampling)	Rust Environment and Infrastructure	JAN-1996
	FTC-14, SWMU-10, Landfill 10, Draft Final, RFI Work Plan, Landfill 10	Rust Environment and Infrastructure	JAN-1996

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1996

Title	Author	Date
RFI Report and Baseline Human Health Risk Assessment for Group A Sites	Rust Environment and Infrastructure	JAN-1996
Contractor Programmatic Site Safety & Health Plan for RFI Remedial Design Activities	Rust Environment and Infrastructure	FEB-1996
Revision 2, Program Site Safety & Health Plan for RFI Remedial Design Activity	Rust Environment and Infrastructure	FEB-1996
Quarterly Groundwater Monitoring Program, Final-Rev 1, Manual/Site-specific Health and Safety Plan	Rust Environment and Infrastructure	MAR-1996
FTC-75, SWMU-36, Old Central Washrack, Draft Final RFI Work Plan, Old Central Washrack	Rust Environment and Infrastructure	APR-1996
Final Sampling Plans for Quarterly Groundwater Monitoring Program - 1996	Rust Environment and Infrastructure	APR-1996
FTC-13, SWMU-9, Landfill 9, Draft Final RFI Work Plan, Landfill 9	Rust Environment and Infrastructure	APR-1996
Draft Final RFI Work Plan, Landfill 7	Rust Environment and Infrastructure	APR-1996
Landfill 5 Construction Specifications	Rust Environment and Infrastructure	APR-1996
Final Design Analysis; Landfill 5	Rust Environment and Infrastructure	APR-1996
Final Landfill 5 ET Cap Annual Performance Monitoring Report for 2002	Rust Environment and Infrastructure	APR-1996
FTC-13, SWMU-9, Landfill 9 Draft Final RFI Work Plan, Landfill 9	Rust Environment and Infrastructure	APR-1996
Construction Specifications Landfill 2	Rust Environment and Infrastructure	MAY-1996
Final Design Analysis; Landfill 2	Rust Environment and Infrastructure	MAY-1996
Final Field and Laboratory Procedures Manual for Fort Carson Army Installation, Rev 0	Rust Environment and Infrastructure	MAY-1996
Analytical Data Package	Rust Environment and Infrastructure	MAY-1996
Fort Carson Community Involvement Plan	Rust Environment and Infrastructure	MAY-1996
Analytical Data Package - Volume 1 & 2	Rust Environment and Infrastructure	JUN-1996
Draft Final RFI Report, Grit/Oil Pit	Rust Environment and Infrastructure	JUN-1996
NFA Request Landfill 12	Rust Environment and Infrastructure	JUN-1996
Draft Final RFI Work Plan, Sludge Trench Pit	Rust Environment and Infrastructure	JUL-1996
Draft Final RFI Work Plan, Building 8000, Former Waste Oil/Solvent USTs	Rust Environment and Infrastructure	JUL-1996
Final Analytical Data Packages, Quarterly Groundwater Monitoring Program 1996	Rust Environment and Infrastructure	JUL-1996
Final No Further Action Request for SWMUs 93, 94, 95, and 97 through 106, Former Used/Waste Oil Above Ground Storage Tanks	Rust Environment and Infrastructure	JUL-1996
QCSR, Fire Training Area	Rust Environment and Infrastructure	AUG-1996
Rev. 1 QCSR, Grit/Oil Pit	Rust Environment and Infrastructure	AUG-1996
Analytical Data Package for Landfills 2, 5, & 6 (for samples collected June 1995 to May 1996)	Rust Environment and Infrastructure	SEP-1996

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1996	Title	Author	Date
	Analytical Data Package - Former Vapor Degreaser	Rust Environment and Infrastructure	OCT-1996
	Final RFI Work Plan on Multiple USTs	Foothill Engineering Consultants	OCT-1996
	Draft Final Voluntary Site Investigation and Risk Assessment Report for Group B Sites	Rust Environment and Infrastructure	OCT-1996
	Draft Final Voluntary Site Inv. and Risk Assessment Report for Group A Sites	Rust Environment and Infrastructure	OCT-1996
	QCSR - Landfills 2, 5, & 6	Rust Environment and Infrastructure	OCT-1996
	Letter Work Plan for Fort Carson, Building 8000	Rust Environment and Infrastructure	NOV-1996
	Final Sampling Plans for Quarterly Groundwater Monitoring Program - 1997	Rust Environment and Infrastructure	DEC-1996
	Draft Final Cap Installation Work Plan Landfills 5 & 6	Rust Environment and Infrastructure	DEC-1996
1997	Final Voluntary Assessment Work Plan for Bldg. 749- West Drainage Ditch	Rust Environment and Infrastructure	JAN-1997
	Additional Direct Push Groundwater Sampling Activities, Building 749 - West Drainage Ditch	Rust Environment and Infrastructure	MAR-1997
	Rationale for Additional Groundwater Sampling Activities, Bldg. 749- West Drainage Ditch	Rust Environment and Infrastructure	MAR-1997
	Final Field and Laboratory Procedures Manual for Fort Carson Army Installation	Rust Environment and Infrastructure	MAR-1997
	Final Field and Laboratory Procedures Manual for Fort Carson Army Installation	Rust Environment and Infrastructure	APR-1997
	Final Analytical Data Packages, Quarterly Groundwater Monitoring Program 1997	Rust Environment and Infrastructure	APR-1997
	Possible Monitoring Well Locations for Foothills Engineering Consultants Activities	Foothills Engineering Consultants	APR-1997
	Draft Final RFI Work Plan Addendum, Grit/Oil Pit	Rust Environment and Infrastructure	MAY-1997
	Final Newly Identified SWMU Report, North Specker	Rust Environment and Infrastructure	MAY-1997
	Construction Activities at Landfills 5 and 6 (Stormwater Pollution Prevention Plan)	Rust Environment and Infrastructure	JUN-1997
	Letter Report for Relative Risk Groundwater Sampling at Selected Sites completed during Sept. 1996	Rust Environment and Infrastructure	JUL-1997
	Draft Final Gradefill Work Plan for Landfills 5 & 6	Rust Environment and Infrastructure	JUL-1997
	Final Analytical Data Packages, Quarterly Groundwater Monitoring Program 1996	Rust Environment and Infrastructure	JUL-1997
	Draft Final RFI Work Plan, Landfill 11	Rust Environment and Infrastructure	JUL-1997
	Preconstruction Survey Report, Landfill 5	Rust Environment and Infrastructure	AUG-1997
	Final Quarterly Groundwater Monitoring Program, 1996, First Quarter, Vol 1	Rust Environment and Infrastructure	SEP-1997
1998	Additional ET Cap Modeling Landfills 5 & 6	Rust Environment and Infrastructure	JAN-1998
	Draft Final RFI Work Plan, Bldg. 8000, Former Waste	Rust Environment and Infrastructure	JAN-1998

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1998

Title	Author	Date
Final Sampling Plans for Quarterly Groundwater Monitoring Program - 1998	Rust Environment and Infrastructure	JAN-1998
Draft Final Gradefill Work Plan Landfill 2	Rust Environment and Infrastructure	JAN-1998
Draft Final RFI Report, Landfill 12	Rust Environment and Infrastructure	JAN-1998
Revised Final Sampling and Analysis Plan for Remedial Design for Landfills 2, 3, 5 and 6 and Vapor Degreaser	Rust Environment and Infrastructure	JAN-1998
Final Analytical Data Package for Site Investigation at Group B Sites	Rust Environment and Infrastructure	MAR-1998
Final Programmatic Construction Quality Assurance/Quality Control Plan	Rust Environment and Infrastructure	APR-1998
Analytical Data Package - Volume 2	Rust Environment and Infrastructure	MAY-1998
Results of Soil-Gas Pilot Test and Letter Work Plan for Additional Investigation Activities at North Specker	Rust Environment and Infrastructure	JUN-1998
Final Analytical Data Packages, Quarterly Groundwater Monitoring Program, 1996, Second Quarter, Vol. 2	Rust Environment and Infrastructure	JUN-1998
Final RFI Work Plan, Former Used/Waste Oil Tanks - 11 Site	Rust Environment and Infrastructure	JUN-1998
Draft Final RFI Work Plan, Former Used/Waste Oil Tanks and Oil/Water Separators- 33 Site, Rev. 1	Rust Environment and Infrastructure	JUN-1998
Gas Probe Monitoring Results for Landfills 2, 5 & 6 (April-June 1998)	Rust Environment and Infrastructure	JUN-1998
Draft Final, Rev. 1 RFI Work Plan, Former Used/Waste Oil Tanks and Oil/Water Separators- 33 Site	Rust Environment and Infrastructure	JUL-1998
Final Quarterly Groundwater Monitoring Program, 1996, Third Quarter, Vol 3	Rust Environment and Infrastructure	SEP-1998
FTC-45A, 45B, 45C, SWMU-28, 29, 30, Bldgs. 8000, 8030, 8142 Battery Acid Neutralization Shops, Final Work Plan, Battery Acid Neutralization Shops	Rust Environment and Infrastructure	SEP-1998
Final RFI Summary and Letter Work Plan Addendum, Bldg 8000	Rust Environment and Infrastructure	OCT-1998
Final RFI Work Plan, Landfill 12	ECC	OCT-1998

1999

Final Sampling Plans for Quarterly Groundwater Monitoring Program, 1999, Quarters 1 & 3	Rust Environment and Infrastructure	JAN-1999
Final Letter Work Plan for Investigating Bldgs. 1860, 6290, 8300, 1882, 1515, 9648	Rust Environment and Infrastructure	JAN-1999
FTC-43, SWMU-51, DIO Draft Final Revision 1 RFI Work Plan for DIO Hazardous Waste Storage Area	Rust Environment and Infrastructure	FEB-1999
Draft Final Motor Pool Cap Work Plan, Landfill 5	Rust Environment and Infrastructure	FEB-1999
Final Quarterly Groundwater Monitoring Program, 1996, Fourth Quarter, Vol. 4	Rust Environment and Infrastructure	MAR-1999
Draft Final ET Cap Work Plan Landfills 5 & 6	Rust Environment and Infrastructure	MAR-1999
Final RFI Report, Range 1, Open Burn Grounds	ECC	MAY-1999
Final Design Analysis for Landfill 5, Motor Pool Cap	HLA	JUN-1999
Draft Final RFI for Group A Sites	Rust Environment and Infrastructure	JUN-1999
Final Analytical Data Packages, Quarterly Groundwater Monitoring Program, 1999	Rust Environment and Infrastructure	JUN-1999

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1999

Title	Author	Date
Final Motor Pool Cap Work Plan, Landfill 5	Rust Environment and Infrastructure	JUN-1999
Draft Final Phase I RFI Report, Former Used/Waste Oil Tanks - 11 Site	Rust Environment and Infrastructure	JUL-1999
Letter Work Plan Addendum for Northern Manholes, Bldg. 8000	DECAM/Rust Environment and Infrastructure	JUL-1999
Draft Final QCSR, Phase I RFI Former Used/Waste Oil Tanks - 11 Site	Rust Environment and Infrastructure	JUL-1999
Site-specific Safety & Health Plan, Petroleum Hydrocarbon Site Drilling & Remediation	Earth Tech	AUG-1999
Final Letter Work Plan for Subsurface Investigations at Heating Oil Plants, Buildings 1860 & 6290	Rust Environment and Infrastructure	AUG-1999
Draft Final RFI Report for Group B Sites	Rust Environment and Infrastructure	SEP-1999
Draft Final Letter Work Plan Addendum, Former Used/Waste Oil Tanks and Oil/Water Separators - 33 Site, Modification to Field Sampling for the Former Oil/Water Separator Discharge Locations	DECAM/Rust Environment and Infrastructure	SEP-1999
Draft Final Rev. 1, Phase I CMS Work Plan, Grit Oil Pit	Rust Environment and Infrastructure	OCT-1999
Draft Final Oil/Water Separator Removal Work Plan Fire Training Area	Rust Environment and Infrastructure	NOV-1999
Draft Site Close Report - Bldg. 749, RFI on Numerous USTs	Rust Environment and Infrastructure	NOV-1999
FTC-8, SWMU-4, Landfill 4, Draft Final Revision 1, RFI Work Plan	Rust Environment and Infrastructure	DEC-1999

2000

Draft Final RFI Work Plan, Landfill 10	Earth Tech	JAN-2000
Final Sampling Plans for Quarterly Groundwater Monitoring Program - 2000	Earth Tech	JAN-2000
Draft Final ET Cap Work Plan, Landfill 5	Earth Tech	MAR-2000
Final Certification Report Landfill 5 Motor Pool Cap	Golder Associates, Inc.	MAR-2000
Final RFI Report, Equalization Basin	Rust Environment and Infrastructure	MAR-2000
Draft Final SWMU 167 Summary report, North Specker Avenue Groundwater Plumes	Earth Tech	MAR-2000
Integrated Solid Waste Management Plan	Earth Tech	MAR-2000
Analytical Data Package - Volume 3	Earth Tech	APR-2000
Analytical Data Package - Volume 3	Earth Tech	APR-2000
Final Letter Work Plan for Installing Additional Temporary Direct-push Wells Grit/Oil Pit and Landfill 1 CMA - Phase 1	Earth Tech	MAY-2000
Final RFI Report, Grit/Oil Pit	Earth Tech	MAY-2000
Final Letter Work Plan for Supplemental Background Soil Sampling	Earth Tech	JUN-2000
Final QCSR - Addendum to RFI Report	Earth Tech	JUN-2000
Final Letter Work Plan Addendum for Former Used/Waste Oil Tanks- 33 Site, Re-sampling Associated w/ Quanterra Environmental Services	Earth Tech	JUN-2000

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2000

Title	Author	Date
Performance		
SWMU-111, Final Letter Work Plan, Subsurface Investigation - Bldg. 8110	Earth Tech	JUN-2000
Used/Waste Oil Tanks- 33 Site, Re-sampling Associated w/ Quanterra Environmental Services Performance	Earth Tech	JUN-2000
Final Quality Control Summary Report RFI on Multiple USTs	Foothills Engineering Consultants	JUL-2000
Letter Work Plan Addendum - Former Used/Waste Oil Tanks and Oil/Water Separators - Buildings 2735, 2840, 9609, and 9620	Earth Tech	JUL-2000
SWMU-110: Final Letter Work Addendum, Former Used/Waste Oil Tanks - Bldg. 2427	Earth Tech	JUL-2000
DIO Analytical Data Package	Earth Tech	JUL-2000
SWMU-110, 72- Final Letter Work Plan Addendum, Former Used/Waste Oil Tanks - Bldg. 2427 and 2735	Earth Tech	JUL-2000
SWMU-74,75 - Final Letter Work Plan Addendum, Former Used/Waste Oil Tanks and Oil/Water Separators - Bldg. 2840 and Bldg. 2940	Earth Tech	JUL-2000
MatcomTM Suitability Report	Harding Lawson	AUG-2000
Final Construction Report Landfill 5 Motor Pool Cap	Harding Lawson Associates	AUG-2000
Draft Final QCSR, Former Vapor Degreaser	Earth Tech	AUG-2000
Fort Carson Community Involvement Plan	Earth Tech	AUG-2000
Draft Final RFI Work Plan, Bldg. 8001, Former Waste Oil/Solvent USTs	Earth Tech	AUG-2000
Final Letter Work Plan for the Installation of Additional Soil Borings - Bldg. 6290	Earth Tech	SEP-2000
Final Letter Work Plan for Additional Subsurface Investigation, FTC 83, SWMU 167	Earth Tech	SEP-2000
Interim Report, Subsurface Investigation and Pilot Test Installation	Earth Tech	NOV-2000
Draft Final Newly Identified SWMU Report - POW Camp	Earth Tech	DEC-2000

2001

Final Sampling Plans for Quarterly Groundwater Monitoring Program, 2001	Earth Tech	JAN-2001
Final Certification Report Landfill 5 Motor Cap	Golder Associates, Inc.	FEB-2001
Module II, Background Groundwater Proposed Final Well Selection for Background Groundwater Data Set	Earth Tech	MAR-2001
Draft Final Phase I CMS Report, Landfill 1 and Grit/Oil Pit	Earth Tech	MAR-2001
Draft Rev. 2 RFI Work Plan, Landfill 11	Earth Tech	MAR-2001
Draft Final RFI Report Landfill 5	Earth Tech	MAR-2001
Final Site Characterization Reports, Bldg. 1860 and Bldg. 6290	Earth Tech	APR-2001
Draft Final RFI Report Vehicle Washrack Drainage Ditches	Earth Tech	MAY-2001
Draft Final RFI Report Bldg. 301 Drainage Ditch	Earth Tech	MAY-2001

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2001

Title	Author	Date
Final RFI Work Plan, BECS	Earth Tech	MAY-2001
Final Letter Work Plan for Addition Subsurface Investigation, FTC 83, SWMU 167	Earth Tech	MAY-2001
Draft Final RFI Work Plan for Additional Surface Soil Sampling, DIO	Earth Tech	JUN-2001
Draft Final Phase II CMS Work Plan, Landfill 1 and Grit/Oil Pit	Earth Tech	JUN-2001
SWMU-84, Draft Final Letter Work Plan Addendum, Former Used/Waste Oil Tanks - Bldg. 8300	Earth Tech	JUN-2001
Draft Final Oil/Water Separator Removal Work Plan Fire Training Area	Earth Tech	JUN-2001
Draft Final Rev. 1 RFI Report DIO	Earth Tech	JUL-2001
Draft Final Oil/Water Separator Removal Work Plan Addendum Fire Training Area	Earth Tech	JUL-2001
Final RFI Report DRMO Hazardous Waste Storage Facility	Earth Tech	JUL-2001
Final Interim Corrective Measure Work Plan, Bldg. 8000	Earth Tech	AUG-2001
Final Phase II CMS Work Plan, Landfill 1 and Grit/Oil Pit	Earth Tech	AUG-2001
Final Quarterly Site Specific Monitoring Program, 4th Quarter 2000	Earth Tech	AUG-2001
Final Letter Work Plan Range 1, Open Burning Grounds	Earth Tech	SEP-2001
Draft Final RFI Work Plan, Landfill 8	Earth Tech	SEP-2001
Final Phase I CMS Summary Report, Landfill 1 and Grit/Oil Pit	Earth Tech	SEP-2001
Draft Final Conceptual Removal Plan, Range 1 Concrete Basin	Earth Tech	SEP-2001
Draft Final RFI Report, Landfill 11	Earth Tech & Harding ESE	OCT-2001
Final Work Plan, Background Groundwater Data Set	Earth Tech	OCT-2001
Final Phase I CMS Summary Report, Landfill 1 and Grit/Oil Pit	Earth Tech	OCT-2001
Final Phase II CMS Work Plan, Landfill 1 and Grit/Oil Pit	Earth Tech	OCT-2001
Draft Final Evaluation of Background Soil Data for Fort Carson	Earth Tech	NOV-2001
Final RFI Report, Demolition Area	Earth Tech	NOV-2001
FTC-43, SW051 DIO Analytical Data Package Addendum	Earth Tech	DEC-2001
Final, Revision 1, Oil/Water Separator Removal Work Plan Addendum Fire Training Area	Earth Tech	DEC-2001
Final Construction Report Landfill 5 ET Cap	Earth Tech	DEC-2001

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Final Site Characterization Report Landfill 5	HLA	JAN-2002
Final Revision 1 RFI Work Plan, Land Spreading Field	Earth Tech	JAN-2002
Final QCSR Addendum DIO Hazardous Waste Storage Area	Earth Tech	JAN-2002
Final QCSR DIO Hazardous Waste Storage Area	Earth Tech	JAN-2002

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2002

Title	Author	Date
Final RCRA Facility Investigation Report DIO Hazardous Waste Storage Area	Earth Tech	JAN-2002
Draft Final QCSR/ADP, POW Camp	Earth Tech	JAN-2002
Draft Final RFI Work Plan, Pete's Hill Dump	Earth Tech	JAN-2002
Final QCSR, Battery Acid Neutralization Shops	Earth Tech	JAN-2002
Final RFI Report, Battery Acid Neutralization Shops	Earth Tech	JAN-2002
Draft Final Landfill 5 ET Cap Annual Performance Monitoring Report for 2001	Earth Tech	FEB-2002
Draft Final Pilot Vapor Extraction Treatability Study Report, Grit/Oil Pit	Earth Tech	MAR-2002
Draft Final RFI Work Plan Addendum, BECS	Earth Tech	MAR-2002
Final ET Cap Work Plan, Landfill 5	Earth Tech	MAR-2002
Final Development of Site-wide RBCs	Earth Tech	APR-2002
Draft Final Module III, Human Health RBCs, Development of Site-wide Risk Concentrations	Earth Tech	APR-2002
Draft Final Revision 1 RFI Report, Range 1A	Earth Tech	APR-2002
Final Former Used/Waste Oil Above Ground Storage Tank Legal Descriptions	Earth Tech	APR-2002
Final QCSR Addendum, Range 1A	Earth Tech	APR-2002
SWMU-84 Draft Letter Work Plan Addendum, Former Used/Waste Oil Tanks - Bldg. 8300 (Paragon Analytics Chiller Malfunction Resampling)	Earth Tech	APR-2002
Final Former Used/Waste Oil Above Ground Storage Tank Legal Descriptions	Earth Tech	APR-2002
Final RFI Work Plan Landfill 8	Earth Tech	MAY-2002
Draft Final 2nd Quarter 2001, Groundwater Sampling Results, Landfill 5	Earth Tech	MAY-2002
Module V, ECO, Draft Final Ecological Reconnaissance of B Ditch, Clover Ditch, and Central Unnamed Ditch	Earth Tech, engineering environmental Management, Inc.	MAY-2002
Draft Final Risk Based Evaluation Procedures Manual Module 1, Background Soil	Earth Tech	JUN-2002
Final Pilot Soil Vapor Extraction Treatability Study Report, Grit/Oil Pit	Earth Tech	JUN-2002
Final QCSR, Phase I RFI, Former Used/Waste Oil Tanks - 11 Sites	Earth Tech	JUL-2002
Final Quarterly Site-specific Monitoring Program, 1st Quarter 2001	Earth Tech	JUL-2002
Draft Proposed Methodology, Ecological Risk Assessment	Earth Tech	JUL-2002
Draft Final CMS Work Plan Landfill 5	Earth Tech	JUL-2002
SWMU-84 Draft Final RFI Addendum, Former Used/Waste Oil Tanks - Bldg. 8300	Earth Tech	AUG-2002
Draft Final Certification Report, Landfill 5	Golder Associates, Inc.	AUG-2002
Draft Final QCSR, FTC 83, SWMU 167	Earth Tech	SEP-2002
Final, Rev 1, Risk-Based Evaluation Procedures	Earth Tech	OCT-2002

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2002

Title	Author	Date
Manual, Module II, Sitewide Background Data Set for Groundwater		
Final RFI Report Vapor Degreaser	Earth Tech	OCT-2002
Draft Final Letter Work Plan for Landfill 5 Soil Gas Investigation	Earth Tech	OCT-2002
Draft Final Quarterly Site-specific Monitoring Program, 2nd Quarter 2001 - 2nd Quarter 2002	Earth Tech	NOV-2002
Draft Final, CMS Workplan Landfill 5	Earth Tech	NOV-2002
Draft Final Quarterly Site-specific Monitoring Program, 3rd Quarter 2002	Earth Tech	DEC-2002
Draft Final RFI Report, Sludge Trench Pit	Earth Tech	DEC-2002
Draft Final, Rev 1 RFI Report, North Specker Avenue Groundwater Plumes	Earth Tech	DEC-2002
Draft Final, Revision 1, RFI Report, Sludge Trench Pit	Earth Tech	DEC-2002

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Draft Final Revision 2 RFI Report	Harding Lawson Associates	JAN-2003
Draft Final QCSR Addendum 2	Harding Lawson Associates	JAN-2003
Final QCSR, Sludge Trench Pit	Earth Tech	JAN-2003
Final, Rev. 1, Risk-Based Evaluation Procedures Manual, Module IV, Development of Groundwater Protection Levels (GPLs)	Earth Tech	JAN-2003
Draft Final Landfill 5 ET Cap Annual Performance Monitoring Report for 2002	Earth Tech	FEB-2003
Supplemental Site Investigation Report, UST Sites	Rust Environment and Infrastructure	FEB-2003
Draft Final, Revision 1 Landfill 5 Soil Gas Investigation Work Plan	Earth Tech	MAR-2003
Final Risk-Based Evaluation Procedures Manual, Module III, Site-wide RBCs, Approved	Earth Tech	MAR-2003
Interim Remedial Measure, Initial Summary Report (SVE system), Grit/Oil Pit	Earth Tech	MAY-2003
SWMU-83 - Draft Final Phase I RFI Report, Former Used/Waste Oil Tanks - Bldg. 8200	Earth Tech	MAY-2003
SWMU-111, Final Letter Work Plan Addendum, Former Used/Waste Oil Tanks, Bldg. 8110	Earth Tech	MAY-2003
SWMU-85 - Draft Final Phase I RFI Report, Former Used/Waste Oil Tanks - Bldg. 8930	Earth Tech	MAY-2003
SWMU-61 - Draft Final & Final Phase I RFI Report, Former Used/Waste Oil Tank - Bldg. 1515	Earth Tech	MAY-2003
Final Certification Report Landfill 5 ET Cap	Harding Lawson Associates	MAY-2003
Final Construction Report Landfill 5 ET Cap	Earth Tech	MAY-2003
Draft Final RFI Work Plan, Former Long-Term Hazardous Waste Storage Area	Earth Tech	MAY-2003
SWMU-75, 84, 110 - Draft QCSR Addendum, Former Used/Waste Oil Tanks - 11 Sites	Earth Tech	JUN-2003
Final Landfill 5 Soil Gas Investigation Work Plan	Earth Tech	JUN-2003
SWMU-67 Draft Final Phase I RFI Report, Former Used/Waste Oil Tank, Bldg. 2239	Earth Tech	JUN-2003

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2003

Title	Author	Date
SWMU-110 Draft Final Phase I RFI Report, Former Used/Waste Oil Tanks - Bldg. 2427	Earth Tech	JUN-2003
SWMU-81 Draft Final Phase I RFI Report, Former Used/Waste Oil Tanks - Bldg. 8142	Earth Tech	JUN-2003
SWMU-82 Draft Final Phase I RFI Report, Former Used/Waste Oil Tanks - Bldg. 8152	Earth Tech	JUN-2003
SWMU-80 Draft Final Phase I RFI Report, Former Used/Waste Oil Tank - Bldg. 3874	Earth Tech	JUN-2003
Final Letter Work Plan Addendum, Former Used/Waste Oil Tanks - Building 8110	Earth Tech	JUN-2003
Final Quarterly Site-specific Monitoring Program, 2nd Quarter 2001 - 2nd Quarter 2002	Earth Tech	JUN-2003
SWMU-111 Draft Final Phase I RFI Report, Former Used/Waste Oil Tanks - Bldg. 8110	Earth Tech	JUL-2003
SWMU-83 Final Phase I RFI Report, Former Used/Waste Oil Tanks - Bldg. 8200	Earth Tech	JUL-2003
SWMU-84 Draft Final Phase I RFI Report, Former Used/Waste Oil Tanks - Bldg. 8300	Earth Tech	JUL-2003
SWMU-75 Draft Final Phase I RFI Report, Former Used/Waste Oil Tanks - Bldg. 2940	Earth Tech	JUL-2003
Draft Final RFI Landfill 8	Earth Tech	JUL-2003
Draft Final RFI Work Plan CLA	Earth Tech	JUL-2003
Draft Final Work Plan for Evapotranspiration Cap, Soil Investigation at Landfill 5	Earth Tech	JUL-2003
FTC-5, 7, 11, 20, 26, SWMU-1, 7, 13, 14, 17, 18 Combined Landfill Area Draft Final Interim Closure Plan CLA	Earth Tech	JUL-2003
Final Groundwater and Soil Gas Monitoring Report Third Quarter 2002	Earth Tech	AUG-2003
Draft Final, Revision 1 Post-Construction Groundwater and Soil Gas Monitoring Plan Landfill 5	Earth Tech	AUG-2003
Draft Final Groundwater and Soil Gas Monitoring Report 1st Quarter 2003 Landfill 5	Earth Tech	AUG-2003
Final Indoor Air Assessment Work Plan	Earth Tech	AUG-2003
Draft Final RFI Work Plan Addendum, Former Lime Pit at Bldg. 8110	Weston	AUG-2003
Draft Final Initial Groundwater Investigation Work Plan Landfill 5	Earth Tech	SEP-2003
Draft Final, Rev. 1, Risk-Based Evaluation Procedures Manual, Module V, Ecological Risk Procedures Manual	Earth Tech	SEP-2003
Final, Rev 2, Risk-Based Evaluation Procedures manual, Module IV, Development of GPLs	Earth Tech	SEP-2003
Final RFI Work Plan Addendum, Range 1	Earth Tech	SEP-2003
Draft Final RFI Work Plan Addendum, Landfill 2	Earth Tech	SEP-2003
Final Interim Closure Plan CLA	Earth Tech	SEP-2003
Final RFI Work Plan CLA	Earth Tech	SEP-2003
Final Work Plan for ET Cap Soil Investigation at Landfill 5	Earth Tech	SEP-2003
Final Risk-Based Evaluation Procedures Manual, Module IV, Development of GPLs	Earth Tech	OCT-2003

IRP Previous Studies

2003

Title	Author	Date
Programmatic Site Safety and Health Plan for RFI and Remedial Design Activities	Earth Tech	OCT-2003
Final Risk-Based Evaluation Procedures Manual, Module II, Sitewide Background Data Set for Groundwater	Earth Tech	OCT-2003
Final Groundwater and Soil Gas Monitoring Report, First Quarter 2003, Landfill 5	Earth Tech	OCT-2003
Final Post-Construction Groundwater and Soil Gas Monitoring Plan, Landfill 5	Earth Tech	OCT-2003
Final Initial Groundwater Investigation Work Plan Landfill 5	Earth Tech	OCT-2003
Final RFI Work Plan Addendum, Range 1	Earth Tech	NOV-2003
Final Landfill 5 ET Cap Annual Performance Monitoring Report for 2001	Earth Tech	DEC-2003

2004

October 2003 Indoor Air Sampling Analytical Results for North Specker	Earth Tech	JAN-2004
Draft Final RFI Work Plan, Landfill 9	Earth Tech	JAN-2004
Draft Final Landfill 5 Phase I Investigation for ET Cap at Landfill 5	Golder Assoc.	JAN-2004
SWMU-58 Draft Final RFI Report, Former Used/Waste Oil Tanks Bldg. 218	Earth Tech	FEB-2004
SWMU-57 Draft Final RFI Report, Former Used/Waste Oil Tanks Bldg. 635	Earth Tech	FEB-2004
Draft Final Landfill 5 ET Cap GW and Soil Gas Monitoring Report for Nov. 200	Earth Tech	FEB-2004
Draft Final Monitoring and Maintenance Plan for Landfill 4	Earth Tech	FEB-2004
Draft Final RFI Report, Land Spreading Field	Earth Tech	FEB-2004
SWMU-110 - Draft Final Letter Work Plan Addendum, Former Used/Waste Oil Tanks - Bldg. 2427	Earth Tech	FEB-2004
SWMU-84 - Draft Final Letter Work Plan Addendum, Former Used/Waste Oil Tanks - Bldg. 8300	Earth Tech	FEB-2004
SWMU-111 - Draft Final Letter Work Plan Addendum, Former Used/Waste Oil Tanks Bldg. 8110	Earth Tech	MAR-2004
Draft Final Supplemental RFI Work Plan, Bldg. 8000 - Former Waste Oil/Solvent Underground Storage Tanks	Earth Tech	MAR-2004
Final RFI Work Plan, Former POW Camp	Earth Tech	MAR-2004
Final Phase I RFI Report, Former Used/Waste Oil Tank - Building 8110	Earth Tech	MAR-2004
Draft Final Landfill 5 ET Cap Annual Performance Monitoring Report for 2003	Earth Tech	MAR-2004
Module VI, NFA, Draft Final, Risk-Based Evaluation Procedures Manual, Module IV, Methodology for Identifying No Further Action at Solid Waste Management Units	Earth Tech	MAR-2004
Draft Final RFI Report, Former Long-Term Hazardous Waste Storage Area	Earth Tech	MAR-2004
Final RFI Report, Landfill 11	Earth Tech & Harding ESE	MAR-2004
Final Landfill 5 ET Cap Annual Performance Monitoring Report for 2002	Earth Tech	APR-2004

IRP Previous Studies

2004

Title	Author	Date
Draft Final Quarterly Monitoring Report, 4th Quarter 2003	Earth Tech	APR-2004
Final Risk Based Evaluation Procedures Manual Module 1, Background Soil	Earth Tech	APR-2004
Draft Final CMS Work Plan for North Specker Avenue	Earth Tech	APR-2004
SWMU-96 - Draft Final RFI Report, Former Used/Waste Oil Tank - Bldg. 1404	Earth Tech	APR-2004
Landfill 5 Evapotranspiration Cap Column Lysimeters Precision and Accuracy	Earth Tech	APR-2004
Landfill 5 Evapotranspiration Cap Monthly Performance Monitoring Modification, Landfill 5	Earth Tech	APR-2004
Landfill 5 Evapotranspiration Cap Monthly Performance Monitoring Corrective Actions	Earth Tech	APR-2004
Final Landfill 5 ET Cap Annual Performance Monitoring Report for 2003	Earth Tech	APR-2004
Draft Final RFI Report, Old Central Washrack	Earth Tech	APR-2004
Draft Final RFI, BECS	Earth Tech	APR-2004
SWMU-85 - Draft Final Phase I RFI Report, Former Used/Waste Oil Tank Bldg. 8930	Earth Tech	MAY-2004
SWMU-91 - Draft Final Phase I RFI Report, Former Used/Waste Oil Tank Bldg. 9628	Earth Tech	MAY-2004
Request for Reduction in Groundwater Monitoring Requirements, Landfill 5	Earth Tech	MAY-2004
Final RFI Work Plan Addendum, Landfill 2	Earth Tech	MAY-2004
Draft Final Interim Remedial Action, Source Removal Work Plan, Grit/Oil Pit	Earth Tech	MAY-2004
Final Quarterly Monitoring Report, 4th Quarter 2003, CLA	Earth Tech	MAY-2004
Draft Final Quarterly Monitoring Report, 2nd Quarter 2004	Earth Tech	JUN-2004
Draft Final Quarterly Monitoring Report, 1st Quarter 2004	Earth Tech	JUN-2004
Draft Final RFI Report Addendum, Sludge Trench Pit	Earth Tech	JUN-2004
Final Letter Work Plan Addendum, Land Spreading Field	Earth Tech	JUN-2004
Draft Final RFI CLA	Earth Tech	JUN-2004
Draft Final Former Grit/Oil Pit IRA Summary Report	Earth Tech	JUN-2004
Final Interim Remedial Action, Source Removal Work Plan, Grit/Oil Pit	Earth Tech	JUN-2004
Final Quarterly Groundwater Monitoring Letter Report-2003 Annual Basewide	Earth Tech	JUL-2004
Final RFI CLA	Earth Tech	AUG-2004
Final Risk Based Evaluation Procedures Manual Module V, Tier I	Earth Tech	OCT-2004
Final Risk Based Evaluation Procedures Manual Module V, Tier II	Earth Tech	OCT-2004
Draft Final RFI Report - Building 1882	Earth Tech	OCT-2004
Final LF5 Groundwater & Soil Gas Monitoring Plan, LF5	Earth Tech	OCT-2004

IRP Previous Studies

2004

Title	Author	Date
Final Results of ET Cap Inv., LF5	Golder Associates, Inc.	OCT-2004
Final RFI Report, Former Long-Term Hazardous Waste Storage Area	Earth Tech	NOV-2004
Draft Final Quarterly Monitoring Report, 3rd Quarter 2004	Earth Tech	DEC-2004
Draft Final Letter Work Plan Addendum - Building 301	Earth Tech	DEC-2004
Draft Final Existing Cover Evaluation Work Plan, Landfill 8	URS	DEC-2004
NFA Request, Range 1A	Earth Tech	DEC-2004

2005

Final Letter Work Plan Addendum - Bldg 1382	Earth Tech	JAN-2005
Final Letter Work Plan Addendum - 1692	Earth Tech	JAN-2005
Draft Final RFI Report, Bldg 1302	Earth Tech	JAN-2005
CDPHE Approval of NFA Request and Addendum, Range 1A	Earth Tech	JAN-2005
NFA Request Addendum, Range 1A	Earth Tech	JAN-2005
LF5 ET Cap Monthly Performance Monitoring CAs Summary	Earth Tech	JAN-2005
Final Quarterly Monitoring Report, 3rd Quarter 2004	Earth Tech	JAN-2005
Draft Final RFI Report - Building 1982	Earth Tech	JAN-2005
Final RFI Report, Land Spreading Field	Earth Tech	JAN-2005
Final RFI Report - Bldg 8300	Earth Tech	JAN-2005
Final Quarterly Monitoring Report, 2nd Quarter 2004 Interim Closure Plan (ICP)	Earth Tech	JAN-2005
Final RFI Report and QCSR, Landfill 11	Earth Tech	FEB-2005
Draft Final Groundwater & Soil Gas Monitoring Report, 2nd Semiannual Report 2004, LF5	Earth Tech	FEB-2005
Draft Final Supplemental RFI Letter Work Plan, Old Central Washrack	Earth Tech	FEB-2005
Final Quarterly Monitoring Report, 3rd Quarter 2004	Earth Tech	FEB-2005
Draft Final ET Cap Annual Performance Monitoring Report for 2004, LF5	Earth Tech	FEB-2005
Interim Final Risk-Based Evaluation Procedures Manual, Module IV, Methodology for Identifying No Further Action at Solid Waste Management Units	Earth Tech	FEB-2005
Draft Final Risk-Based Evaluation Procedures Manual, Module V, Ecological Risk Procedures Manual	Earth Tech	FEB-2005
Draft Final Supplemental Indoor Air Assessment Letter Work Plan	Earth Tech	FEB-2005
Final Letter Work Plan Addendum - Bldg 2792	Earth Tech	FEB-2005
Draft Final RFI Report - Bldg 2735	Earth Tech	FEB-2005
Final RFI Report - Bldg 2692	Earth Tech	FEB-2005
Final RFI Report, Former Used/Waste Oil Tank - Bldg 635	Earth Tech	FEB-2005

IRP Previous Studies

2005

Title	Author	Date
Final Letter Work Plan Addendum - Bldg 2434	Earth Tech	FEB-2005
Final Rev. 1 Risk Based Evaluation Procedures Manual Module V, Tier II	Earth Tech	MAR-2005
Final Supplemental Indoor Air Assessment Letter Work Plan	Earth Tech	MAR-2005
Draft Final Letter Work Plan Addendum - Bldg 2840	Earth Tech	MAR-2005
Final RFI Report, Rev. 1, BECS	Earth Tech	MAR-2005
Final Existing Cover Evaluation Work Plan, Landfill 8	URS	MAR-2005
Final Groundwater & Soil Gas Monitoring Report, 2nd Semiannual Report 2004, LF5	Earth Tech	MAR-2005
Final Groundwater & Soil Gas Monitoring Report, 1st Semiannual Report 2004, LF5	Earth Tech	MAR-2005
Draft Final Quarterly Monitoring Report, 4th Quarter 2004	Earth Tech	MAR-2005
Final Letter Work Plan Addendum - Bldg. 2840	Earth Tech	APR-2005
Final Letter Work Plan Addendum - Bldg. 301	Earth Tech	APR-2005
Final Supplemental RFI Work Plan, Building 8000 - Former Waste Oil/Solvent Underground Storage Tanks	Earth Tech	APR-2005
Draft Final Letter RFI Work Plan Addendum, Former POW Camp	Earth Tech	APR-2005
Final RFI Report, North Specker Avenue	Earth Tech	MAY-2005
Final Letter RFI Work Plan Addendum, Former POW Camp	Earth Tech	MAY-2005
Final RFI Report, Bldg 1882	Earth Tech	MAY-2005
Final ET Cap Annual Performance Monitoring Report for 2004, LF5	Earth Tech	MAY-2005
Final Quarterly Monitoring Report, 4th Quarter 2004	Earth Tech	MAY-2005
Draft Final Former Grit/Oil Pit Interim Remedial Action Summary Report	Earth Tech	JUN-2005
Draft Final RFI, Landfill 2	URS	JUN-2005
Draft Final Quarterly Monitoring Report, 1st Quarter 2005	Earth Tech	JUN-2005
Interim Final Risk-Based Evaluation Procedures Manual, Module VI, Methodology for Identifying No Further Action at Solid Waste Management Units	Earth Tech	JUN-2005
Final Risk-Based Evaluation Procedures Manual, Module VI, Methodology for Identifying No Further Action at Solid Waste Management Units	Earth Tech	JUN-2005
Final RFI Report - Rev. 1, Land Spreading Field	Earth Tech	JUN-2005
Final Phase I RFI Report, Former Used/Waste Oil Tank - Bldg 9628	Earth Tech	JUN-2005
CMS Work Plan Technical Memorandum, BECS	Earth Tech	JUN-2005
Final Letter Work Plan Addendum - Bldg 9072	Earth Tech	JUN-2005
Draft Final CMS Work Plan, BECS	Earth Tech	JUL-2005
Draft Final Letter Work Plan Addendum, Bldg 3092	Earth Tech	AUG-2005

IRP Previous Studies

2005

Title	Author	Date
Final Letter Work Plan Addendum, Bldg 3292	Earth Tech	AUG-2005
Draft Final RFI Report, Bldg 2427	Earth Tech	AUG-2005
Final Letter Work Plan Addendum - Building 3292	Earth Tech	AUG-2005
Final RFI Report, Landfill 9	Earth Tech	AUG-2005
Draft Final RFI Report, Landfill 9	Earth Tech	AUG-2005
Final Letter Work Plan for Statewide Groundwater Monitoring Event	Earth Tech	AUG-2005
Final Letter Work Plan Addendum, Bldg 1392	Earth Tech	AUG-2005
Draft Final Letter Work Plan Addendum, Bldg 3192	Earth Tech	AUG-2005
Final Former Grit/Oil Pit Interim Remedial Action Summary Report	Earth Tech	AUG-2005
Draft Final Groundwater & Soil Gas Monitoring Report, 1st Semiannual Report 2005, LF5	Earth Tech	AUG-2005
Final Quarterly Monitoring Report, 1st Quarter 2005	Earth Tech	AUG-2005
Final RFI Report - Building 2392	Earth Tech	SEP-2005
Draft Final RFI Report - Building 1682	Earth Tech	SEP-2005
Draft Final Quarterly Monitoring Report, 2nd Quarter 2005	Earth Tech	SEP-2005
Final RFI Report - Bldg 2392	Earth Tech	SEP-2005
Final Phase I RFI Report, Former Used Waste Oil Tank - Bldg 2239	Earth Tech	SEP-2005
Final Risk-Based Evaluation Procedures Manual, Module VI, Methodology for Identifying No Further Action at Solid Waste Management Units, Revision 1	Earth Tech	SEP-2005
Final Letter Work Plan Addendum - Bldg 9609	Earth Tech	SEP-2005
Final Letter Work Plan Addendum - Bldg 3192	Earth Tech	SEP-2005
Final Letter Work Plan Addendum - Bldg 3092	Earth Tech	SEP-2005
Draft Final Letter Work Plan, Former Building 523/Building 501	Earth Tech	OCT-2005
Draft Final CMS Work Plan, Rev. 1, BECS	Earth Tech	OCT-2005
Final RFI Report - Bldg 2427	Earth Tech	OCT-2005
Final Groundwater & Soil Gas Monitoring Report, 1st Semiannual Report 2005, LF5	Earth Tech	OCT-2005
Draft Final RFI Report - Building 639	Earth Tech	NOV-2005
Draft Final RFI Report - Building 2992	Earth Tech	NOV-2005
Draft Final RFI Report - Building 1382	Earth Tech	NOV-2005
Risk Module IV (GPLs), 2005 Annual Update	Earth Tech	NOV-2005
Final Quarter Monitoring Report, 2nd Quarter 2005	Earth Tech	DEC-2005
Final CMS Work Plan, BECS	Earth Tech	DEC-2005
Risk Module III, 2005 Annual Update	Earth Tech	DEC-2005

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2005

Title	Author	Date
Draft Final RFI Report, Rev. 1, Bldg 2492	Earth Tech	DEC-2005
Final RFI Report, Bldg 2492	Earth Tech	DEC-2005
Final RFI Report - Bldg 1982	Earth Tech	DEC-2005
RFI Summary for SWMU 65, Bldg 1982	Earth Tech	DEC-2005
Final Letter Work Plan, Former Building 523/Building 501	Earth Tech	DEC-2005
Draft Final RFI Report - Building 2492	Earth Tech	DEC-2005
Draft Final Quarterly Monitoring Report, 3rd Quarter 2005	Earth Tech	DEC-2005

2006

Draft Final RFI Report - Building 1692	Earth Tech	JAN-2006
Final Risk-Based Evaluation Procedures Manual, Module III (2005 Annual Update), Rev. 1	Earth Tech	JAN-2006
Final Risk-Based Evaluation Procedures Manual, Module IV (2005 Annual Update), Rev. 2	Earth Tech	JAN-2006
Final (Rev 2) Risk-Based Evaluation Procedures Manual, Module IV (2005 Annual Update) Development of Groundwater Protection Levels	Earth Tech	JAN-2006
Final Quarterly Monitoring Report, 3rd Quarter 2005	Earth Tech	FEB-2006
Methane Gas Evaluation Letter Work Plan for Former Landfill 2/3	Earth Tech	FEB-2006
Draft Final Landfill 5 ET Cap Annual Performance Monitoring Report	Earth Tech	FEB-2006
Draft Final Range 1 Soil RFI Report (text only)	Earth Tech	FEB-2006
Draft Final RFI Report Bldg 301	Earth Tech	FEB-2006
Draft Final RFI Report, Rev. 1 - Bldg 8152	Earth Tech	FEB-2006
Draft Final Supplemental RFI Letter Work Plan, Old Central Washrack, Revision 1	Earth Tech	MAR-2006
Draft CMS Work Plan - Bldg 8300	Earth Tech	MAR-2006
Draft Final Quarterly Monitoring Report, 4th Quarter 2005	Earth Tech	MAR-2006
Draft Final CMS Work Plan, Landfill 1 and CDDL	Earth Tech	MAR-2006
Draft Final Groundwater & Soil Gas Monitoring Report, 2nd Semiannual Report 2005, LF5	Earth Tech	MAR-2006
Draft Final CMS Work Plan, Landfill 7 and Pete's Hill Dump	Earth Tech	MAR-2006
Draft Final CMS Work Plan, Combined Landfill Area	Earth Tech	MAR-2006
Final RFI Report, Bldg 2940	Earth Tech	MAR-2006
Draft Final CMS Work Plan - Building 8300	Earth Tech	MAR-2006
Draft Final CMS Work Plan for North Specker Avenue	Earth Tech	MAR-2006
Final Supplemental Letter Work Plan, Former POW Camp	Earth Tech	MAR-2006
Draft Final Risk-based Evaluation Procedures Manual, Module V, Development of Ecological Screening Values	Earth Tech	MAR-2006

IRP Previous Studies

2006

Title	Author	Date
2005 Site-wide Groundwater Monitoring Event, Potable Source Water Sampling Results	Earth Tech	APR-2006
2005 Site-wide Groundwater Monitoring Event, Analytical Summary Report	Earth Tech	APR-2006
Final Letter Work Plan Addendum, Former Building 2735	Earth Tech	APR-2006
Draft Final RFI Report - Building 2434	Earth Tech	APR-2006
Replacement Pages-Final Risk-Based Evaluation Procedures Manual, Module VI, Methodology for No Further Action at Solid Waste Management Units (Revision 2) April 2006 Update	Earth Tech	APR-2006
Final Letter Work Plan Addendum - Building 3874	Earth Tech	APR-2006
Final Groundwater & Soil Gas Monitoring Report, 2nd Semiannual Report 2005, LF5	Earth Tech	APR-2006
Final Quarterly Monitoring Report, 4th Quarter 2005	Earth Tech	APR-2006
Draft Final RFI Report, Former Building 523/Existing Building 501	Earth Tech	APR-2006
Draft Final Basis for NFA - Building 2239	Earth Tech	MAY-2006
Final Supplemental Letter Work Plan - Building 1392	Earth Tech	MAY-2006
Final Letter Work Plan Addendum - Building 9603	Earth Tech	MAY-2006
Final Supplemental Letter Work Plan - Building 3092	Earth Tech	MAY-2006
Draft Final Supplemental Letter Work Plan - Building 2792	Earth Tech	MAY-2006
Draft Final Landfill 5 Monitoring and Maintenance Plan	Earth Tech	MAY-2006
Draft Final RFI Report, Landfill 9	URS	MAY-2006
Draft Final Basis for NFA - Vehicle Washrack Drainage Ditches	Earth Tech	JUN-2006
Final Basis for NFA - Building 2239	Earth Tech	JUN-2006
Final Risk-based Evaluation Procedures Manual, Module V, Development of Ecological Screening Values	Earth Tech	JUN-2006
Final Letter Work Plan Addendum - Building 9606	Earth Tech	JUN-2006
Final Supplemental Letter Work Plan - Building 9072	Earth Tech	JUN-2006
Final Presumptive Remedy Work Plan - Building 2940	Earth Tech	JUN-2006
Final RFI Report - Building 2840	Earth Tech	JUN-2006
Final RFI Report - Building 1302	Earth Tech	JUN-2006
RFI Soil Sampling Results, Building 523/ Building 50	Earth Tech	JUN-2006
Draft Final Quarterly Monitoring Report, 1st Quarter 2006, CLA	Earth Tech	JUN-2006
Draft Final Field and Laboratory Procedures Manual for Fort Carson Army Installation, Revision 5	Earth Tech	JUL-2006
Final Supplemental RFI Letter Work Plan, Old Central Washrack	Earth Tech	JUL-2006
Draft Final NFA Petition, Revision 1, Vehicle Washrack Drainage Ditches	Earth Tech	JUL-2006

IRP Previous Studies

2006

Title	Author	Date
Draft Final Letter Work Plan Addendum for Building 749	Earth Tech	JUL-2006
Final RFI Report, Multi-Purpose Range Complex	Earth Tech	JUL-2006
Draft Final Supplemental Letter Work Plan - Building 3292	Earth Tech	JUL-2006
Draft Final Corrective Measure Design - Building 2940	Earth Tech	JUL-2006
Final RFI Report - Building 1692	Earth Tech	JUL-2006
Draft Final RFI Report, Revision 1, Range 1 Open Burning Grounds	Earth Tech	JUL-2006
Draft Final Letter Work Plan, Supplemental Soil Sampling, Bldg 301 Drainage Ditch	Earth Tech	JUL-2006
Final (Revision 2) Risk-Based Evaluation Procedures Manual, Module V1, Methodology for Identifying NFA at SWMUs	Earth Tech	AUG-2006
Draft Final RFI Report - Building 9609	Earth Tech	AUG-2006
Draft Final Letter Work Plan, NFA Soil Sampling - Former Building 1302	Earth Tech	AUG-2006
Final RFI Report, Range 1, Open Burn Grounds	Earth Tech	AUG-2006
Draft Final Soil Risk Screening Letter Report, Range 1	Earth Tech	AUG-2006
Final Quarterly Monitoring Report, 1st Quarter 2006	Earth Tech	AUG-2006
Draft Final Basis for NFA - Building 2692	Earth Tech	SEP-2006
Draft Final Basis for NFA - Building 2492	Earth Tech	SEP-2006
Draft Final Basis for NFA - Building 2082	Earth Tech	SEP-2006
Draft Final Basis for NFA - Building 1982	Earth Tech	SEP-2006
Draft Final Basis for NFA for Building 1882	Earth Tech	SEP-2006
Final Letter Work Plan, Supplemental Soil Sampling at Building 301 Drainage Ditch	Earth Tech	SEP-2006
Replacement pages for the Final RFI Work Plan Addendum, Building 8000	Earth Tech	SEP-2006
Final Soil Risk Screening Letter Report, Range 1 Open Burning Grounds	Earth Tech	SEP-2006
Draft Final Basis for NFA - Building 1404	Earth Tech	SEP-2006
Draft Final Basis for NFA for Building 9628	Earth Tech	SEP-2006
Draft Final Revised Supplemental Letter Work Plan - Building 3292	Earth Tech	SEP-2006
Final Basis for NFA - Building 2840	Earth Tech	SEP-2006
Final RFI Report, Building 2735	Earth Tech	SEP-2006
Draft Final CMS Work Plan, Revision 1, Landfill 7 and Pete's Hill Dump	Earth Tech	SEP-2006
Draft Final Quarterly Monitoring Report, 2nd Quarter 2006	Earth Tech	SEP-2006
Draft Final Basis for NFA - Building 218	Earth Tech	SEP-2006
Draft Final Basis for NFA - Building 635/631	Earth Tech	SEP-2006

IRP Previous Studies

2006

Title	Author	Date
Final Groundwater CMS Work Plan, CLA	Earth Tech	SEP-2006
Final Basis for NFA, Sludge Trench Pit	Earth Tech	OCT-2006
Draft Final Basis for NFA, Former Long-Term Haz. Waste Storage Area	Earth Tech	OCT-2006
Draft Final Letter Work Plan, NFA Soil Sampling, DRMO Hazardous Waste Storage Area	Earth Tech	OCT-2006
Final Supplemental Sampling to Evaluate Chromium and Thallium in Soil at Building 9620	Earth Tech	OCT-2006
Final Corrective Measure Design - Building 8300	Earth Tech	OCT-2006
Final Letter Work Plan, NFA Soil Sampling - Building 8142	Earth Tech	OCT-2006
Draft Final RFI Report - Building 2992	Earth Tech	OCT-2006
Final NFA Soil Sampling - Building 1302	Earth Tech	OCT-2006
Draft Final Interim Monitoring Plan, Landfill 2/3	Earth Tech	OCT-2006
Final BECS CMS Work Plan replacement Figure 9-1	Earth Tech	OCT-2006
Final Letter Work Plan for 2006 Site-wide Groundwater Monitoring Event	Earth Tech	NOV-2006
Final RFI Report - Building 8152	Earth Tech	NOV-2006
Final Remedy Completion Report - Former Building 2940	Earth Tech	NOV-2006
Draft Final Presumptive Remedy Report - Former Building 2940	Earth Tech	NOV-2006
Draft Final Revised Basis for NFA, Former Building 2735	Earth Tech	NOV-2006
Final Basis for NFA, Former Building 2735	Earth Tech	NOV-2006
Draft Final RFI Report, Former Used/Waste Oil Tank - Building 218	Earth Tech	NOV-2006
Draft Final Basis For NFA, Rev. 1, Building 635 (SWMU 57), replacement pages	Earth Tech	NOV-2006
Final Basis for NFA for Building 2427	Earth Tech	DEC-2006
Draft Final RFI Report, Revision 1, Former Building 3874	Earth Tech	DEC-2006
Final Supplemental Letter Work Plan - Building 3192	Earth Tech	DEC-2006
Draft Final Quarterly Monitoring Report, 3rd Quarter 2006	Earth Tech	DEC-2006

2007

GW Mon Wells Installed & Abandoned in 2006	Earth Tech	JAN-2007
Draft Final (Rev 1) CMS WP, North Specker	Earth Tech	JAN-2007
Carson Solar I Project	URS	JAN-2007
4Q06 Permit Report	Earth Tech	JAN-2007
Final Basis for NFA, Bldg. 218	Earth Tech	FEB-2007
Final Basis for NFA, Bldg. 635	Earth Tech	FEB-2007
Draft Final Annual M & M Report 2006, LF5	Earth Tech	FEB-2007

IRP Previous Studies

2007

Title	Author	Date
Draft Final Annual Monitoring Summary for 2006, LF4	Earth Tech	FEB-2007
Draft Final Annual M & M for 2006, LF4	Earth Tech	FEB-2007
Draft Final RFI Report, Bldg. 3092	Earth Tech	FEB-2007
Final LF9 CMS LF Cover Eval. Report	URS	FEB-2007
Draft Final Interim Annual Interim Mon Summary for 2006, LF2	Earth Tech	FEB-2007
Draft Final Interim Annual Monitoring Summary for 2003 Landfills 2/3	Earth Tech	FEB-2007
Draft Final NFA SWMU Bldg 635/SWMU 77	Earth Tech	FEB-2007
Draft Final Basis for NFA, Bldg. 8200	Earth Tech	FEB-2007
2005 Site-wide Monitoring Event Analytical Summary Rpt, and 2005 Site-wide Monitoring Event Potable Source Water Sampling Results	Ft Carson	MAR-2007
Draft Final Basis for NFA, Bldg 9620	Ft Carson	MAR-2007
Final RFI Building 301	Earth Tech	MAR-2007
Final CMS Work Plan, North Specker	Earth Tech	MAR-2007
Draft Final Work Plan Addendum Building 9072	Earth Tech	MAR-2007
Draft Final (Revision 1) NFA Building 9628	Earth Tech	MAR-2007
ET CAP Performance M&M Monthly Inspection Report	Earth Tech	MAR-2007
Draft Final Supplemental Letter Work Plan - Land Spreading Field	Earth Tech	MAR-2007
DF NFA Former Oil/Water Separator Bldg. 2492	Earth Tech	MAR-2007
Final RFI Building 2434	Earth Tech	APR-2007
Final Letter Work Plan - Land Spreading Field	Earth Tech	APR-2007
Draft Final RFI Report, Bldg 202	Ft Carson	APR-2007
Proposed Monitoring Well Installation and Groundwater Sampling in Support of the Butts East Combined Sites Corrective Measures Study	Earth Tech	APR-2007
Draft Final RFI Report, Former POW Camp	URS	APR-2007
Final Annual Monitoring and Maintenance Report Landfill 5	Earth Tech	APR-2007
Draft Final NFA Building 1302	Earth Tech	APR-2007
Final Supplemental Letter Work Plan Building 3292	Earth Tech	APR-2007
Final (Revision 2) Module VI	Earth Tech	APR-2007
Final Quarterly Monitoring Report,4Q 2006 CLA	Earth Tech	MAY-2007
Final NFA Bldg. 2492	Earth Tech	MAY-2007
Draft Final RFI Building 8000	Earth Tech	MAY-2007
Final Potable Source Water Sampling Report for 2006	Earth Tech	MAY-2007
Final Letter Work Plan Addendum Bldg. 9072	Earth Tech	MAY-2007

IRP Previous Studies

2007

Title	Author	Date
Draft Final Presumptive Remedy Work Plan BECs	Earth Tech	MAY-2007
Draft Final Remedy Completion Report Landfill 9	Earth Tech	MAY-2007
Final Basis for NFA Building 9628	Earth Tech	MAY-2007
Draft Final FLPM	Earth Tech	MAY-2007
Final Basis NFA Building 8200	Earth Tech	MAY-2007
Final Analytical Summary Report 2006 Site-wide	Earth Tech	MAY-2007
Draft Final CMS Work Plan Landfill 7 Revision 2	Earth Tech	JUN-2007
Draft Final Basis for NFA Building 8930	Earth Tech	JUN-2007
Draft Final CMS Work Plan Landfill 7 & Pete's Hill Dump	Earth Tech	JUN-2007
CDPHE Approval Draft Final Nitrate Source Work Plan	Calibre	JUN-2007
Final Ltr Work Plan Hydrogeologic Inv. SWMU 1 LF 1, FTC-005	Earth Tech	JUN-2007
Final NFA SWMU 96, UST at Bldg 1404	Earth Tech	JUN-2007
Final RFI Building 2992	Earth Tech	JUN-2007
Draft Final Basis For NFA, Rev.1 Long Term Haz Waste Storage Area, SWMU 54	Earth Tech	JUN-2007
Final Ltr Work Plan, No Further Action Sampling DIO, SWMU 51	Earth Tech	JUN-2007
Final RFI Former Building 523/Existing Building 501	Earth Tech	JUN-2007
Risk Evaluation for Landfill 8	URS	JUN-2007
Draft Final Quarterly Monitoring Report 1Q07 CLA	Earth Tech	JUN-2007
Draft Final Basis for NFA Building 1515	Earth Tech	JUN-2007
DF Groundwater Treatability Study Work Plan North Specker Avenue	Earth Tech	JUL-2007
2nd Quarter Permit Report	Ft Carson	JUL-2007
Draft Final Landfill 8 (FTC-012/SWMU 8) Existing Cover Evaluation Report	URS	JUL-2007
Final Letter Work Plan Addendum Bldg 749	Earth Tech	AUG-2007
Landfill 1 Geophysics Report	Earth Tech	AUG-2007
Final Basis for NFA Building 2082	Earth Tech	AUG-2007
ET Cap Maintenance Landfill 5	Earth Tech	AUG-2007
Monitoring & Maintenance Plan Landfill 5	Earth Tech	AUG-2007
DF Treatability Study Work Plan - BECS	Earth Tech	AUG-2007
Draft Final Quarterly Monitoring Report 2nd Q CLA	Earth Tech	SEP-2007
Final Quarterly Monitoring Report 1st Q CLA	Earth Tech	SEP-2007
Interim Remedy Completion Report Landfill 9	Northwind	SEP-2007
Draft Final Remedy Construction Completion Report	Earth Tech	SEP-2007

IRP Previous Studies

2007

Title	Author	Date
Draft Final RFI Report Bldg. 9603	Earth Tech	SEP-2007
Final CMS Work Plan Landfill 7 & Pete's Hill Dump	Earth Tech	SEP-2007
Draft Final Indoor Air Assessment Letter Report North Specker	Earth Tech	SEP-2007
Draft Final Nitrate Source Investigation Report Site-wide Groundwater	Calibre	SEP-2007
Final Letter Work Plan 2007 Site-wide Groundwater Monitoring Event	Earth Tech	SEP-2007
Final Remedy Construction Completion Report Building 8300	Earth Tech	OCT-2007
3rd Q Permit Report	Earth Tech	OCT-2007
SWMU 5, Final M&M Plan Replacement Pages	Earth Tech	NOV-2007
SWMU 4, Landfill 4 Draft Final Remedy Selection Report	Earth Tech	NOV-2007
Draft Final Risk Module VI	Earth Tech	NOV-2007
Letter Work Plan for SWMU 107, Bldg 639 UST	Earth Tech	NOV-2007
Final Landfill 5 Monitoring and Maintenance Plan	Earth Tech	DEC-2007
SWMU 86 Letter Work Plan, Bldg. 9072 UST	Earth Tech	DEC-2007
SWMU 54 Final NFA	Earth Tech	DEC-2007
DF Basis for NFA BANS Building 8030	Earth Tech	DEC-2007
Final Basis for NFA Former Long-Term Hazardous Waste Storage Area	Earth Tech	DEC-2007
Draft Final CLA 3rd Quarter Monitoring Report 2007	Earth Tech	DEC-2007

2008

Final Letter Work Plan for Phase 2 Hydrogeologic Investigation in the Vicinity of Landfill 1	Earth Tech	JAN-2008
Final RFI Report Former Used/Waste Oil UST Former Bldg. 3874	Earth Tech	JAN-2008
Final Letter Work Plan, SWMU 21	Bay West	JAN-2008
Final Well Abandonment Summary Report, Bldg 8200	Earth Tech	JAN-2008
Final Well Abandonment Summary Report, Bldg 1515	Earth Tech	JAN-2008
Draft Final RCRA Facility Investigation Report, SWMU 169	Earth Tech	JAN-2008
Analytical Summary Report 2007 Site-wide Groundwater Monitoring Event,	Earth Tech	FEB-2008
Draft Final Basis for NFA, SWMU 27	Earth Tech	FEB-2008
Final Letter Work Plan - NFA Soil Sampling, SWMU 165	Earth Tech	FEB-2008
Final Presumptive Remedy Work Plan, SWMUs 24 and 23	Earth Tech	FEB-2008
Proposed 2008 Monitoring Well Installation and Groundwater Sampling, SWMUs 24 and 23	Earth Tech	FEB-2008
Final Potable Source Water Sampling Report 2007	Earth Tech	FEB-2008

IRP Previous Studies

2008

Title	Author	Date
Analytical Data Package Technical Review Report GAC Unit Optimization Test Results	Earth Tech	FEB-2008
Draft Final Quarterly Monitoring Report First Quarter 2007, CLA	Earth Tech	MAR-2008
Draft Final Letter Work Plan for Phase 1 Hydrogeologic Investigation in the Vicinity of Landfill 1	Earth Tech	MAR-2008
Draft Final Annual Interim Monitoring Summary for 2007 Landfill 2/3	Earth Tech	MAR-2008
Draft Final Monitoring and Maintenance Plan, Landfill 9	Earth Tech	MAR-2008
Final NFA, SWMU 85	Earth Tech	MAR-2008
Draft Final Letter Work Plan Addendum, SWMU 109	Earth Tech	MAR-2008
Final NFA, SWMU 111	Earth Tech	MAR-2008
Final Basis for NFA, SWMU 19	Earth Tech	MAR-2008
Final Letter Work Plan - NFA Soil Sampling, SWMU 28	Earth Tech	MAR-2008
Final FLPM	Earth Tech	MAR-2008
Final Annual Interim Monitoring Summary for 2006 Landfill 2/3	Earth Tech	APR-2008
Final Interim Groundwater and Soil Gas Monitoring Plan Landfill 2/3	Earth Tech	APR-2008
Draft Final Annual Monitoring Summary for 2007 for Landfill 4	Earth Tech	APR-2008
Draft Final Supplemental Investigation Summary for Landfill 6	Earth Tech	APR-2008
Draft Letter Work Plan for Range 1, SWMU 45	Earth Tech	APR-2008
Draft Final NFA, SWMU 78	Earth Tech	APR-2008
Final Basis for NFA for Former Building 1302	Earth Tech	APR-2008
Final Work Plan, RCRA Facility Investigation	Bay West	APR-2008
Final Letter Work Plan 2008 Monitoring Well and GW Sampling, BECS	Earth Tech	APR-2008
Final FLPM RV 1	Earth Tech	APR-2008
Final Letter Work Plan for Phase II Hydrogeologic Investigation in Vicinity of LF 1	Earth Tech	MAY-2008
Draft Final First Quarter 2008 Groundwater Monitoring Report, SWMU 84	Earth Tech	MAY-2008
Final Letter Work Plan Addendum, SWMU 109	Earth Tech	MAY-2008
Draft Final Evaluation of Chromium Speciation in Soil at FTC 23 sites	Earth Tech	MAY-2008
Letter Work Plan, SWMU 32	Earth Tech	MAY-2008
Draft Final RCRA RFI Report, SWMU 35	URS	MAY-2008
Draft Final Evaluation of Chromium Speciation in Soil	Earth Tech	MAY-2008
Final Annual Monitoring and Maintenance Report 2007, Landfill 5	Earth Tech	JUN-2008
Draft Final Remedy Construction Completion Report for Landfill 9	North Wind	JUN-2008

IRP Previous Studies

2008

Title	Author	Date
Draft Final NFA, SWMU 81	Earth Tech	JUN-2008
Final RCRA Facility Investigation Report, SWMU 33	Earth Tech	JUN-2008
Final NFA, SWMU 26	Earth Tech	JUN-2008
Final FLPM RV 2	Earth Tech	JUN-2008
Phase II Geophysical Surveys at Landfill 1 CLA	Earth Tech	JUL-2008
Draft Final Remedy Selection Report for Landfill 4	Earth Tech	JUL-2008
Final Annual Monitoring Summary 2006, Landfill 4	Earth Tech	JUL-2008
Final Annual Monitoring Summary 2007, Landfill 4	Earth Tech	JUL-2008
Final RFI Report, SWMU 73	Earth Tech	JUL-2008
Draft Final Basis for NFA, SWMU 51	Earth Tech	JUL-2008
Final Basis for NFA, SWMU 27	Earth Tech	JUL-2008
Final Monitoring and Maintenance Plan for Landfill 4	Earth Tech	AUG-2008
Draft Final RV 1 Basis for NFA, SWMU 165	Earth Tech	AUG-2008
ET Cap Potential Reference Areas Report, Landfill 5	Earth Tech	SEP-2008
Draft Final Basis for NFA, SWMU 77	Earth Tech	SEP-2008
Draft Final Basis for NFA, SWMU 69	Earth Tech	SEP-2008
Draft Final RFI Report, SWMU 21	Bay West	SEP-2008
NFA Soil Sampling, SWMU 30	Earth Tech	SEP-2008
Draft Final RFI Report, SWMU 86	Earth Tech	OCT-2008
Draft Final Basis for NFA, SWMU 90	Earth Tech	OCT-2008
Supplement to the Draft Final RFI Report, SWMU 107	Earth Tech	OCT-2008
Final Basis for NFA, SWMU 51	Earth Tech	OCT-2008
2008 Groundwater Investigation Data Submittal for BECs	Earth Tech	OCT-2008
Final RCRA Facility Investigation Report, SWMU 164	URS	OCT-2008
Draft Final Letter Work Plan for Phase III Hydrogeologic Invest. In Vicinity of LF 1	Earth Tech	NOV-2008
Final Safety, Health and Emergency Response Plan	Shaw	NOV-2008

2009

Draft Final Supplemental RFI Work Plan for Old Central Washrack, SWMU 36	Shaw	JAN-2009
Draft Final Presumptive Remedy Work Plan for UST at Former Bldg 202, SWMU 164	Shaw	JAN-2009
Final RFI Report for Former POW camp, SWMU 168	URS	JAN-2009
Draft Final RFI Report for the Former Used/Waste Oil UST at Former Bldg 1392, SWMU 109	AECOM	FEB-2009
Draft Final RFI Report for the Former Used/Waste Oil UST at Former Bldg 639, SWMU 107	AECOM	FEB-2009

IRP Previous Studies

2009

Title	Author	Date
Final Basis for NFA for the BANS at Bldg 8030, SWMU 29	AECOM	FEB-2009
Draft Basis for NFA at the DRMO Hazardous Waste Storage Area, SWMU 50	AECOM	FEB-2009
Final Field and Laboratory Procedures Manual FLPM	AECOM	FEB-2009
Final Interim Groundwater and Soil Gas Monitoring Plan for Landfill 2/3	AECOM	FEB-2009
Final RFI Report for Former Used/Waste Oil UST at Bldg 639, SWMU 107	AECOM	FEB-2009
Draft Final Annual Monitoring and Maintenance Report 2008, SWMU 5	Shaw	FEB-2009
Draft Final Annual Monitoring and Maintenance Report 2008, SWMU 9	Shaw	FEB-2009
Final RFI Report for Former Used/Waste Oil Tanks at Bldg 9072, SWMU 86	AECOM	FEB-2009
Final Supplemental RFI Letter Work Plan for Former Used/Waste Oil UST at Bldg 9609, SWMU 89	AECOM	MAR-2009
Draft Basis RV1 for NFA at DRMO, SWMU 50	AECOM	MAR-2009
Final Quarterly Groundwater Monitoring Report Fourth Quarter 2008 for Bldg 1882, OPS	AECOM	MAR-2009
Final Basis or NFA for Former Used/Waste Oil UST at Former Bldg 2434, SWMU 69	AECOM	MAR-2009
Final Basis for NFA for Former Used/Waste Oil Tank at Bldg 9620, SWMU 90	AECOM	MAR-2009
Final Basis for NFA for Former Used/Waste Oil USTs and Former Oil/Water Separator at Bldg 3092, SWMU 77	AECOM	MAR-2009
Site-wide Final Analytical Summary Report for 2008 GW Monitoring Event	AECOM	APR-2009
Final Remedy Construction Completion Report RV 1 for Landfill 9	AECOM	APR-2009
Draft Final Basis for NFA for the BANS at Bldg 8142, SWMU 30	AECOM	APR-2009
Draft Final RV 1 Basis for NFA for the Former Used Waste Oil UST at former bldg 3874, SWMU 80	AECOM	APR-2009
Draft Final Basis for NFA for Former Used/Waste Oil Tanks at Bldg 9072, SWMU 86	AECOM	APR-2009
Final Basis for NFA for Former Used/Waste Oil UST at Bldg 639, SWMU 107	AECOM	APR-2009
Draft Final Annual Monitoring Report 2008 for Landfill 9	Shaw	APR-2009
Final Basis for NFA for Former Used Waste Oil UST at Former Bldg 3874, SWMU 80	AECOM	MAY-2009
Final Annual Monitoring Summary for 2008 for Landfill 4	Shaw	MAY-2009
Draft Final Proposed Soil Strength Testing Work Plan for Landfill 7 and Pete's Hill Dump	Shaw	MAY-2009
Final Basis for NFA at BANS at Bldg 8142, SWMU 30	AECOM	MAY-2009
Presumptive Remedy Work Plan for Former Building 202 UST, SWMU 164	Shaw	JUN-2009
Draft Final Phase III Hydrogeologic Investigation Summary in the Vicinity of Landfill 1	AECOM	JUN-2009
Draft Final RFI Report for Former Oil/Water Separator and Former UST at Bldg 1682, SWMU 62	Summit	JUL-2009

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2009

Title	Author	Date
Draft Final Basis for NFA at the Former Used/Waste Oil Portable Bladder Tank at Former Bldg 523 and Existing Bldg 501	Summit	JUL-2009
Draft Final Basis for NFA, Former Used Waste Oil UST at Bldg 301, SWMU 56	Summit	JUL-2009
Existing Cover Evaluation Report for Landfill 8	URS	JUL-2009
Draft Final Presumptive Remedy Work Plan for the Former POW Camp, SWMU 168	Shaw	JUL-2009
Draft Basis for NFA for Former Oil/Water Separator and Former Used Waste Oil UST at Bldg 1692, SWMU 63	Summit	JUL-2009
Draft Final CMS Work Plan at Former USTs at Bldg 8000 and Former Vapor Degreaser	Shaw	AUG-2009
Final Basis for NFA for Former Used/Waste Oil Tank at Bldg 1515, SWMU 61	AECOM	AUG-2009
Draft final Basis for NFA at the Former Oil/Water Separator and Former UST at Bldg 1382, SWMU 60	Summit	AUG-2009
Final Maintenance and Monitoring Report for Landfills 2 and 3	Shaw	AUG-2009
Draft Final Basis for NFA for Former Oil/Water Separator and Former Used Waste Oil UST at Bldg 1692	Summit	SEP-2009
Final Proposed Soil Strength Testing Letter Work Plan for Landfill 7 and Pete's Hill Dump	Shaw	SEP-2009
Draft Final Basis for NFA for Former Oil/Water Separator and Former Used Waste Oil UST at Bldg 1692, SWMU 63	Summit	SEP-2009
Final CMS Work Plan at Former Waste Oil/Solvent USTs at Bldg 8000 and the Former Vapor Degreaser	Shaw	OCT-2009
Draft Final Basis for NFA at the Former Oil/Water Separator and Former Used/Waste Oil Tank at Bldg 2392, SWMU 68	Summit	OCT-2009
Draft Final RV 1 Basis for NFA at Bldg 2792, SWMU 73	AECOM	DEC-2009
Final Basis for NFA at DRMO, SWMU 50	AECOM	DEC-2009
Final Basis for NFA at Former UST at Bldg 301, SWMU 56	Summit	DEC-2009
Final Basis for NFA at the Former Oil/Water Separator and Former UST at Bldg 1382, SWMU 60	Summit	DEC-2009
Final Basis for NFA at the Former Used/Waste Oil Portable Bladder Tank at Former Bldg 523 and Existing Bldg 501	Summit	DEC-2009

2010

Draft Final Groundwater Extraction Testing at the Grit/Oil Pit, SWMU 13	Shaw	JAN-2010
Draft Final Basis for NFA at Former Oil/Water Separation and Former Used Waste Oil UST at Bldg 1682, SWMU 62	Summit	JAN-2010
Draft Final CMS Report for Landfill 7 and Pete's Hill Dump, SWMUs 7 and 14	Shaw	JAN-2010
Final Basis for NFA at Former Oil/Water Separator and Former UST at Bldg 1692, SWMU 63	Summit	FEB-2010
Draft Final Fourth Quarter 2009 Groundwater Monitoring Report for the Former UST at Bldg 8300, SWMU 84	AECOM	FEB-2010

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2010

Title	Author	Date
Draft Final Annual Five-Year Monitoring Summary for 2009 at Landfill 4	Shaw	FEB-2010
Draft Final Annual Groundwater Monitoring Report for 2009 at Landfill 8	Shaw	MAR-2010
Draft Final Annual Groundwater Monitoring Report for 2009, Landfill 9	Shaw	MAR-2010
Draft Final RFI Letter Work Plan for the Former Used Oil UST and Former Oil/Water Separator at Bldg 1392, SWMU 109	Summit	MAR-2010
Draft Final Annual Monitoring and Maintenance Report for 2009, Landfill 2/3	Shaw	MAR-2010
Draft Final Annual Groundwater Monitoring Report for 2009, Landfill 5	Shaw	MAR-2010
Final Quarterly Report for Second Quarter 2009 at the Combined Landfill Area	Shaw	MAR-2010
Final Annual M&M Report for 2008 at Landfill 5	Summit	MAR-2010
Draft Final Treatability Study Report for the North Specker Plume, SWMU 167	Shaw	MAR-2010
Draft Final Presumptive Remedy Work Plan at BECS Fire Training Area and Sewage Treatment Lagoons	Shaw	MAR-2010
Final Annual Groundwater Monitoring Report for 2009, Landfill 9	Shaw	APR-2010
Final Annual Groundwater Monitoring Report for 2009 at Landfill 8	Shaw	APR-2010
Draft Final Basis for No Further Action at the Former Used/Waste Oil Tank USTs, Building 8152, SWMU 82	URS	APR-2010
Final Annual Monitoring and Maintenance Report for 2009 at Landfill 2/3	Shaw	APR-2010
Final Annual Five-Year Monitoring Summary for 2009 at Landfill 4	Shaw	APR-2010
Final Quarterly Monitoring Report Third Quarter 2009 at the Combined Landfill Area	Shaw	MAY-2010
Draft Final Presumptive Remedy Work Plan for Landfill 8	Shaw	MAY-2010
Draft Final 1st Quarter 2010 GW Mon Report at the Former UST at Bldg 8300, SWMU 84	AECOM	MAY-2010
Draft Final RFI Old Central Washrack, SWMU 36	Shaw	JUN-2010
Final Basis for No Further Action at the Former Used/Waste Oil Tank USTs, Building 8152, SWMU 82	URS	JUN-2010
Final Basis for NFA at the Former UST Multi Purpose Range Complex, SWMU 92	URS	JUN-2010
Final Basis for NFA at the Former Oil/Water Separator and former Used/Waste oil USTs at Bldg 2992, SWMU 76	Summit	JUN-2010
Final Basis for NFA at Former Oil/Water Separation and Former Used Waste Oil UST at Bldg 1682, SWMU 62	Summit	JUN-2010
Draft Final Quarterly Monitoring Report 1st Quarter 2010 at the Combined Landfill Area	Shaw	JUN-2010
Draft Final RFI Letter Work Plan Former Used Waste Oil Underground Storage Tanks and Active Oil Water Separator, Building 749, SWMU 108	Summit	JUL-2010
Methane Monitoring, Second Quarter 2010 at CLA	Shaw	AUG-2010

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2010

Title	Author	Date
Draft Final RFI Report Former Used/Waste Oil Tank and Former Oil/Water Separator, Bldg. 1392, SWMU 109	Summit	SEP-2010
Final Presumptive Remedy Work Plan at BECS Fire Training Area and Sewage Treatment Lagoons, SWMUs 23 and 24	Shaw	SEP-2010
Draft Final Third Quarter 2010 Groundwater Monitoring Report, Former Used/Waste Oil Tank -Building 8300, SWMU 84	AECOM	OCT-2010
Draft Final Annual and Five Year Groundwater Monitoring Data at Range 121 Open Detonation Grounds, SWMUs 47 and 25	AECOM	OCT-2010
Final Quarterly Monitoring Report, First Quarter 2010 for the Combined Landfill Area	Shaw	OCT-2010
Final Third Quarter 2009 Groundwater Monitoring Report for the Former Used/Waste Oil Tank at Bldg 8300, SWMU 84	AECOM	NOV-2010
Final Fourth Quarter 2009 Groundwater Monitoring Report for the Former Used/Waste Oil Tank at Bldg 8300, SWMU 84	AECOM	NOV-2010
Final First Quarter 2010 Groundwater Monitoring Report for the Former Used/Waste Oil Tank at Bldg 8300	AECOM	NOV-2010
Final Second Quarter 2010 Groundwater Monitoring Report for the Former Used/Waste Oil Tank at Bldg 8300	AECOM	NOV-2010
Final Third Quarter 2010 Groundwater Monitoring Report for the Former Used/Waste Oil Tank at Bldg 8300	AECOM	NOV-2010
Final Presumptive Remedy Work Plan for Landfill 8	Shaw	NOV-2010
CLA Draft Final Quarterly Monitoring Report Third Quarter 2010 Combined landfill Area	Shaw	DEC-2010
SWMU 168 Draft Final Presumptive Remedy Annual Progress Report for 2010 at the Former Prisoner of War Camp	Shaw	DEC-2010
CLA Draft Final Revised CMS Work Plan for Combined Landfill Area	Shaw	DEC-2010
SWMU 89 Draft Final Letter Work Plan Supplemental well installation and Sampling at Former Waste Oil UST at Bldg 9609	Summit	DEC-2010
SWMU 79 Draft Final Presumptive Remedy Work Plan at Former Waste Oil USTS and Former Oil/Water Separator at Bldg 3292	Summit	DEC-2010

2011

Site-wide - Draft Final Risk-Based Evaluation Procedures Manual Module VI (RV 5) Methodology for Identifying NFA at SWMUS	AECOM	JAN-2011
SWMU 36 Draft Final RFI Report for the Old Central Washrack	Shaw	JAN-2011
CLA Final Quarterly Monitoring Report for Second Quarter 2010 Combined Landfill Area	Shaw	JAN-2011
SWMU 78 Draft Final RFI at former Used/Waste Oil USTs and Former Oil/Water Separator at Bldg 3192	AECOM	JAN-2011
SWMU 5 Final Landfill 5 Monitoring and Maintenance Plan Landfill 5	Shaw	JAN-2011

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2011

Title	Author	Date
CLA Draft Final Quarterly Monitoring Report for Fourth Quarter 2010 Combined Landfill Area	Shaw	FEB-2011
SWMU 2 and 3 Draft Final Annual Monitoring and Maintenance Report for 2010	Shaw	FEB-2011
SWMU 9 Draft Final Annual Monitoring and Maintenance Report for 2010 Landfill 9	Shaw	FEB-2011
SWMU 5 Draft Final Annual Monitoring and Maintenance Report for 2010 Landfill 5	Shaw	FEB-2011
SWMU 164 Final Presumptive Remedy Annual Progress Report at Former Bldg 202 UST	Shaw	FEB-2011
CLA RTCs for the Draft Final Quarterly Monitoring Report for Third Quarter 2010 at the Combined Landfill Area	Shaw	FEB-2011
SWMU 5 Final Annual M&M Report for 2010 at Landfill 5	Shaw	FEB-2011
Site-wide - Final Risk Module VI	AECOM	FEB-2011
SWMU 8 90% Design Package Appendices to the Presumptive Remedy Work Plan at Landfill 8	Shaw	FEB-2011
SWMU 9 Draft Final Annual Monitoring and Maintenance Report for 2010 Landfill 9	Shaw	MAR-2011
SWMU 9 Draft Final Annual Monitoring and Maintenance Report for 2010 Landfill 9	Shaw	MAR-2011
SWMU 9 Draft Final Annual Monitoring and Maintenance Report for 2010 Landfill 9	Shaw	MAR-2011
SWMU 168 Response to Comments for the Draft Final Presumptive Remedy Annual Progress Report for 2010 Former Prisoner of War Camp	Shaw	MAR-2011
CLA Response to Comments for Revised Draft Final Corrective Measures Study Work Plan Combined Landfill Area Groundwater	Shaw	MAR-2011
SWMU 87 Draft Final RCRA Facility Investigation Report, Active Oil/Water Separator -Building 9603	AECOM	MAR-2011
SWMU 4 Draft Final Annual Monitoring Summary for 2010 at Landfill 4	Shaw	APR-2011
SWMU 8 CD 100% Design Package Appendices to the PRWP at Landfill 8	Shaw	APR-2011
SWMU 79 Replacement pages for the Presumptive Remedy Work Plan at Former Waste Oil USTs and former Oil/Water Separator at Bldg 3292	Summit	APR-2011
SWMUs 2 and 3 Final Annual M&M Report for 2010 at landfills 2/3	Shaw	APR-2011
SWMUs 23 and 24 Draft Final Enhanced Bioremediation Pilot Study, Annual Progress Report, 2010, Butts East Combined Sites,	Shaw	APR-2011
SWMU 8 Draft Final Annual Groundwater Monitoring Report for 2010 at Landfill 8	Shaw	APR-2011
SWMU 78 Final RFI at former Used/Waste Oil USTs and Former Oil/Water Separator at Bldg 3192	AECOM	APR-2011
CLA Final Interim Closure Plan for the Combined Landfill Area	Shaw	APR-2011
SWMU 168 Final Presumptive Remedy Annual Progress Report for 2010 at the former POW Camp	Shaw	APR-2011
SWMU 87 Final RCRA Facility Investigation Report, Active Oil/Water Separator -Building 9603	AECOM	APR-2011

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2011

Title	Author	Date
SWMU 89 Draft Final RCRA Facility Investigation Report, Former Used/Waste Oil UST, Building 9609	Summit	MAY-2011
SWMU 109 Draft Final Corrective Measures Study Work Plan, Former Waste Oil UST and Former Oil/Water Separator, Building 1392	Summit	MAY-2011
SWMUs 2 and 3 Draft Final Presumptive Remedy Work Plan at Landfills 2/3	Shaw	MAY-2011
SWMUs 23 and 24 Draft Final Remedy Construction Completion Report for Butts East Combined Sites,	Shaw	JUN-2011
SWMU 28 - Draft Final Remedy Completion Report for the Battery Acid Neutralization Shop at Bldg 8000	Summit	JUL-2011
SWMU 36 Final RFI for Old Central Washrack	Shaw	AUG-2011
SWMUs 2 and 3 Final Letter Work Plan Existing Cover Soil Confirmatory Testing, Landfill 2/3	Shaw	AUG-2011
Site-wide - Draft Final Site-wide Selenium Study, Occurrence and Distribution of Selenium in Groundwater	Summit	AUG-2011
SWMU 109 Draft Final Corrective Measures Study Work Plan for SWMU 109	Summit	AUG-2011
SWMU 16/53 and 26 Proposed GW Sampling at SWMUs	Shaw	AUG-2011
SWMU 108 DF RFI Letter Work Plan for UST at Bldg 749	Summit	AUG-2011
SWMU 88 DF Supplemental RFI Letter Work Plan for UST at Bldg 9606	Summit	AUG-2011
SWMU 78 Draft Final CMS Work Plan at former Used/Waste Oil USTs and Former Oil/Water Separator at Bldg 3192	AECOM	AUG-2011
Site-wide - Final Analytical Summary Report for the 2011 Site-wide Groundwater Monitoring Event	AECOM	AUG-2011
SWMU 87 Draft Final RCRA Facility Investigation Report, Active Oil/Water Separator -Building 9603	AECOM	AUG-2011
SWMU 108 Draft Final RFI Letter Work Plan Supplemental Groundwater Sampling and Oil/Water Separator Inspection, Active Oil/Water Separator, Building 749	Summit	SEP-2011
SWMU 47 Submittal of Annual Groundwater Monitoring Data for Range 121 Open Detonation Grounds	AECOM	SEP-2011
SWMU 23/24 - Final Enhanced Bioremediation Pilot Study Annual Progress Report for 2010 Butts East Combined Sites	Shaw	SEP-2011
SWMU 89 Draft Final Corrective Measures Study Work Plan, Former Used/Waste Oil UST, Building 9609	Summit	SEP-2011
SWMUs 23/24 Draft Final Pilot Study Report Butts East Combined Sites	Shaw	SEP-2011
CLA - Draft Final Quarterly Monitoring Report, Second Quarter 2011	Shaw	SEP-2011
CLA - Draft Final Quarterly Monitoring Report, Second Quarter 2011	Shaw	SEP-2011
Site-wide - Table L2, Summary of Parameter Changes for Screening Criteria, Risk Module VI	Summit	SEP-2011

2012

SWMU 79 Draft Final Remedy Construction Completion Report, Former Waste Oil USTs and Former Oil/Water	Summit	JAN-2012
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IRP Previous Studies

2012

Title	Author	Date
Separator, Building 3292		
SWMU 45 Draft Final Basis for NFA, Range 1 Open Burn Grounds, Groundwater	AECOM	JAN-2012
SWMU 4 Draft Final Annual Monitoring Summary for 2011 Landfill 4	Shaw	JAN-2012
SWMU 8 Draft Final Construction Completion Report Landfill 8	Shaw	FEB-2012
SWMU 168 Data submittal as requested in CDPHE comments on the Draft Final Presumptive Remedy Annual Progress Report for 2011 , Former Prisoner of War Camp	Shaw	FEB-2012
SWMU 8 Draft Final Post-Closure Monitoring and Maintenance Plan Landfill 8	Shaw	MAR-2012
SWMU 8 Final Post-Closure Monitoring and Maintenance Plan Landfill 8	Shaw	MAR-2012
SWMU 8 Draft Final Post-Closure Annual Monitoring and Maintenance Report 2011 Landfill 8	Shaw	MAR-2012
SWMU 2/3 Final Revision 0 Presumptive Remedy Work Plan (90% Design Package) Landfill 2/3	Shaw	MAR-2012
SWMU 2/3 Draft Final Annual Monitoring and Maintenance Report for 2011 Landfill 2/3	Shaw	MAR-2012
SWMU 4 Final Revision 2 Monitoring and Maintenance Plan for Landfill 4	Shaw	MAR-2012
CLA Draft Final Annual Monitoring and Maintenance Report Fourth Quarter 2011, Combined Landfill Area	Shaw	MAR-2012
SWMU 9 Final Monitoring and Maintenance Plan Landfill 9	Shaw	MAR-2012
CLA Draft Final Revised Corrective Measures Study Work Plan Combined Landfill Area Groundwater, RV2	Shaw	MAR-2012
SWMU 5 Draft Final Annual Monitoring and Maintenance Report 2011 Landfill 5	Shaw	MAR-2012
Risk Mod Final (Revision 6) Risk-based Evaluation Procedures Manual	Summit	APR-2012
SWMU 81 Draft Final (Revision 2) Basis for No Further Action , Former Used/Waste Oil Tanks- Building 8142	AECOM	APR-2012
SWMU 89 Draft Final Corrective Measures Study, Former Waste Oil UST, Building 9609	Summit	APR-2012
SWMUs 23/24 Draft Final Corrective Measures Study Butts East Combined Sites	Shaw	APR-2012
SWMUs 2/3 Pre-Construction Activities at Landfill 2/3	Shaw	APR-2012
SWMUs 23/24 Draft Final Remedy Construction Completion Report, for Soil, Revision 2, Butts East Combined Sites	Shaw	APR-2012

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SWMU 2/3 Draft Final 2011 Annual Monitoring and Maintenance Report for Landfill 2/3	Shaw	JAN-2013
SWMU 78 Draft Final Presumptive Remedy Work Plan, Former Waste Oil USTs and Former Oil/Water Separator, Building 3192	Summit	JAN-2013
SWMU 23/24 Draft Final Corrective Measures Implementation Work Plan for Butts East Combined Sites	Shaw	JAN-2013
SWMU 7 Final Presumptive Remedy Work Plan (90%	Shaw	JAN-2013

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2013

Title	Author	Date
Design Package), Landfill 7		
SWMU 108 Draft Final RCRA Facility Investigation Report, Former Used/Waste Oil Tanks and Active Oil/Water Separator, Building 749	Summit	JAN-2013
CLA Draft Final Quarterly Monitoring Report, Fourth Quarter 2012, Combined Landfill Area	Shaw	FEB-2013
SWMU 88 Draft Final Basis for No Further Action, Active Oil/Water Separator, Building 9606	Summit	FEB-2013
SWMU 89 Draft Final Corrective Measures Implementation Work Plan (Revision 1), Former Used/Waste Oil UST, Building 9609	Summit	FEB-2013
SWMU 89 Draft Final Corrective Measures Implementation Work Plan (Revision 1), Former Used/Waste Oil UST, Building 9609	Summit	MAR-2013
SWMU 2/3 Draft Final 2012 Annual Monitoring and Maintenance Report Landfill 2/3	Shaw	MAR-2013
SWMU 36 Final Basis for No Further Action Approval	Shaw	MAR-2013
SWMU 4 Draft Final 2012 Annual Monitoring Summary, Landfill 4	Shaw	MAR-2013
SWMU 2/3 Draft Final 2012 Annual Monitoring and Maintenance Report Landfill 2/3	Shaw	MAR-2013
CLA Draft Final Quarterly Monitoring Report, First Quarter 2013 Combined Landfill Area	Shaw	JUN-2013
SWMU 7 Final Presumptive Remedy Work Plan (100% Design Package)	Shaw	JUN-2013
SWMU 23/24 Draft Final Corrective Measures Implementation Work Plan for Butts East Combined Sites, Sewage Treatment Lagoons and Fire Training Area, Revision 1	CB&I	JUN-2013
SWMU 14 Final Presumptive Remedy Work Plan (100% Design Package), Landfill 14	CB&I	JUN-2013
SWMU 88 Draft Final, Revision 1, Basis for No Further Action, Active Oil/Water Separator, Building 9606	Summit	JUN-2013
SWMU 89 Draft Final Corrective Measures Implementation Work Plan (Revision 2), Former Used/Waste Oil UST, Building 9609	Summit	JUN-2013
SWMU 167 Draft Final Corrective Measures Implementation Work Plan for North Specker Avenue, RV1	CB&I	JUL-2013
CLA Draft Final Corrective Measures Study, Combined Landfill Area Groundwater	CB&I	JUL-2013
SWMU 167 Letter Work Plan - Additional Delineation for the North Specker Avenue Plume East of Biobarriers 5, 6, and 7, Revision 0	CB&I	AUG-2013
SWMUs 2/3 Draft Final Construction Completion Report, Landfill 2/3	CB&I	SEP-2013
CLA Draft Final Letter Work Plan ; ISCO Pilot Test and Monitoring Well Installation, Combined Landfill Area Groundwater	CB&I	SEP-2013
SWMU 164 In Situ Chemical Oxidation Re-injection Letter Work Plan, Former Building 202, Underground Storage Tank Site	CB&I	SEP-2013
SWMU 168 In Situ Chemical Oxidation Re-Injection Letter Work Plan, Former Prisoner of War Camp	CB&I	SEP-2013

IRP Previous Studies

2013	Title	Author	Date
	SWMU 164 Draft Final Presumptive Remedy Annual Progress Report, 2013, Former Building 202, Underground Storage Tank Site	CB&I	SEP-2013
	SWMU 109 Draft Final Revision 1 Corrective Measures Implementation Work Plan, Former Waste Oil UST and Former Oil/Water Separator, Building 1392	Summit	SEP-2013
	SWMU 167 Draft Final Corrective Measures Implementation Work Plan for North Specker Avenue, RV2	CB&I	SEP-2013
	SWMU 109 Draft Final Corrective Measures Study Report, Former Used/Waste Oil UST and Former Oil/Water Separator, Building 1392	Summit	NOV-2013
	SWMU 89 Corrective Measures Implementation (CMI) Quarterly Report (July & September 2013), Former Used/Waste Oil UST, Building 9609	Summit	NOV-2013
	SWMU 4 Draft Final 2013 Annual Monitoring Summary, Landfill 4	CB&I	NOV-2013
	SWMU 168 Draft Final Presumptive Remedy Annual Progress Report 2013, Former Prisoner of War Camp	CB&I	DEC-2013
	CLA Draft Final Quarterly Monitoring Report, Third Quarter 2013 Combined Landfill Area	CB&I	DEC-2013
2014			
	SWMU 16/53 Draft Final Corrective Measures Implementation Work Plan for Former Waste Oil/Solvents USTs Building 8000 and Former Vapor Degreaser, RV1	CB&I	JAN-2014
	CLA Draft Final Corrective Measures Implementation Work Plan, Combined Landfill Area Groundwater	CB&I	FEB-2014
	SWMU 2/3 Draft Final 2013 Post-Closure Annual Monitoring and Maintenance Report, Landfill 2/3	CB&I	FEB-2014
	SWMU 89 Draft Final Pilot Injection Program, Insitu Reductive Dechlorination, Former Used/Waste Oil UST, Building 9609	Summit	FEB-2014
	SWMU 89 Draft Final Pilot Injection Program, Insitu Reductive Dechlorination, Former Used/Waste Oil UST, Building 9609	Summit	FEB-2014
	SWMU 2/3 Draft Final Construction Completion Report, Landfill 2/3, Revision 1	CB&I	FEB-2014
	SWMU 78 Draft Final Remedy Completion Report, Former Waste Oil USTs and Former Oil/Water Separator, Building 3192	Summit	FEB-2014
	Draft Final Solid Waste Management Unit Assessment Report, Former Sludge Drying Bed	Summit	FEB-2014
	SWMU 23/24 Quarterly Report, Fourth Quarter 2013, Butts East Combined Sites Groundwater, Sewage Treatment Lagoons and Fire Training Area	CB&I	MAR-2014
	CLA Draft Final Quarterly Monitoring Report, Fourth Quarter 2013, Combined Landfill Area	CB&I	MAR-2014
	SWMU 79 Draft Final 2013 Annual Compliance Monitoring Report Former Oil/Water Separator, Building 3292	Summit	MAR-2014
	SWMU 78 Draft Final Revision 1 Remedy Completion Report, Former Waste Oil USTs and Former Oil/Water Separator, Building 3192	Summit	MAR-2014

IRP Previous Studies

2014

Title	Author	Date
SWMU 9 Draft Final 2013 Annual Monitoring and Maintenance Report for Landfill 9	CB&I	APR-2014
SWMU 23/24 Quarterly Report, Third Quarter 2013, Butts East Combined Sites Groundwater, Sewage Treatment Lagoons and Fire Training Area, RV1	CB&I	APR-2014
SWMU 8 Draft Final 2013 Post-Closure Annual Monitoring and Maintenance Report for Landfill 8	CB&I	APR-2014
SWMU 5 Draft Final Annual Monitoring and Maintenance Report 2013 Landfill 5	CB&I	APR-2014
CLA Final Corrective Measures Implementation Work Plan, Combined Landfill Area Groundwater	CB&I	MAY-2014
SWMU 16/53 Final Corrective Measures Implementation Work Plan, Former Waste Oil/Solvent USTs, Building 8000 and Former Vapor Degreaser	CB&I	JUN-2014
CLA Final Corrective Measures Implementation Work Plan, Combined Landfill Area Groundwater	CB&I	JUN-2014
SWMU 14 Final Post-Closure Monitoring and Maintenance Plan for Landfill 14	CB&I	JUN-2014
SWMU 2/3 Draft Final Post-Closure Monitoring and Maintenance Plan for Landfills 2/3, RV 1	CB&I	JUL-2014
SWMU 8 Final 2013 Post-Closure Annual Monitoring and Maintenance Plan for Landfill 8, RV1	CB&I	JUL-2014
SWMU 5 Draft Final 2013 Annual Monitoring and Maintenance Report for Landfill 5, RV1	CB&I	JUL-2014
SWMU 8 Draft Final 2013 Post-Closure Annual Monitoring and Maintenance Report for Landfill 8, RV 1	CB&I	JUL-2014
SWMU 89 - Corrective Measures Implementation (CMI) Quarterly Report (April- June 2014) Former UST at Bldg 9609	Summit	AUG-2014
SWMU 23/24 - Quarterly Progress Report, Second Quarter 2014, Butts East Combined Sites, Groundwater, Sewage Treatment Lagoons and Fire Training Area	CB&I	SEP-2014
SWMU 16/53 - Quarterly Progress Report, Second Quarter 2014, Former Waste Oil/Solvent USTs, Bldg 8000 and Former Vapor Degreaser	CB&I	SEP-2014
SWMU 164 - Draft Final Presumptive Remedy Annual Progress Report - 2014, Former Bldg 202 UST site	CB&I	SEP-2014
SWMU 167 - Quarterly Progress Report, Second Quarter 2014, North Specker Avenue	CB&I	SEP-2014
SWMU 23/24 - Bedrock Elevation Map Update for the Quarterly Progress Report, Q413, Butts East Combined Sites Groundwater, Sewage Treatment Lagoons	CB&I	OCT-2014
SWMU 7 - Final Construction Completion Report, Landfill 7	CB&I	OCT-2014
SWMU 14 - Final Construction Completion Report, Landfill 14	CB&I	OCT-2014
SWMU 89 - Corrective Measures Implementation (CMI) Quarterly Report (July - September 2014) Former UST at Bldg 9609	Summit	NOV-2014
SWMU 109 - Corrective Measures Implementation (CMI) Quarterly Report (July - August 2014) Former UST at Bldg 1392	Summit	NOV-2014

2015

IRP Previous Studies

2015

Title	Author	Date
SWMU 23/24 - Quarterly Progress Report, Third Quarter 2014, Butts East Combined Sites Groundwater and Sewage Treatment Lagoons	CB&I	JAN-2015
MU 16/53 - Quarterly Progress Report, Third Quarter 2014, Former Waste Oil/Solvent USTs, Bldg 8000 and Former Vapor Degreaser	CB&I	JAN-2015
SWMU 13 - Quarterly Progress Report, Third Quarter 2014, Grit/Oil Pit CLA Groundwater	CB&I	JAN-2015
SWMU 167 - Quarterly Progress Report, Third Quarter 2014, North Specker Avenue	CB&I	JAN-2015
SWMU 79 - Draft Final 2014 Annual Compliance Monitoring Report Former Oil/water separator, Bldg 3292	Summit	FEB-2015
SWMU 89 - Corrective Measures Implementation (CMI) Quarterly Report (October-December 2014) Former UST Bldg 9609	Summit	FEB-2015
SWMU 13 - Quarterly Construction Progress Report, Fourth Quarter 2014, Grit/Oil Pit CLA Groundwater	CB&I	MAR-2015
SWMU 5 - 2014 Post-Closure Annual Monitoring and Maintenance Report for Landfill 5	ECC	MAR-2015
SWMU 16/53 - Quarterly Construction Progress Report, Fourth Quarter 2014, Building 8000 and Former Vapor Degreaser	CB&I	MAR-2015
SWMU 9 - 2014 Post-Closure Annual Monitoring and Maintenance Report for Landfill 9	ECC	MAR-2015
SWMU 164 - Quarterly Progress Report, Fourth Quarter 2014, Former Building 202 UST site	CB&I	MAR-2015
SWMU 109 - Draft Final Revision 1 Pilot Injection Program, Enhanced Reductive Dechlorination, Former UST and Separator at Bldg 1392	Summit	APR-2015
SWMU 13 - Quarterly Construction Progress Report, First Quarter 2015, Grit/Oil Pit CLA Groundwater	CB&I	MAY-2015
SWMU 109 - Corrective Measures Implementation (CMI) Quarterly Report (January - March 2015) UST and Separator at Bldg 1392	Summit	MAY-2015
SWMU 16/53 - Quarterly Construction Progress Report, First Quarter 2015, Former Waste Oil UST Bldg 8000 and Former Vapor Degreaser	CB&I	MAY-2015
SWMU 89 - Corrective Measures Implementation (CMI) Quarterly Report (January - March 2015) Former Used/Waste Oil UST, Building 9609	Summit	MAY-2015
SWMU 168 - 2014 Presumptive Remedy Annual Progress Report, Former Prisoner of War Camp	CB&I	JUN-2015
SWMU 167 - First Quarter 2015 Quarterly Progress Report, North Specker Plumes Site	ECC	JUN-2015
SWMU 23/24 - First Quarter 2015 Quarterly Progress Report, Butts East Combined Sites	ECC	JUN-2015

FORT CARSON

Installation Restoration Program

Site Descriptions

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Explosives, Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	198210.....	198301
CS.....	199503.....	199811
RFI/CMS.....	199605.....	201109
DES.....	200910.....	201210
IRA.....	199209.....	199212
CMI(C).....	201110.....	201212
CMI(O).....	201110.....	201409
LTM.....	201410.....	204401

RIP Date: 201212

RC Date: 201409

SITE DESCRIPTION

Landfills 2 and 3 (SWMUs 2/FTC-006 and 3/FTC-007) were combined for tracking purposes under FTC-006, and are former contiguous landfills located east of the cantonment area that were operated from 1957 to 1978. Both landfills were properly closed in accordance with solid waste regulations at the time landfill operations ceased. The RFA conducted in 1994 then identified this site for inclusion in the RCRA Hazardous Waste permit. Therefore, all investigation and remediation is being conducted under the Corrective Action Program. Waste at this site consists of sanitary waste, sludges from multiple sources, waste POL, cinder ash and potentially, explosives and unexploded ordnance (UXO). A combined trench and area fill method was used at this 80-acre site. Part of the landfill (approximately 50 acres) is currently covered with a soil cover.

Surface water control measures were installed in 1992. Grading activities were conducted in 1998 and 2000 to further control surface water. Groundwater monitoring results indicate that no significant impacts to the surrounding environment have resulted from the past Landfill 2 operations. Methane levels at the unit boundary in one permanent soil gas probe were detected above the 5 percent permitted under solid waste regulations.

The RFI report was approved in November 2005, a CMS was imposed and requested for further delineation of methane at one soil gas monitoring probe. The Draft Final Methane Evaluation Letter Work Plan was submitted to CDPHE in February 2006. The methane evaluation and installation of additional permanent probes was performed in 2006. A methane monitoring plan was submitted. Quarterly soil gas monitoring of existing permanent probes and annual groundwater monitoring was also performed. At the request of CDPHE, two additional downgradient groundwater monitoring wells were installed in 2008.

As of January 2013 a modified evapotranspiration (ET) cap was completed at this site. The Final Construction Completion Report was submitted to CDPHE and was approved in September 2014 and then LTM was initiated in late FY14.

CLEANUP/EXIT STRATEGY

Per the Colorado regulations outlining post-closure care and monitoring and cover maintenance post PBA LTM will occur for a minimum of 30 years.

Remedial construction (landfill cover) and remedial operation (groundwater monitoring and cover maintenance) all funded under the PBA through FY20.

Cost-to-complete (CTC) assumption:
-PBA LTM (cover maintenance and monitoring) based on the PBA amount for this site multiplied by 30 years.

Site ID: FTC-008
Site Name: LANDFILL 4 (1957)

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Soil, Surface Water

Phases	Start	End
RFA.....	198210.....	198301
CS.....	199503.....	199812
RFI/CMS.....	199810.....	200409
LTM.....	200410.....	204509

RIP Date: N/A

RC Date: 200409

SITE DESCRIPTION

FTC-008, Landfill 4 (SWMU 4) is located in the northeast section of the cantonment area. According to historical records, Landfill 4 covered approximately 14 acres. The landfill was excavated into the alluvium and operated for about six months in 1957 to receive construction debris, sanitary wastes and possibly small amounts of sludge and waste petroleum, oil, and lubricants. The presence of shallow groundwater (less than 5 feet) forced the landfill to be abandoned. The Defense Reutilization and Marketing Office (DRMO) Storage Yard (FTC-024, SWMU 50) was subsequently built over the former landfill. This landfill was properly closed in accordance with solid waste regulations at the time landfill operations ceased. The RFA conducted in 1994 then identified this site for inclusion in the RCRA Part B permit. Therefore, all investigation and remediation is being conducted under the Corrective Action Program.

Groundwater monitoring indicated metals and VOCs below Colorado Groundwater Standards (CGWS) in the vicinity of this site. In 2002, an existing well was over drilled to collect samples of the polyvinyl chloride casing for analysis of vinyl chloride to determine if the well casing was degrading and the cause of vinyl chloride in groundwater. Analytical results indicated concentrations below the laboratory practical limits.

The RFI report (revision 2) was approved in October 2003 and no CMS was imposed. Annual groundwater monitoring and inspections of the asphalt cover are currently being performed. The Monitoring Maintenance Plan was submitted in 2006 and the Remedy Selection Report was submitted in April 2007.

The CDPHE selected the remedy (existing asphalt cap) and required land use and additional controls for Landfill 4 in a September 2008 permit modification. As part of normal maintenance operations, the FTC Directorate of Public Works (DPW) initiated repair and repaving of the southern portion of the asphalt cap. These maintenance operations were completed in 2008.

The LTM began in 2004 (FY05). A PBA contract was awarded in July 2008 and the PBA contractor continues to perform annual monitoring in accordance with the monitoring and maintenance plan.

CLEANUP/EXIT STRATEGY

Per the Colorado regulations outlining post-closure care and maintenance, LTM must be conducted for a minimum of 30 years. LTM for monitoring and cap maintenance will continue under the PBA through FY20.

CTC assumptions:

- PBA LTM for an additional 20 years.
- Site-wide five-year reviews for the following sites in LTM are also tracked under this site (FTC-009, FTC-013, FTC-012, CCSW001, CCSW170, FTC-006, FTC-011, and FTC-026).

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Soil, Surface Water

Phases	Start	End
RFA.....	198210.....	198301
CS.....	199503.....	199707
RFI/CMS.....	199605.....	200412
IRA.....	199805.....	200010
CMI(C).....	200001.....	200412
LTM.....	200412.....	203410

RIP Date: N/A

RC Date: 200412

SITE DESCRIPTION

FTC-009, Landfill 5 (SWMU 5) is an abandoned landfill located in the northeast corner of the cantonment area, close to the installation boundary, covering 20 acres. It was operated from 1946 to 1956. Historical records indicate accepted wastes included construction debris, mixed sanitary waste, waste POL, waste from the old mule barn area, coal cinders and ash. This landfill was properly closed in accordance with solid waste regulations at the time landfill operations ceased. The RFA conducted in 1994 then identified this site for inclusion in the RCRA Part B permit. All investigation and remediation were conducted under the Corrective Action Program. The RFI report was approved by CDPHE in Sept 2001.

A composite cap (interim corrective measure) with asphalt surface was installed in fall 1999 over 5 acres of the site to manage storm water runoff and facilitate vehicle parking. In 2000, an ET cap [interim remedial action (IRA)] was installed over 15 acres and upgradient and downgradient wells were installed.

Elevated levels of methane have been detected in soil gas probes east of the motorpool cap; however, wind-driven turbines placed on select gas probes have been effective in venting the elevated levels. New soil gas monitoring probes were installed in August 2004 and are sampled quarterly in accordance with the approved corrective action work plans.

The ET cap was approved by CDPHE in November 2004, following additional soil classification and cap installation investigation activities. In December 2004, the CDPHE approved the Final Initial Groundwater Investigation Summary Report. No CMS was imposed, acknowledging that Landfill 5 has not contributed to groundwater contamination above screening levels downgradient of the landfill.

Remedy phase of corrective action was completed and is now undergoing the LTM phase. In October 2005, a five-year review of the monitoring and maintenance results since 2000 was conducted with CDPHE and revisions were made to the long-term monitoring and maintenance work plans.

During construction of the respective landfill caps, two groundwater seeps were located in the southern portion of the landfill. French drains were constructed to drain the seep water away from the landfill during construction. In July 2005, FTC recommended the existing french drain at the geotextile cap be reconnected and allowed to discharge to B-Ditch as a second outfall at Landfill 5 under the existing National Pollutant Discharge Elimination System (NPDES) permit (designated as outfall 007). USEPA approved the request in March 2006 and the revised permit was effective from April 1, 2006 to March 21, 2011. There has never been any discharge observed at outfall 007.

In 2007, video camera inspections of the methane vent system indicated that portions of the vent piping were crushed and that water was entering the system, partially obstructing the vents. Water was pumped out of the vent system and a second video survey was conducted to determine the extent of damage to the piping.

Site ID: FTC-009
Site Name: LANDFILL 5 (1946-1956)

The associated methane monitoring system located in Building 8930 was inspected in 2007 and found to be nonoperational. The control unit was repaired and reinstalled and is now fully operational. Currently methane concentrations are below 5 percent at the Landfill 5 boundary soil gas monitoring wells.

The PBA contractor is currently performing monitoring activities in accordance with the monitoring and maintenance plan. The site is currently undergoing LTM.

CLEANUP/EXIT STRATEGY

Per the Colorado regulations outlining post-closure care and maintenance LTM must be conducted for a minimum of 30 years.

LTM for monitoring and cover maintenance will continue through FY20 under the current PBA contract.

Cost assumptions:

- PBA LTM (landfill cap maintenance and monitoring) for an additional 19 years.

Site ID: FTC-011

Site Name: LANDFILL 7 (1968-1978)

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Soil, Surface Water

Phases	Start	End
RFA.....	198210.....	198301
CS.....	199810.....	199812
RFI/CMS.....	200312.....	201109
DES.....	201010.....	201305
CMI(C).....	201302.....	201401
CMI(O).....	201302.....	201410
LTM.....	201411.....	204411

RIP Date: 201401

RC Date: 201410

SITE DESCRIPTION

FTC-011, Landfill 7 (SWMU 7) is an inactive landfill located within the Landfill 1 certificate of designation and has been included as part of the Combined Landfill Area (CLA) investigation. It operated as a canyon fill landfill from 1968 to 1978, accepting construction debris and other material. The total area of the landfill is 6 acres, which currently has a soil cover. This landfill was properly closed in accordance with solid waste regulations at the time landfill operations ceased. The RFA conducted in 1994 then identified this site for inclusion in the RCRA Part B permit. Therefore, all investigation and remediation is being conducted under the Corrective Action Program.

The CLA RFI Report was submitted to CDPHE in June 2004 and approved in August 2004, at which time a CMS was imposed. The Final CMS Work Plan was approved in September 2007. Geotechnical samples to support landfill cap design were collected in December 2007. Field data from the sampling effort was submitted to CDPHE for review and their initial comments indicated that the incumbent contractor needed to provide additional data analysis. After several extension requests CDPHE's comments were resolved and future actions for remedial construction and remedial operation at this site was to be conducted under a PBA contract awarded in July 2008.

In September 2009, the Final Proposed Soil Strength Testing Work Plan was submitted to CDPHE and approved in September 2009. Geotechnical sampling was completed to support the remedy selection. Per the Fort Carson Hazardous Waste Part B Permit, the PBA contractor is performing quarterly monitoring and maintenance activities at the CLA and submitted a draft final CMS addendum in FY11. The Final Presumptive Remedy Work Plan (PRWP) 100 percent design document was submitted to CDPHE in June 2013 and approved in August 2013.

As of January 2014, the construction of the landfill cap was completed and Final Construction Completion Report was approved November 2014. Long-term monitoring began in FY15. A new PBA contract was awarded in late 2014 and will cover long term maintenance at all landfill sites.

CLEANUP/EXIT STRATEGY

Per Colorado regulations outlining post-closure care and maintenance, LTM (landfill cap maintenance and monitoring) will occur for a minimum of 30 years.

The cleanup strategy includes remedial construction (landfill cover) and remedial operation (cover maintenance and monitoring) funded under the PBA through FY20.

CTC assumptions:

- PBA LTM (cover monitoring and maintenance) based on the PBA amount for this site multiplied by 30 years.

STATUS

Regulatory Driver: RCRA
RRSE: LOW
Contaminants of Concern: Volatiles (VOC)
Media of Concern: Groundwater, Surface Water

Phases	Start	End
RFA.....	198210.....	198301
CS.....	199805.....	199912
RFI/CMS.....	199910.....	200909
DES.....	200807.....	201011
CMI(C).....	201012.....	201206
CMI(O).....	201110.....	201206
LTM.....	201206.....	204206
RIP Date:	201206	
RC Date:	201206	

SITE DESCRIPTION

Landfill 8 (SWMU 8) consists of two canyon fill landfills, which operated from 1972 to 1973. These areas total approximately 13 acres and received construction and demolition debris. This landfill was properly closed in accordance with solid waste regulations at the time landfill operations ceased. The RFA conducted in 1994 identified this site for inclusion in the RCRA Part B permit. Therefore, all investigation and remediation is being conducted under the Corrective Action Program and in accordance with Subtitle D regulations.

This landfill is located directly north of Landfill 2/3 (SWMU 2/3). RFI fieldwork activities were conducted in 2002 and included trenching, soil gas monitoring, and groundwater monitoring well installation (all dry).

RFI data demonstrates minimal impacts to soil, groundwater and surface water. However, VOCs below CGWS have been detected in two downgradient wells.

The RFI report was submitted in July 2003 and approved in June 2004. A CMS was not imposed for this SWMU. A work plan evaluating the cover for thickness, erosion and drainage adequacy was approved by CDPHE in March 2005.

The cover evaluation was performed in late 2005 and the cover evaluation summary report, which included a risk evaluation, was reviewed in September 2006 and additional revisions were submitted.

In December 2007, CDPHE provided additional and extensive comments regarding slope stability, erosion control, vegetation, and final land use. FTC's mission to train military personnel may impact the ability to achieve response complete for this unit.

Cover construction activities began in the fall of 2011 and the Final Construction Completion Report was approved by CDPHE in June 2012. As of June 2012, the site is currently undergoing LTM. The Final Postclosure Monitoring and Maintenance Plan was approved in August 2012. Under the PBA, the LTM for monitoring and cover maintenance (landfill cap maintenance and monitoring); which began after the construction completion report was approved in June 2012.

CLEANUP/EXIT STRATEGY

Per the Colorado regulations outlining post-closure care and maintenance LTM must be conducted for a minimum of 30 years.

LTM for monitoring and cover maintenance will continue through FY20 under the current PBA contract.

Cost assumptions:
- PBA LTM (landfill cap maintenance and monitoring) for an additional 26 years.

Site ID: FTC-013

Site Name: LANDFILL 9 (1965-1973)

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Soil, Surface Water

Phases	Start	End
RFA.....	198210.....	198301
CS.....	199801.....	199901
RFI/CMS.....	200210.....	200703
DES.....	200703.....	200705
CMI(C).....	200705.....	200706
LTM.....	200707.....	203610

RIP Date: N/A

RC Date: 200706

SITE DESCRIPTION

FTC-013, Landfill 9 (SWMU 9) is a 6.5-acre, abandoned landfill located south of the cantonment area. The specific nature of activities conducted during the landfill's period of operation (1965 to 1973) is unknown, but most likely consisted of receiving construction debris. This landfill was properly closed in accordance with solid waste regulations at the time landfill operations ceased. The RFA identified this site for inclusion in the RCRA Part B permit. Therefore, all investigation and remediation is being conducted under the Corrective Action Program.

Two temporary wells were installed downgradient of the landfill during the RFA. Groundwater samples collected from these wells contained metals below CGWS, but above interim background levels established at the time.

The RFI was finalized in spring 2006. Results of soil gas monitoring performed two quarters following completion of the RFI fieldwork to fulfill one year of monitoring did not detect landfill gases.

The CMS, which included a cover evaluation, was approved January 2007. It recommended additional cover material to meet the 24 inch depth requirement and additional sloping to meet erosion and drainage requirements. These requirements have been implemented and the landfill is being used as a solar panel farm. A remedy completion report was submitted and CDPHE provided additional and extensive comments regarding the accompanying engineering documentation.

The PBA contractor will continue monitoring and maintenance activities and long-term management requirements including groundwater and soil gas monitoring. LTM consisting of monitoring and cover maintenance began in FY07.

CLEANUP/EXIT STRATEGY

Per the Colorado regulations outlining post-closure care and maintenance, LTM must be conducted for a minimum of 30 years.

The PBA will address all requirements (landfill cover maintenance and monitoring) through FY20.

CTC assumptions:

PBA LTM (landfill cover maintenance and monitoring) is based on the PBA amount for this site multiplied by 22 years.

Site ID: FTC-020
Site Name: GRIT OIL PIT

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Groundwater, Soil, Surface Water

Phases	Start	End
RFA.....	198803.....	198804
CS.....	199511.....	199901
RFI/CMS.....	199511.....	201307
DES.....	201308.....	201308
IRA.....	199909.....	200509
CMI(C).....	201409.....	201507
CMI(O).....	201507.....	202908
LTM.....	202909.....	203209

RIP Date: 201507

RC Date: 202908

SITE DESCRIPTION

The Grit/Oil Pit (SWMU 13) is located within the landfill certificate of designation and has been included as part of the CLA investigation. This site was an open pit where FTC deposited material from the vehicle wash facilities and sludge from the industrial and sanitary wastewater treatment plant. The operations were conducted from the 1960s to 1992. The material was placed in a trench measuring 240 by 60 by 30 feet. This site was included in both the 1994 and 1997 compliance orders on consent.

Samples indicated the presence of metals, VOCs (including TCE, vinyl chloride, BTEX), and PAH in the sludge, surrounding soil, and leachate/groundwater immediately downgradient of the site.

In 1998 a surface water control measure (temporary cap) was placed over the pit to reduce the infiltration of surface water. In 1999 water and product removal commenced and the oily product was successfully removed from the pit. In March 2000 the RFI was approved by the CDPHE. In 2002 a soil vapor extraction (SVE) pilot test was completed and considered moderately successful in reducing the concentrations of VOCs in the pit material.

In July 2004 the CDPHE approved an interim measure (IM) source removal work plan. Between November 2004 and January 2005 the contents of the Grit/Oil Pit were removed. Analytical results of the confirmatory soil samples collected from the excavation following removal were below FTC site-specific risk-based screening levels.

The Draft Final CLA CMS Work Plan (Earth Tech, 2006) for impacts to groundwater was submitted to CDPHE in March 2006. CDPHE suspended all work on the CMS work plan in December 2006 until additional investigation of Landfill 1 was completed and Phase III of the investigation was submitted to CDPHE in December 2008. The Grit/Oil Pit is currently undergoing interim monitoring. Monitoring results indicate the presence of 1,4-dioxane in addition to previously reported metals and VOCs.

Work is conducted under a PBA that was awarded in July 2008. The PBA contractor submitted a Draft Final CMS Work Plan to CDPHE in June 2012 and approved in June 2012. The CMI Work Plan was approved in May 2014. CDPHE issued a Draft Permit Mod on Feb. 13, 2014 selecting the remedy at FTC-020. The permit mod was finalized in April 2014.

CDPHE issued a Permit Modification in November 2014 selecting the remedy at FTC-020; although the remedy was selected in April 2014, contractual issues have caused this site to be delayed. As of March 2015, construction of the remedy resumed and it is anticipated that construction of the remedy will be complete by August 2015.

Site ID: FTC-020
Site Name: GRIT OIL PIT

CLEANUP/EXIT STRATEGY

The permit modification shows remedial operations monitoring CMI(O) occurring for 14 years and LTM for monitoring and cover maintenance occurring for three consecutive years.

The cleanup strategy includes remedial construction (groundwater treatment) and remedial operation (monitoring) funded under the PBA through FY20.

CTC assumptions:

- PBA remedial operations monitoring (CMI(O)) will occur for 14 years
- PBA LTM for monitoring and cover maintenance will occur for three consecutive years.

Site Name: ABANDONED FIRE TRAINING AREA

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	198803.....	198804
CS.....	199504.....	199810
RFI/CMS.....	199605.....	201009
DES.....	200807.....	201210
IRA.....	200106.....	200108
CMI(C).....	200807.....	201308
CMI(O).....	200807.....	201709
LTM.....	201710.....	202010

RIP Date: 201308

RC Date: 201709

SITE DESCRIPTION

FTC-21 (SWMU 24) consists of two different FTC site numbers, the Fire Training Area (FTC-021) and Fire Training Storage Area (FTC-022). The two sites were combined under one AEDB-R number because they are contiguous.

FTC-021 was a 60 by 60 by 3 feet deep concrete basin (which was removed in 1996) located at the east end of Butts Army Airfield. Burns were conducted from the 1960s to 1993. The water and fire-retardant chemicals used in the exercises were discharged to an oil/water separator, which discharged to the adjacent sewage treatment lagoon (FTC-039).

The former storage area, where off-specification/waste fuels were stored for exercises at the adjacent fire training area, was used from the 1970s to 1992. The storage area is located east of the former Fire Training Area.

In 1992, the US Army Corps of Engineers Research Laboratories conducted a sludge study. Samples collected from the oil/ water separator detected metals, chlorinated VOCs (solvents), and total petroleum hydrocarbons (TPH). The oil/water separator was removed in 2000. Groundwater samples taken in 1995 through 2000 indicated PCE above CGWS [5 micrograms per liter (ug/L)] in several wells downgradient from the storage area.

In 2001, removal of the oil/water separator, separator contents and surrounding shallow soil was completed. Leaks were detected in the piping between the concrete structure and the oil/water separator resulting in solvent and POL-contaminated soil. In 2001 through 2003, additional soil and groundwater samples were collected at the site.

This site has been combined with the nearby Sewage Treatment Lagoons (SWMU 23/FTC-039) under one investigation, which is referred to as the Butts East Combined Sites (BECS) RFI. The BECS RFI was approved by CDPHE in April 2005 and a CMS imposed. The CMS work plan was submitted to CDPHE in July 2005 and approved on Dec. 30, 2005. Remedy-specific data gap fieldwork was performed in March 2006 and a draft final treatability study work plan (TSWP) was submitted to CDPHE in August 2007. Five additional wells were needed to better characterize the dimensions of the plume.

Soil excavation was required for VOCs, and soil excavation was completed February 2011.

A PBA was awarded in July 2008. It was anticipated that the contractor would revise the TSWP; however, the contractor performed an enhanced bioremediation study.

As of September 2009, CDPHE approved the Enhanced Bioremediation Study Work Plan and the PBA contractor commenced pilot test field construction activities as well as injection well installation. The draft final CMS was submitted to CDPHE in April 2012 and the final CMS was completed and approved in January 2013. A CMI work plan was submitted to CDPHE in January 2013 and was approved in March 2013.

Site ID: FTC-021

Site Name: ABANDONED FIRE TRAINING AREA

The RCRA Part B Permit issued in November 2014 shows two years of remedial operations is required. After review of the latest groundwater data it was determined in several meetings with regulators and the PBA consultant that compliance well concentrations have not met CGWS, thus two additional years of CMI(O)operations monitoring is required. Additionally, per the Part B Permit, after CGWS are met LTM will occur for three consecutive years.

CLEANUP/EXIT STRATEGY

The cleanup strategy includes a CMI(C) groundwater treatment and CMI(O) (monitoring) under the PBA through FY20.

CTC assumptions:

- PBA CMI(O) (monitoring) is based on the PBA amount for this site multiplied by five years.
- PBA LTM (monitoring) is based on the PBA amount for this site multiplied by three years.

Site Name: FORMER USED/WASTE OIL STORAGE TANKS

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Polycyclic Aromatic Hydrocarbons (PAH), Volatiles (VOC)

Media of Concern: Soil

Phases	Start	End
RFA.....	198210.....	198301
CS.....	199811.....	199904
RFI/CMS.....	199811.....	201403
IRA.....	200010.....	200306
CMI(C).....	201110.....	201609

RIP Date: N/A

RC Date: 201609

SITE DESCRIPTION

This site carries costs relating to SWMUs 79, 89, 108, and 109 as well as other site-wide costs including risk module updates and other support tasks which address all IR sites at FTC that are not captured in individual sites.

This site consists of 44 locations that contained one or more USTs and/or oil water separators and 13 locations containing ASTs, for a total of 57 separate solid waste management units (SWMU 55-111). Two of the oil water separators are active and remain in place. All of the other units have been removed. The USTs were used to store waste oil; however, it is possible that they may have received undocumented hazardous wastes at some time. Therefore, this site is regulated under RCRA, Subtitle C instead of I. Soil confirmation samples taken prior to removal were only analyzed for BTEX and total hydrocarbons. Thirteen of these locations were recommended to the CDPHE for no further action in 1994 through 1995; since the tanks were ASTs and are no longer in service their former locations could not be determined. CDPHE concurred.

The following SWMUs do not have costs associated with them; actions for these SMWUs have already been funded. Current site status is summarized below. While many of the SMWUs are currently in separate phases, they are all being tracked under the CMI(C) phase.

- a. Fifty-three USTs have been closed.
- b. Three sites (SWMUs 79, 89, 108) are currently in the remediation phase.

CLEANUP/EXIT STRATEGY

The SWMUs have already been funded; however, site-wide costs are captured under this site and consist of required documents that do not fall under a specific phase or site. SWMU 109 will be in the remediation phase by the end of FY16.

- CTC assumptions:
- USACE support
 - risk module updates
 - field/lab procedure manual updates, and
 - periodic reviews.

STATUS

Regulatory Driver: RCRA
RRSE: LOW
Contaminants of Concern: Metals
Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	198803.....	198804
RFI/CMS.....	200010.....	201109
DES.....	201010.....	201305
IRA.....	199309.....	199509
CMI(C).....	201302.....	201401
CMI(O).....	201302.....	201409
LTM.....	201410.....	204410
RIP Date:	201401	
RC Date:	201409	

SITE DESCRIPTION

FTC-026, Pete's Hill Dump (SWMU 14) is an inactive 13.5-acre landfill located within the Landfill 1 certificate of designation and has been included as part of the CLA investigation. From sometime before 1976 to the early-1990s, waste and construction debris were dumped over the head wall of a box canyon. Records indicate that the site received construction debris, municipal waste and washrack residuals. In 1992/1993, the area was re-contoured and covered to control surface water. Preliminary RFI activities were conducted in 2002.

Monitoring wells installed downgradient of Pete's Hill have detected metals above background levels but below groundwater standards.

The Final CMS Work Plan was submitted to CDPHE and approved in September 2007. Geotechnical samples to support landfill cap design were collected in December 2007. Field data from the sampling effort was submitted to CDPHE for review and their initial comments indicate that the incumbent contractor needs to provide additional data analysis.

A PBA was completed at FTC in July 2008. In September 2009 the Final Proposed Soil Strength Testing Work Plan was submitted to CDPHE and approved in September 2009. Additionally, geotechnical sampling was completed and supported the remedy selection. The Final PRWP 100 percent design document was submitted to CDPHE in June 2013 and approved in July 2013.

As of January 2014, construction of the landfill cap was completed and Final Construction Completion Report was approved November 2014. Long-term monitoring began in FY15. A new PBA contract was awarded in late 2014 and will cover long term maintenance at all landfill sites.

CLEANUP/EXIT STRATEGY

Per Colorado regulations outlining post-closure care and maintenance, LTM (landfill cap maintenance and monitoring) will occur for a minimum of 30 years.

The cleanup strategy includes remedial construction (landfill cover) and remedial operation (cover maintenance and monitoring) funded under the PBA through FY20.

CTC assumptions:
- LTM (cover monitoring and maintenance) is based on the PBA amount for this site multiplied by 30 years.

Site Name: Fmr Waste Oil/Solv USTs, Bldg 8000

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	198803.....	198804
CS.....	199703.....	199902
RFI/CMS.....	199902.....	201210
DES.....	201205.....	201310
IRA.....	199105.....	201110
CMI(C).....	201110.....	201506
CMI(O).....	201110.....	203006
LTM.....	203007.....	203307

RIP Date: 201506

RC Date: 203006

SITE DESCRIPTION

From 1973 to 1984, FTC stored used oil and solvents generated at the Bldg 8000 Maintenance Facility prior to disposal. FTC-033 (SWMU 53) consisted of two 25,600-gallon tanks and associated piping from Bldg 8000. The tanks were removed in June 1991, but the piping was left in place. A pump-and-treat system was installed in 1993 and then turned off in 1998 (unsuccessful).

Investigations around the tank pit between 1990 and 1993 identified petroleum hydrocarbons and chlorinated VOCs. This site was identified in the 1987 Compliance Order. In February 1997, soil samples were collected from within the tank pit and were found to contain chlorinated VOCs. Sampling in 1998 found hydrocarbon and chlorinated VOCs contamination in the tank pit and at the northern and southern manholes/piping. TCE has been found above CGWS in the vicinity of the tank pit and manholes. The RFI report was submitted to CDPHE in 2000.

The fluids remaining in the manholes were removed, the manholes were decontaminated, and the piping was plugged in 2001. Free-product recovery commenced as an IRA, and additional investigation upgradient of the northern manholes was performed to determine the source of chlorinated solvent contamination.

A work plan was submitted in February 2004 to evaluate groundwater conditions for the entire Bldg 8000 complex and determine if a relationship exists between this and nearby SWMUs. Groundwater cleanup and monitoring for the Former Vapor Degreaser (FTC-058/SWMU 16), also located at the Bldg 8000 Complex, will be addressed under SWMU 53 (FTC-033). This work plan was approved by CDPHE in November 2004 and the fieldwork was performed in late 2005. Evaluation of the field data with CDPHE in February 2006 identified the need for another field investigation. Annual groundwater monitoring is currently being performed.

The RFI was finalized in December 2007. Future actions at this site will be conducted under a PBA that was awarded in July 2008. A CMS Work Plan was submitted to CDPHE in July 2009 and was approved in August 2009. In FY11, the PBA contractor continued CMS fieldwork and report preparation. The Final CMI Work Plan was submitted to CDPHE in May 2014 and was approved in June 2014.

CDPHE issued a Permit Modification in November 2014; although the remedy selection was modified in April 2014, contractual issues have caused this site to be delayed. As of March 2015, construction of the remedy resumed and it is anticipated that construction of the remedy will be complete by August 2015.

CLEANUP/EXIT STRATEGY

The permit modification shows remedial operations monitoring CMI(O) occurring for 15 years and LTM for monitoring and cover maintenance occurring for three consecutive years.

Site ID: FTC-033

Site Name: Fmr Waste Oil/Solv USTs, Bldg 8000

The cleanup strategy includes remedial construction (groundwater treatment) funded under the PBA through FY20.

Per the RCRA Part B Permit, the CTC assumptions include the following:

- PBA CMI(O) (monitoring) based on the PBA amount for this site multiplied by five years.
- PBA LTM (monitoring) based on the PBA amount for this site multiplied by three years.

Site Name: FORMER VAPOR DEGREASER

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	198210.....	198301
CS.....	199503.....	199812
RFI/CMS.....	199801.....	201210
DES.....	201110.....	201310
IRA.....	199910.....	199912
CMI(C).....	201110.....	201506
CMI(O).....	201110.....	203006
RIP Date:	201506	
RC Date:	203006	

SITE DESCRIPTION

The Vapor Degreaser (SWMU 16) operated from the mid-1970s until 1992, when it was removed. Maintenance personnel used the vapor degreaser to clean parts with either TCE or 1,1,1-TCA (VOCs). The stainless steel vapor unit was located in a 7-foot deep concrete lined pit. The pit, located in Bldg 8000 (FTC-033/SWMU 53), is currently covered by a grate and used to control the wash water generated from general housekeeping activities within Bldg 8000 and the wash water that drips from the nearby Jet Spray Washers (FTC-058/SWMU 16).

Chlorinated VOCs have been detected in the soil below the pit in sampling events between 1992 and 1996, but groundwater was not encountered during the RFI activities. After the first phase of the RFI, CDPHE requested additional soil samples below the sump area. In November 1999, additional soil samples were taken and the sump and contaminated soil were removed. The sump excavation was backfilled with clean gravel and covered with concrete. During site restoration, two temporary wells were installed within the former sump excavation.

In 2001, water trapped in the former sump excavation was sampled and purged (total of 119 gallons) on a quarterly basis to determine if shallow groundwater or residual liquid was the source of the water. Due to fluctuating concentrations of chlorinated solvents and the volume of water purged each quarter, FTC was unable to discern if the source of the water was groundwater or residual wastewater.

The RFI report was submitted to the CDPHE in October 2002 and approved in November 2002, at which time a CMS was imposed. All work for SWMU 16 is addressed in a single comprehensive approach with SWMU 53 (FTC-033).

Future actions at this site will be conducted under a PBA that was awarded in July 2008. A CMS Work Plan was submitted to CDPHE in July 2009 and was approved in August 2009. In FY11, the PBA contractor continued CMS fieldwork and report preparation. The CMI Work Plan was submitted in May 2014 and approved in June 2014.

CDPHE issued a Permit Modification in November 2014; although the remedy selection was modified in April 2014, contractual issues have caused this site to be delayed. As of March 2015, construction of the remedy resumed and it is anticipated that construction of the remedy will be complete by August 2015.

CLEANUP/EXIT STRATEGY

The permit modification shows remedial operations monitoring CMI(O) occurring for 15 years and LTM for monitoring and cover maintenance occurring for three consecutive years.

Site ID: FTC-058

Site Name: FORMER VAPOR DEGREASER

The cleanup strategy includes a remedial construction (groundwater treatment) and remedial operation (monitoring) funded under the PBA through FY20.

CTC assumptions include the following:

- All work for SWMU 16 is addressed in a single comprehensive approach with SWMU 53 (FTC-033).
- PBA LTM monitoring will occur for a total of three consecutive years.

This is a zero-cost site.

Site ID: FTC-070
Site Name: UST near Building 202

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Metals, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	198801.....	198803
CS.....	199610.....	199912
RFI/CMS.....	200010.....	200910
DES.....	200807.....	200912
CMI(C).....	200807.....	200912
CMI(O).....	200807.....	201709
LTM.....	201710.....	202010

RIP Date: 200912

RC Date: 201709

SITE DESCRIPTION

The paint shop used this tank (SMWU 164, FTC-070) to hold paintbrush-cleaning chemicals. The building was removed in the late-1990s and the tank was removed in 1994. This site is now part of a vehicle parking lot.

Contents of the UST were determined to be POL products prior to removal. The excavation of contaminated soil was stopped after a chlorinated solvent was detected in one sample. Sampling in 1996-1997 did not encounter chlorinated solvents in soil or groundwater and POL concentrations were below regulatory limits. Bis(2-ethylhexyl) phthalate has been detected above Colorado groundwater standards.

The RFI report was submitted to CDPHE in January 2003. Based on their review, the CDPHE requested the installation of additional groundwater wells to assess the nature and extent of elevated concentrations of bis(2-ethylhexyl)phthalate detected in groundwater. The work plan to perform the additional work was submitted to CDPHE in August 2004, approved in September 2004 and implemented in November 2004. In March 2005, the Colorado groundwater standard was revised eliminating bis(2-ethylhexyl)phthalate as a contaminant of concern.

Two additional permanent groundwater monitoring wells were installed north and east of the former tank excavation in 2004 and PCE in concentrations exceeding CGWS have been identified. Additional RFI activities were performed in 2006. The RFI report was submitted in April 2007 and approved by CDPHE in July 2008.

A Draft Final Presumptive Remedy Work Plan was prepared under the performance-based contract and submitted to CDPHE in January 2009. A Final Presumptive Remedy Work Plan was submitted to the state in May 2009 and approved June 2009. Beginning in FY12, FTC has been performing monitoring and maintenance activities.

After review of the latest groundwater data it was determined in several meetings with regulators and the PBA consultant that compliance well concentrations continue to remain above CGWS, thus it was determined that two additional years of operations monitoring is required. Additionally, per the Part B Permit, after CGWS are met LTM will occur for three consecutive years.

CLEANUP/EXIT STRATEGY

CTC assumptions include the following:

- The PBA will address all requirements (groundwater remediation and monitoring) through FY20.
- PBA CMI(O) (monitoring) is based on the PBA amount for this site, multiplied by five years.
- LTM (monitoring) is based on the PBA amount for this site, multiplied by three years.

Site Name: North Specker Avenue Plumes

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Groundwater

Phases	Start	End
RFA.....	199703.....	199705
CS.....	199703.....	199705
RFI/CMS.....	199705.....	201210
DES.....	201110.....	201310
IRA.....	200103.....	200509
CMI(C).....	201110.....	201402
CMI(O).....	201303.....	201708
LTM.....	201709.....	202009

RIP Date: 201402

RC Date: 201708

SITE DESCRIPTION

FTC-083 (SWMU 167) was identified following sampling conducted with the UST removals at Bldg 749 (FTC-060). PCE and TCE were found in groundwater. Investigations performed along North Specker Avenue between 1994 and 2002 located a source area and defined the nature and extent of contamination. Benzene, bis(2-ethylhexyl)phthalate, chloroform, 1,1-dichloroethene, ethylbenzene, PCE, TCE, methylene chloride, pentachlorophenol, and vinyl chloride were detected in groundwater at concentrations exceeding CGWS. Four of the analytes (benzene, 1,1-dichloroethene, PCE, and TCE) have been detected over the course of the investigation and have a wide spatial distribution. PCE forms a plume that averages roughly 450 feet wide and 3,900 feet long. The source of the plume is attributed to several underground sand and grease traps.

In 2001, a pilot SVE/air sparging (AS) system was installed in the source area as an IRA, and four abandoned sand and grease traps with impacted soils were removed. The Draft Final RFI report was submitted to CDPHE in September 2002 and was conditionally approved pending an indoor air assessment of occupied buildings over the chlorinated VOC plume.

Indoor air assessments were performed in October 2003 and May 2004. An RFI Report Addendum summarizing the results of the indoor air assessment was submitted to CDPHE in October 2004. In December 2004, the CDPHE requested additional indoor air sampling at the Bldg 1044 to evaluate the elevated detection of TCE above risk-based screening criteria in the basement. The work plan for additional sampling was approved by CDPHE in February 2005 and implemented in May 2005.

In August 2005, CDPHE issued a compliance advisory related to the North Specker plume. The SVE/AS system was decommissioned in September 2005 and the CMS work plan for the North Specker contaminant plume was approved by CDPHE in March 2007. Fieldwork to address data gaps was conducted in 2007. Bench scale treatability study results were reported in January 2008. Actions at this site for remedial operation and LTM will be conducted under a PBA contract.

A Draft Final Corrective Measures Study Work Plan Addendum was prepared under the PBA and submitted to CDPHE in December 2008. A pilot test was conducted from 2009 to 2011 to evaluate the effectiveness of the proposed bioremediation for the site on a limited scale. In FY11, Fort Carson prepared a CMS and a CMI(C) work plan as well as an indoor air sampling work plan. The Draft Final CMS was submitted to CDPHE in December 2012 and CDPHE approved the document in January 2013. The Draft Final CMIWP was submitted in March 2013 and CDPHE approved the document in September 2013. Quarterly groundwater performance monitoring continues at the site. A final permit modification issued in November 2014 shows an additional four years of remedial operations is required and the operations monitoring began in 2013. Additionally, Per the Part B Permit, LTM for monitoring will occur for three consecutive years.

Site ID: FTC-083

Site Name: North Specker Avenue Plumes

CLEANUP/EXIT STRATEGY

CTC assumptions include the following:

- The PBA will address all requirements (groundwater remediation and monitoring) through FY20.
- PBA CMI(O) (monitoring) is based on the PBA amount for this site multiplied by five years.
- PBA LTM (groundwater monitoring) is based on the PBA amount for this site multiplied by three years.

Site ID: FTC-093

Site Name: Former POW Camp

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Explosives

Media of Concern: Soil

Phases	Start	End
RFA.....	200009.....	200011
CS.....	200009.....	200011
RFI/CMS.....	200011.....	200809
DES.....	200810.....	200906
CMI(C).....	200907.....	200912
CMI(O).....	201001.....	201311
LTM.....	201312.....	201611
RIP Date:	201001	
RC Date:	201311	

SITE DESCRIPTION

The Former prisoner-of-war Camp (SWMU 168, FTC-093) was not identified by FTC or CDPHE as an area of environmental concern and was not included in the initial Part B permit. In late July 2000, construction activities uncovered an orange-red substance from the underlying soil near the intersection of Mabry Court and Funk Avenue on the west side. These soils were located on the edge of what had at one time been a prisoner of war camp.

Analysis of the stained soils detected pentachlorophenol (PCP). Due to the potential of delaying the contractor that was doing the utility installation, the decision was made to excavate the impacted soil (approximately 75 cubic yards) with off-site disposal.

Following excavation, confirmatory samples detected low levels of PCP at the bottom of the excavation (greater than 20 feet below ground surface). Soil was excavated to bedrock. Groundwater was not encountered during excavation activities. The site was backfilled and a road was built over the site.

A draft final RFI report was submitted to CDPHE in January 2002. Based on comments, additional site investigations were performed in June 2004 to further evaluate the nature and extent of PCP. Results of the additional fieldwork further defined the location of the former excavation and identified 2,4-dinitrotoluene and n-nitroso-di-n-propylamine at concentrations above screening criteria in a soil sample collected outside of the former excavation. As a result, another work plan was previously submitted to further define the nature and extent of the PCP and the newly identified contaminants. The work plan was approved in May 2005 and fieldwork was performed in July 2005. All pentachlorophenol, n-nitroso-di-n-propylamine, and 2,4-dinitrotoluene soil results were non-detect; however, groundwater encountered and sampled from a boring advanced within the former excavation detected pentachlorophenol above the Colorado groundwater standard.

A Supplemental Letter Work Plan was submitted to CDPHE in January 2006 and approved in February 2006. Fieldwork was performed in April 2006. The RFI report was submitted in April 2007, and CDPHE provided comments in January 2008 that required additional fieldwork. A field sampling plan was submitted in June 2008 and approved by CDPHE in August 2008. A revised RFI was submitted in January 2009. Future work at this site is now conducted under the PBA, which was awarded in July 2008.

The RFI was approved in May 2009; however, the state responded that due to the contamination exceeding action levels, a CMS is required. A Presumptive Remedy Work Plan was submitted to CDPHE in July 2009 and approved October 2009. As of November 2009, baseline sampling began and remedy selection was made December 2009.

For this site, LTM and CMI(O) monitoring are equivalent due to concentrations falling below CGWS pushing the site into LTM. As of FY13, this site has been undergoing quarterly groundwater compliance monitoring.

Site ID: FTC-093
Site Name: Former POW Camp

CLEANUP/EXIT STRATEGY

CTC assumptions include the following:

- The PBA will address all requirements (groundwater treatment and LTM) through FY20.
- PBA CMI(O) (monitoring) is based on the PBA amount for this site multiplied by five years.
- LTM (monitoring) is based on the PBA amount for this site multiplied by three years.

Site ID: PBA@Carson
Site Name: PBA@Carson

STATUS

Regulatory Driver: RCRA
RRSE: LOW

Phases	Start	End
RFA.....	198210.....	198301
RFI/CMS.....	200807.....	201310
DES.....	200910.....	201310
CMI(C).....	201010.....	201412
CMI(O).....	201110.....	202010
RIP Date:	201412	
RC Date:	202010	

SITE DESCRIPTION

FTC awarded a PBA contract in July 2008 and again in July 2014 to address remediation at the following IR SWMUs (sites): 1 (CC SW170), 2/3 (006), 4 (008), 5 (009), 7 (011), 8 (012), 9 (013), 13 (020), 14 (026), 16 (058), 21 (CC SW021), 22 (CC SW022), 23 (CCSW023), 24 (021), 35 (CC SW035), 36 (075), 53 (033), 164 (070), 167 (083), 168 (093), 169 (CC SW169), 170 (CC SW170).

SWMUs 1, 21, 22, 23, 35, and 169 were transferred from the Army Environmental Database - Compliance-related Cleanup (AEDB-CC) to AEDB-R in July 2009. SWMU170 was transferred in April 2010.

The PBA includes remedial construction and operation and extends to FY20. Any additional funding requirements for the sites beyond FY20 are carried in the respective sites. This site also carries anticipated PBA oversight costs. All remedial construction tasks were fully funded in FY09 (with the exception of oversight).

PBA oversight continues for the operation phase and LTM will continue in the individual sites.

CLEANUP/EXIT STRATEGY

CTC assumptions include the following:

- PBA@FortCarson site will remain open through FY20. The PBA contract line item numbers (CLIN) for all involved sites are included.
- PBA oversight costs are also included.
- A significant portion of the PBA tasks has been awarded and will address remedial construction at the involved sites.
- The unawarded portion of the PBA includes remedial operations (monitoring and maintenance).

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FTC-005	LANDFILL 1	199901	This is an OMA site and was renamed AEDB-CC as CC SW001. CC SW001 is still undergoing remediation under CR.
FTC-010	LANDFILL 6 (1942-1946)	200001	This was an OMA site and was carried in AEDB-CC as CC SW006. CC SW006 is NFA.
FTC-014	Landfill 10	200008	NFA in Part B Permit, no investigation was required.
FTC-015	LANDFILL 11	200509	This was an OMA site and was carried in AEDB-CC as CC SW011. Site CC SW011 in NFA.
FTC-016	LANDFILL 12	199710	NFA in Part B Permit, no investigation was required.
FTC-017	Range 1, Open Burn Grounds	201209	NFA in Part B permit.
FTC-018	Range 1A, Open Burn Grounds	200606	NFA in Part B Permit based on investigation and risk assessment results.
FTC-019	Range 121, Open Detonation Grounds	199801	This was an OMA site and was carried in AEDB-CC as CC SW047.
FTC-024	DRMO, Inactive Haz Waste Stor Area	200509	NFA in Part B Permit based on investigation and risk assessment results.
FTC-025	Haz Waste & PCB Stor Fac, Bldg 9248	199612	This is an OMA site and is carried in AEDB-CC as CC SW049.
FTC-027	Range 123, Open Burn Grounds	200309	This is an OMA site and is carried in AEDB-CC as CC SW048.
FTC-028	Silver Recovery Unit, Bldg 6270	198804	NFA in Part B Permit, no investigation was required.
FTC-029	OLD ARMY HOSPITAL INCINERATOR	198804	NFA in Part B Permit, no investigation was required.
FTC-030	WASTE OIL BURNER BUILDING 1860	198804	NFA in Part B Permit, no investigation was required.
FTC-031	INDUSTRIAL WASTE WATER PLANT(ACTIVE)	199610	This is an OMA site and is carried in AEDB-CC as CC SW021.
FTC-032	Vehicle Wash Rack Storm Drainages	200609	NFA in Part B Permit based on investigation and risk assessment results.
FTC-034	Golf Course Sewage Trtmt Plt Efflu	199610	This is an OMA site and is carried in AEDB-CC as CC SW033.
FTC-035	Silver Recovery Unit, Bldg 6010	198804	NFA in Part B Permit, no investigation was required.
FTC-036	Golf Course Holding Pond	199610	This is an OMA site and is carried in AEDB-CC as CC SW032.
FTC-037	PHOTO SHOP SILVER RECOVERY UNIT	198804	NFA in Part B Permit, no investigation was required.
FTC-038	Silver Recovery Unit, Bldg 1800	198804	NFA in Part B Permit, no investigation was required.
FTC-039	SEWAGE TREATMENT LAGOONS AT BAAF	199612	This is an OMA site and is carried in AEDB-CC as CC SW023.
FTC-040	FORMER OPEN DUMPING AREA, RANGE 121	200308	This is an OMA site and is carried in AEDB-CC as CC SW025.
FTC-041	Fmr Long-Term Haz Waste Stor, 8000	200802	This was completed as a permit mod by CDPHE on Feb. 20, 2008.
FTC-042	SEWAGE TREATMENT PLANT(ACTIVE)	199704	This is an OMA site and is carried in AEDB-CC as CC SW022.
FTC-043	DIO Hazardous Waste Storage Area	200709	NFA in Part B Permit based on investigation and risk assessment results.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FTC-044	DRAINAGE DITCH, ADJACENT TO BUILDING 301	200412	NFA in Part B Permit based on investigation and risk assessment results.
FTC-045A	BATTERY ACID NEUTRALIZATION BLDG 8030	200509	NFA in Part B Permit based on investigation and risk assessment results.
FTC-045B	BATT. ACID NEUTRAL.-8000 (active)	199612	This is an OMA site and is carried in AEDB-CC as CC SW028.
FTC-045C	BATTERY ACID NEUTRALIZATION BLDG 8142	200509	NFA in Part B Permit based on investigation and risk assessment results.
FTC-046	Veterinary Clinic Incinerator	198804	NFA in Part B Permit, no investigation was required.
FTC-047	LAND SPREADING FIELD	200809	SWMU 19 remedy selection (NFA) was finalized on July 1, 2008
FTC-048	Demolition Area	200401	NFA in Part B Permit, little investigation was required.
FTC-049	Commissary Incinerator	198804	NFA in Part B Permit, no investigation was required.
FTC-050	Classified Doc Incnrtr, Bldg 1430	198804	NFA in Part B Permit, no investigation was required.
FTC-051	FORMER UST SITE, BLDG 9648	200408	This is an OMA site and is carried in AEDB-CC as CC 104.
FTC-052	FORMER UST SITE, BLDG 1092	199301	Remedied site through soil excavation.
FTC-053	FORMER UST SITE BLDG 7500	199005	Remedied site through soil excavation.
FTC-054	FORMER UST SITE, BLDG 8000	200002	Regulatory authority for this site was transferred from OPS to CDPHE because it is located within FTC-045A (SWMU 29)
FTC-055	FORMER UST SITE, BLDG 981	200106	Remedied site through soil excavation.
FTC-056	FORMER UST SITE, BLDG 1382	201212	This was an OMA site carried in AEDB-CC as CC 103.
FTC-059	IND WASTE TREAT. PLANT PONDS(ACTIVE SITE	199612	This is an OMA site and is carried in AEDB-CC.
FTC-060	FORMER UST SITE, BLDG 749	200002	Regulatory authority for this site was transferred from OPS to CDPHE because it is located within FTC-083 (SWMU 167)
FTC-061	FORMER UST SITE, BLDG 1392	200002	This is an OMA site and is carried in AEDB-CC.
FTC-062	FORMER UST SITE, BLDG 2392	200010	NFA based on remedial action.
FTC-063	FORMER UST SITE, BLDG 2492	200002	This is an OMA site and is carried in AEDB-CC as CC 063.
FTC-064	FORMER UST SITE, BLDG 2692	200002	NFA based on remedial action.
FTC-065	FORMER UST SITE, BLDG 2792	200002	NFA based on remedial action.
FTC-066	FORMER UST SITE, BLDG 3192	200012	This is an OMA site and is carried in AEDB-CC as CC 066.
FTC-067	FORMER UST SITE, BLDG 8200	200002	This is an OMA site and is carried in AEDB-CC as CC 067.
FTC-068	FORMER UST SITE, BLDG 8300	200207	NFA based on remedial action.
FTC-069	UST SITE, PINON CANYON MANEUVER SITE	200002	This is an OMA site and is carried in AEDB-CC as CC 106.
FTC-071	FORMER UST SITE, BLDG 1100	199912	Structure was a concrete vault and determined to not be regulated by OPS. No work was required.
FTC-072	FORMER UST SITE, BLDG 700	199912	Structure was a concrete vault and determined to not be regulated by OPS.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			No work was required.
FTC-073	EQUALIZATION BASIN, BLDG. 1399 (ACTIVE)	199612	This is an OMA site and is carried in AEDB-CC as CC SW026.
FTC-075	OLD CENTRAL WASH RACK	201303	NFA in Part B Permit, no further investigation is required.
FTC-076	Fort Carson Sewer System	199612	This is an OMA site and is carried in AEDB-CC as CC SW163.
FTC-077	Former Lime Pit Site in Bldg 8110	199507	This is an OMA site and is carried in AEDB-CC as CC SW165.
FTC-078	Wash Rack Site North of Bldg 8110	199612	This is an OMA site and is carried in AEDB-CC as CC SW166.
FTC-079	SLUDGE TRENCH PIT	200701	NFA in Part B Permit based on investigation and risk assessment results.
FTC-081	FORMER UST SITE, BLDG 638	199912	NFA based on remedial action.
FTC-082	FORMER UST SITE, BLDG 2992	199912	NFA based on remedial action.
FTC-088	BUILDING 1211	200105	This is an OMA site and is carried in AEDB-CC as CC SW169.

IRP Schedule

Date of IRP Inception: 198210

Past Phase Completion Milestones

1983

RFA (FTC-005 - LANDFILL 1, FTC-006 - LANDFILLS 2/3 (1960-1978), FTC-008 - LANDFILL 4 (1957), FTC-009 - LANDFILL 5 (1946-1956), FTC-010 - LANDFILL 6 (1942-1946), FTC-011 - LANDFILL 7 (1968-1978), FTC-012 - LANDFILL 8 (1972-1973), FTC-013 - LANDFILL 9 (1965-1973), FTC-014 - Landfill 10, FTC-015 - LANDFILL 11, FTC-016 - LANDFILL 12, FTC-017 - Range 1, Open Burn Grounds, FTC-018 - Range 1A, Open Burn Grounds, FTC-019 - Range 121, Open Detonation Grounds, FTC-023 - FORMER USED/WASTE OIL STORAGE TANKS, FTC-024 - DRMO, Inactive Haz Waste Stor Area, FTC-025 - Haz Waste & PCB Stor Fac, Bldg 9248, FTC-027 - Range 123, Open Burn Grounds, FTC-028 - Silver Recovery Unit, Bldg 6270, FTC-029 - OLD ARMY HOSPITAL INCINERATOR, FTC-030 - WASTE OIL BURNER BUILDING 1860, FTC-031 - INDUSTRIAL WASTE WATER PLANT(ACTIVE), FTC-032 - Vehicle Wash Rack Storm Drainages, FTC-035 - Silver Recovery Unit, Bldg 6010, FTC-036 - Golf Course Holding Pond, FTC-037 - PHOTO SHOP SILVER RECOVERY UNIT, FTC-038 - Silver Recovery Unit, Bldg 1800, FTC-039 - SEWAGE TREATMENT LAGOONS AT BAAF, FTC-041 - Fmr Long-Term Haz Waste Stor, 8000 , FTC-042 - SEWAGE TREATMENT PLANT(ACTIVE), FTC-043 - DIO Hazardous Waste Storage Area, FTC-045B - BATT. ACID NEUTRAL.-8000 (active), FTC-047 - LAND SPREADING FIELD, FTC-048 - Demolition Area, FTC-058 - FORMER VAPOR DEGREASER, FTC-059 - IND WASTE TREAT. PLANT PONDS(ACTIVE SITE, FTC-078 - Wash Rack Site North of Bldg 8110, PBA@Carson - PBA@Carson)

ISC (FTC-051 - FORMER UST SITE, BLDG 9648, FTC-054 - FORMER UST SITE, BLDG 8000, FTC-055 - FORMER UST SITE, BLDG 981, FTC-056 - FORMER UST SITE, BLDG 1382, FTC-061 - FORMER UST SITE, BLDG 1392, FTC-062 - FORMER UST SITE, BLDG 2392, FTC-063 - FORMER UST SITE, BLDG 2492, FTC-064 - FORMER UST SITE, BLDG 2692, FTC-065 - FORMER UST SITE, BLDG 2792, FTC-066 - FORMER UST SITE, BLDG 3192, FTC-067 - FORMER UST SITE, BLDG 8200, FTC-071 - FORMER UST SITE, BLDG 1100 , FTC-072 - FORMER UST SITE, BLDG 700 , FTC-081 - FORMER UST SITE, BLDG 638, FTC-082 - FORMER UST SITE, BLDG 2992)

1985

ISC (FTC-052 - FORMER UST SITE, BLDG 1092)

1988

CS (FTC-028 - Silver Recovery Unit, Bldg 6270, FTC-029 - OLD ARMY HOSPITAL INCINERATOR, FTC-030 - WASTE OIL BURNER BUILDING 1860, FTC-035 - Silver Recovery Unit, Bldg 6010, FTC-037 - PHOTO SHOP SILVER RECOVERY UNIT, FTC-038 - Silver Recovery Unit, Bldg 1800, FTC-046 - Veterinary Clinic Incinerator, FTC-049 - Commissary Incinerator, FTC-050 - Classified Doc Incnrtr, Bldg 1430)

ISC (FTC-069 - UST SITE, PINON CANYON MANEUVER SITE)

RFA (FTC-020 - GRIT OIL PIT, FTC-021 - ABANDONED FIRE TRAINING AREA, FTC-026 - PETE'S HILL, FTC-033 - Fmr Waste Oil/Solv USTs, Bldg 8000, FTC-034 - Golf Course Sewage Trtmt Pit Efflu, FTC-040 - FORMER OPEN DUMPING AREA, RANGE 121, FTC-044 - DRAINAGE DITCH, ADJACENT TO BUILDING 301, FTC-045A - BATTERY ACID NEUTRALIZATION BLDG 8030, FTC-045C - BATTERY ACID NEUTRALIZATION BLDG 8142, FTC-046 - Veterinary Clinic Incinerator, FTC-049 - Commissary Incinerator, FTC-050 - Classified Doc Incnrtr, Bldg 1430, FTC-070 - UST near Building 202, FTC-073 - EQUALIZATION BASIN, BLDG. 1399 (ACTIVE))

1990

ISC (FTC-053 - FORMER UST SITE BLDG 7500)

1991

ISC (FTC-068 - FORMER UST SITE, BLDG 8300)

INV (FTC-051 - FORMER UST SITE, BLDG 9648, FTC-052 - FORMER UST SITE, BLDG 1092, FTC-055 - FORMER UST SITE, BLDG 981, FTC-056 - FORMER UST SITE, BLDG 1382)

CAP (FTC-051 - FORMER UST SITE, BLDG 9648)

1993

CAP (FTC-055 - FORMER UST SITE, BLDG 981)

IRA (FTC-006 - LANDFILLS 2/3 (1960-1978))

INV (FTC-061 - FORMER UST SITE, BLDG 1392, FTC-069 - UST SITE, PINON CANYON MANEUVER SITE)

1994

ISC (FTC-060 - FORMER UST SITE, BLDG 749)
 INV (FTC-060 - FORMER UST SITE, BLDG 749, FTC-062 - FORMER UST SITE, BLDG 2392, FTC-065 - FORMER UST SITE, BLDG 2792)
 RFA (FTC-075 - OLD CENTRAL WASH RACK, FTC-076 - Fort Carson Sewer System, FTC-079 - SLUDGE TRENCH PIT)

1995

INV (FTC-063 - FORMER UST SITE, BLDG 2492, FTC-064 - FORMER UST SITE, BLDG 2692)
 RFA (FTC-077 - Former Lime Pit Site in Bldg 8110)
 IRA (FTC-026 - PETE'S HILL)

1997

RFI/CMS (FTC-078 - Wash Rack Site North of Bldg 8110)
 RFA (FTC-083 - North Specker Avenue Plumes)
 CS (FTC-009 - LANDFILL 5 (1946-1956), FTC-083 - North Specker Avenue Plumes)

1998

CS (FTC-010 - LANDFILL 6 (1942-1946), FTC-016 - LANDFILL 12, FTC-019 - Range 121, Open Detonation Grounds)
 INV (FTC-054 - FORMER UST SITE, BLDG 8000, FTC-066 - FORMER UST SITE, BLDG 3192, FTC-067 - FORMER UST SITE, BLDG 8200)

1999

IRA (FTC-051 - FORMER UST SITE, BLDG 9648)
 IMP(C) (FTC-055 - FORMER UST SITE, BLDG 981)
 CS (FTC-006 - LANDFILLS 2/3 (1960-1978), FTC-008 - LANDFILL 4 (1957), FTC-011 - LANDFILL 7 (1968-1978), FTC-013 - LANDFILL 9 (1965-1973), FTC-014 - Landfill 10, FTC-015 - LANDFILL 11, FTC-017 - Range 1, Open Burn Grounds, FTC-018 - Range 1A, Open Burn Grounds, FTC-020 - GRIT OIL PIT, FTC-021 - ABANDONED FIRE TRAINING AREA, FTC-023 - FORMER USED/WASTE OIL STORAGE TANKS, FTC-024 - DRMO, Inactive Haz Waste Stor Area, FTC-027 - Range 123, Open Burn Grounds, FTC-032 - Vehicle Wash Rack Storm Drainages, FTC-033 - Fmr Waste Oil/Solv USTs, Bldg 8000, FTC-040 - FORMER OPEN DUMPING AREA, RANGE 121, FTC-041 - Fmr Long-Term Haz Waste Stor, 8000, FTC-043 - DIO Hazardous Waste Storage Area, FTC-044 - DRAINAGE DITCH, ADJACENT TO BUILDING 301, FTC-045A - BATTERY ACID NEUTRALIZATION BLDG 8030, FTC-045C - BATTERY ACID NEUTRALIZATION BLDG 8142, FTC-047 - LAND SPREADING FIELD, FTC-048 - Demolition Area, FTC-058 - FORMER VAPOR DEGREASER, FTC-075 - OLD CENTRAL WASH RACK, FTC-079 - SLUDGE TRENCH PIT)

2000

IRA (FTC-058 - FORMER VAPOR DEGREASER)
 RFI/CMS (FTC-010 - LANDFILL 6 (1942-1946), FTC-014 - Landfill 10)
 IMP(C) (FTC-051 - FORMER UST SITE, BLDG 9648)
 ISC (FTC-088 - BUILDING 1211)
 INV (FTC-068 - FORMER UST SITE, BLDG 8300, FTC-071 - FORMER UST SITE, BLDG 1100, FTC-072 - FORMER UST SITE, BLDG 700, FTC-081 - FORMER UST SITE, BLDG 638, FTC-082 - FORMER UST SITE, BLDG 2992)
 CAP (FTC-054 - FORMER UST SITE, BLDG 8000, FTC-056 - FORMER UST SITE, BLDG 1382, FTC-060 - FORMER UST SITE, BLDG 749, FTC-061 - FORMER UST SITE, BLDG 1392, FTC-063 - FORMER UST SITE, BLDG 2492, FTC-064 - FORMER UST SITE, BLDG 2692, FTC-065 - FORMER UST SITE, BLDG 2792, FTC-067 - FORMER UST SITE, BLDG 8200)
 CS (FTC-012 - LANDFILL 8 (1972-1973), FTC-070 - UST near Building 202)

2001

IMP(O) (FTC-055 - FORMER UST SITE, BLDG 981)
 RFA (FTC-093 - Former POW Camp)

IRP Schedule

IRA	(FTC-009 - LANDFILL 5 (1946-1956), FTC-021 - ABANDONED FIRE TRAINING AREA)
CS	(FTC-093 - Former POW Camp)
INV	(FTC-088 - BUILDING 1211)
CAP	(FTC-062 - FORMER UST SITE, BLDG 2392, FTC-066 - FORMER UST SITE, BLDG 3192)
2002	
IRA	(FTC-017 - Range 1, Open Burn Grounds, FTC-068 - FORMER UST SITE, BLDG 8300, FTC-079 - SLUDGE TRENCH PIT)
CAP	(FTC-068 - FORMER UST SITE, BLDG 8300)
2003	
IRA	(FTC-023 - FORMER USED/WASTE OIL STORAGE TANKS)
RFI/CMS	(FTC-027 - Range 123, Open Burn Grounds, FTC-040 - FORMER OPEN DUMPING AREA, RANGE 121, FTC-045A - BATTERY ACID NEUTRALIZATION BLDG 8030)
2004	
RFI/CMS	(FTC-008 - LANDFILL 4 (1957), FTC-024 - DRMO, Inactive Haz Waste Stor Area, FTC-043 - DIO Hazardous Waste Storage Area, FTC-045C - BATTERY ACID NEUTRALIZATION BLDG 8142, FTC-048 - Demolition Area, FTC-079 - SLUDGE TRENCH PIT)
IMP(O)	(FTC-051 - FORMER UST SITE, BLDG 9648)
2005	
CMI(C)	(FTC-009 - LANDFILL 5 (1946-1956))
IRA	(FTC-020 - GRIT OIL PIT, FTC-083 - North Specker Avenue Plumes)
LTM	(FTC-024 - DRMO, Inactive Haz Waste Stor Area, FTC-045A - BATTERY ACID NEUTRALIZATION BLDG 8030, FTC-045C - BATTERY ACID NEUTRALIZATION BLDG 8142)
RFI/CMS	(FTC-009 - LANDFILL 5 (1946-1956), FTC-015 - LANDFILL 11, FTC-018 - Range 1A, Open Burn Grounds, FTC-032 - Vehicle Wash Rack Storm Drainages, FTC-041 - Fmr Long-Term Haz Waste Stor, 8000 , FTC-044 - DRAINAGE DITCH, ADJACENT TO BUILDING 301)
2006	
RFI/CMS	(FTC-047 - LAND SPREADING FIELD)
LTM	(FTC-018 - Range 1A, Open Burn Grounds, FTC-032 - Vehicle Wash Rack Storm Drainages)
2007	
CMI(C)	(FTC-013 - LANDFILL 9 (1965-1973))
LTM	(FTC-043 - DIO Hazardous Waste Storage Area, FTC-079 - SLUDGE TRENCH PIT)
DES	(FTC-013 - LANDFILL 9 (1965-1973))
RFI/CMS	(FTC-013 - LANDFILL 9 (1965-1973))
2008	
RFI/CMS	(FTC-093 - Former POW Camp)
LTM	(FTC-041 - Fmr Long-Term Haz Waste Stor, 8000 , FTC-047 - LAND SPREADING FIELD)
2009	
RFI/CMS	(FTC-012 - LANDFILL 8 (1972-1973))
DES	(FTC-093 - Former POW Camp)
2010	
RFI/CMS	(FTC-021 - ABANDONED FIRE TRAINING AREA, FTC-070 - UST near Building 202)
DES	(FTC-070 - UST near Building 202)
CMI(C)	(FTC-070 - UST near Building 202, FTC-093 - Former POW Camp)
2011	
RFI/CMS	(FTC-006 - LANDFILLS 2/3 (1960-1978), FTC-011 - LANDFILL 7 (1968-1978), FTC-026 - PETE'S HILL)
DES	(FTC-012 - LANDFILL 8 (1972-1973))

2012

- RFI/CMS (FTC-017 - Range 1, Open Burn Grounds)
- IRA (FTC-033 - Fmr Waste Oil/Solv USTs, Bldg 8000)
- CMI(O) (FTC-012 - LANDFILL 8 (1972-1973))
- CMI(C) (FTC-012 - LANDFILL 8 (1972-1973))

2013

- CMI(C) (FTC-006 - LANDFILLS 2/3 (1960-1978), FTC-021 - ABANDONED FIRE TRAINING AREA)
- IMP(C) (FTC-056 - FORMER UST SITE, BLDG 1382)
- RFI/CMS (FTC-020 - GRIT OIL PIT, FTC-033 - Fmr Waste Oil/Solv USTs, Bldg 8000, FTC-058 - FORMER VAPOR DEGREASER, FTC-075 - OLD CENTRAL WASH RACK, FTC-083 - North Specker Avenue Plumes)
- DES (FTC-006 - LANDFILLS 2/3 (1960-1978), FTC-011 - LANDFILL 7 (1968-1978), FTC-020 - GRIT OIL PIT, FTC-021 - ABANDONED FIRE TRAINING AREA, FTC-026 - PETE'S HILL)

2014

- DES (FTC-033 - Fmr Waste Oil/Solv USTs, Bldg 8000, FTC-058 - FORMER VAPOR DEGREASER, FTC-083 - North Specker Avenue Plumes, PBA@Carson - PBA@Carson)
- CMI(O) (FTC-006 - LANDFILLS 2/3 (1960-1978), FTC-026 - PETE'S HILL, FTC-093 - Former POW Camp)
- RFI/CMS (FTC-023 - FORMER USED/WASTE OIL STORAGE TANKS, PBA@Carson - PBA@Carson)
- CMI(C) (FTC-011 - LANDFILL 7 (1968-1978), FTC-026 - PETE'S HILL, FTC-083 - North Specker Avenue Plumes)

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: 2016

Estimated Completion Date of IRP at Installation (including LTM phase): 204509

FORT CARSON IRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
FTC-006	LANDFILLS 2/3 (1960-1978)	LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
FTC-008	LANDFILL 4 (1957)	LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
FTC-009	LANDFILL 5 (1946-1956)	LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
FTC-011	LANDFILL 7 (1968-1978)	LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
FTC-012	LANDFILL 8 (1972-1973)	LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
FTC-013	LANDFILL 9 (1965-1973)	LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
FTC-020	GRIT OIL PIT	CMI(O)						
		LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
FTC-021	ABANDONED FIRE TRAINING AREA	CMI(O)						
		LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
FTC-023	FORMER USED/WASTE OIL STORAGE TANKS	CMI(C)						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
FTC-026	PETE'S HILL	LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
FTC-033	Fmr Waste Oil/Solv USTs, Bldg 8000	CMI(O)						
		LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
FTC-058	FORMER VAPOR DEGREASER	CMI(O)						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
FTC-070	UST near Building 202	CMI(O)						
		LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
FTC-083	North Specker Avenue Plumes	CMI(O)						
		LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
FTC-093	Former POW Camp	LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
PBA@Carson	PBA@Carson	CMI(O)						

FORT CARSON
Army Defense Environmental Restoration Program
Compliance Restoration

CR Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 18/13

Installation Site Types with Future and/or Underway Phases

2	Landfill (CC SW001, CC SW170)
1	Soil Contamination After Tank Removal (CC SW169)
1	Surface Impoundment/Lagoon (CC SW023)
1	Underground Storage Tank (CC 106)

Most Widespread Contaminants of Concern

Asbestos, Metals, Petroleum, Oil and Lubricants (POL), Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern

Groundwater, Soil, Surface Water

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

Site ID	Site Name	Action	Remedy	FY
CC 085	Building 1882	IRA	WASTE REMOVAL - SOILS	1999
CC SW006	SWMU 6 - Landfill 6	FRA	REMOVAL	2000
CC SW166	SWMU 166 - Building 8110, Former UST	IRA	REMOVAL	2004
CC 085	Building 1882	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	2006
CC 102	Buildings 980 and 981	FRA	NATURAL ATTENUATION	2009
CC SW169	SWMU 169 - Building 1211, Former UST	FRA	BIOREMEDIATION - IN SITU GROUNDWATER	2010
CC SW028	SWMU 28 - Battery Neutral Shop,BLDG	FRA	WASTE REMOVAL - SOILS	2012
CC 106	BLDG P150	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	2013
CC 107	Former Booster Station PCMS	FRA	WASTE REMOVAL - SOLIDS (NON- SOILS)	2013
CC SW023	SWMU 23 - Sewage Treatment Lagoons,BAAF	FRA	BIOREMEDIATION - IN SITU GROUNDWATER	2013
CC 108	Old Hospital Complex	FRA	WASTE REMOVAL - SOILS	2014
CC SW001	SWMU 1 - Landfill 1	FRA	CAPPING	2014
CC SW170	SWMU 170 - Const.& Debris Landfill	FRA	CAPPING	2014

Duration of CR

Date of CR Inception: 198810

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201406/201809

Date of CR completion including Long Term Management (LTM): 204411

CR Contamination Assessment

Contamination Assessment Overview

FTC has a total of 17 Compliance Restoration (CR) sites, all of which were transferred from AEDB-CC in FY09 and FY10. Seven of the sites (CC SW001, 021, 022, 023, 035, 169, and 170) were included in the FY08 PBA, which also carries several IR sites. Five sites (CC 106, CC SW001, CC SW023, CC SW169, CC SW170) are still active.

Environmental restoration activities include the Installation Restoration Program (IRP) and Military Munitions Response Program (MMRP). On Dec. 29, 2008, the Office of the Deputy Under Secretary of Defense for Installations and Environment, [ODUSD(I&E)], issued an interim policy for Defense Environmental Restoration Program (DERP) eligibility that rescinded the 1986 eligibility date for the IRP and the 2002 eligibility date for the MMRP. This made many sites previously addressed in the Army's CC program eligible for the DERP. Sites that are now eligible for the Munitions Response (MR) program have been migrated from AEDB-CC and given the naming convention of other MR sites. The newly eligible non-MR type sites are considered to be Installation Restoration (IR) sites; however, the newly eligible sites are being coded as CR in AEDB-R to distinguish them from the original IR sites and IR metrics.

Cleanup Exit Strategy

The exit strategy for FTC consists of an integrated approach through the use of a large PBA contract to consolidate and streamline the cleanup process. The PBA which goes through FY20 covers four of the CR sites.

There are four CR SWMUs under the PBA: 1, 23, 169 and 170.

CR Previous Studies

Year	Title	Author	Date
2010	SWMU 169 Draft Final Presumptive Remedy Annual Progress Report for 2010 for the Former Bldg 1211 UST	Shaw	DEC-2010
	SWMU 163 Draft Final Basis for NFA at FTC Industrial Wastewater System	Summit	DEC-2010
2011	SWMU 21 Draft Final Basis for NFA at the Industrial Wastewater Treatment Plant	Shaw	JAN-2011
	PCMS Third Quarter 2010 Monitoring and Remediation Report at Pinon Canyon Maneuver Site OPS	Summit	JAN-2011
	OPS PCMS CAP revised pages at the Pinon Canyon Maneuver Site (PCMS).	Summit	JAN-2011
	SWMU 35 Final Basis for No Further Action at the New Central Washrack	Shaw	JAN-2011
	PCMS Monitoring and Remediation Report for Pinon Canyon Maneuver Site	Summit	MAR-2011
	SWMU 169 Final Presumptive Remedy Annual Progress Report for 2010 for the Former Bldg 1211	Shaw	APR-2011
2012	FTC-106 Fourth Quarter 2011 Monitoring and Remediation Report, PCMS	Summit	MAR-2012
	SWMU 169 Draft Final Remedy Modification Request, Former Building 1211, UST	Shaw	MAR-2012
	FTC-106 Second Quarter 2012 Monitoring and Remediation Report, PCMS	Summit	AUG-2012
	SWMU 169 Draft Final Presumptive Remedy Annual Progress Report for 2012, Former Building 1211 Underground Storage Tank	Shaw	DEC-2012
2013	SWMU 1 Draft Final Presumptive Remedy Work Plan (60% Design Package), Landfill 1	Shaw	JAN-2013
	SWMU 170 Final Corrective Measures Implementation Work Plan (90% Design Package), Landfill 170	Shaw	FEB-2013
	SWMU 1 Final Presumptive Remedy Work Plan (90% Design Package) Landfill 1	Shaw	MAR-2013
	SWMU 170 Final Corrective Measures Implementation Work Plan (100% Design Package) Landfill 170	Shaw	APR-2013
	SWMU 22 Draft Final Basis for No Further Action, Sewage Treatment Plant, RV1	Shaw	MAY-2013
	SWMU 1 Final Presumptive Remedy Work Plan (100% Design Package), Landfill 1	Shaw	MAY-2013
	SWMU 22 Final Basis for No Further Action, Sewage Treatment Plant	CB&I	JUN-2013
	SWMU 169 Draft Final Remedy Modification Request, PAH Treatment Area, Former Building 121	CB&I	JUL-2013
	SWMU 169 Draft Final Presumptive Remedy Annual Progress Report 2013, Former Building 1211 Underground Storage Tank	CB&I	DEC-2013
	2014	SWMU 169 Draft Final Presumptive Remedy Annual Progress Report - 2013, Former Building 1211 Underground Storage Tank, RV1	CB&I
SWMU 1 Draft Final Construction Completion Report,		CB&I	JUN-2014

CR Previous Studies

2014	Title	Author	Date
	Landfill 1		
	SWMU 170 Final Post-Closure Monitoring and Maintenance Plan for Landfill 170	CB&I	JUL-2014
	SWMU 169 - Addendum 1 to the Draft Final Remedy Modification Request, PAH Treatment Area, Former Bldg 1211 UST RV 2	CB&I	SEP-2014
	SWMU 170 - Final Construction Completion Report, Landfill 170	CB&I	OCT-2014
	SWMU 1 - Final Construction Completion Report, Landfill 1	CB&I	OCT-2014
2015			
	SWMU 169 - Infiltration Gallery and Injection Trench Construction Letter Report and As-Built drawings Former Bldg 1211 UST	CB&I	MAR-2015
	SWMU 170 - Final Post-Closure Monitoring and Maintenance Plan, Landfill 170 RV1	ECC	MAY-2015

FORT CARSON
Compliance Restoration
Site Descriptions

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Groundwater

Phases	Start	End
ISC.....	199306.....	200006
INV.....	199906.....	200006
CAP.....	200709.....	200712
IMP(C).....	200809.....	201210
IMP(O).....	200810.....	201809

RIP Date: 201210

RC Date: 201809

SITE DESCRIPTION

CC 106, also known as Building P150 (OPS Event ID 10495) is an active bulk fueling point located in the western portion of the PCMS. The original UST system was installed in 1986 and replaced in 1993 following a gross product leak created at Tank No. 4 while the system was being retrofitted with leak detection. Approximately 4,000 gallons of JP-4 fuel was released into the subsurface. An unknown quantity of petroleum-contaminated groundwater was removed from the tank pit, which was subsequently excavated. The excavated soil was land-farmed in an area directly west of the site. The new system was installed with a soil sentry soil vapor monitoring (SVM) unit and an automatic tank gauging (ATG) unit. A comprehensive site investigation was performed following the initial response, and the site was granted NFA status by Oil and Public Safety (OPS) on May 4, 2000.

The ATG system began to malfunction over time and was replaced in September 2007 with a Veeder-Root auto tank gauging system (model TLS-350). Following installation of the system, the USTs and product lines were integrity tested as required by OPS regulations. During a test of a recirculation line at Tank No. 3, approximately 100 gallons of JP-8 fuel drained into the south manway via the interstitial space between the primary and secondary containment of the recirculation line. The fuel was immediately evacuated from the manway, and the UST system was taken out of service.

On Oct. 22, 2007, liquid levels within the SVM wells were measured with a fuel/water interface probe to determine if a product release had occurred outside of the secondary containment system. Approximately 1.0 foot of free-product was detected in each of the soil-vapor monitoring wells. Evidence of a product release was immediately reported to OPS. Free-product removal from the tank field commenced on Oct. 23, 2007, and continued during subsequent pumping events in November 2007 and March, April, May, and November 2008. An estimated total of 10,375 gallons of free-product and approximately 21,000 gallons of groundwater were removed from the excavation through the SVM wells. The average thickness of the free-product layer was reduced from an average of 1.04 feet (approximately 12.25 inches) to 0.045 foot (0.56 inch).

A Final Site Characterization Report was submitted to OPS in June 2009 and a corrective action plan was implemented in August FY11. The remedy specified in the CAP is not achieving the remediation objective (less than 1/100 of a foot of free-product), and the calculated transmissivity values for free-product at this site indicate that in situ remediation techniques are not capable of achieving the remediation objective. Excavation of contamination and free-product is not feasible until the fueling system is replaced.

CLEANUP/EXIT STRATEGY

The cleanup strategy is currently being revised and will include negotiations to minimize monitoring and remediation requirements until the underground tanks are removed, or the regulations/remediation objectives are revised by OPS. Subsequent to site closure the 20 wells will be abandoned with the overdrill and remove method. Well abandonment will occur after remediation objectives are achieved.

Site ID: CC SW001

Site Name: SWMU 1 - Landfill 1

STATUS

Regulatory Driver: RCRA
Contaminants of Concern: Metals, Volatiles (VOC)
Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	199410.....	199510
CS.....	199510.....	199511
RFI/CMS.....	199511.....	201210
DES.....	201110.....	201305
CMI(C).....	201110.....	201401
CMI(O).....	201110.....	201409
LTM.....	201411.....	204411
RIP Date:	201401	
RC Date:	201409	

SITE DESCRIPTION

CC SW001, also known as Inactive Landfill 1, is located south of the cantonment area. The municipal portion of the landfill is approximately 50 acres and has been inactive since 1998. FTC also maintained a 12-acre construction debris area (FTC-099) within the Landfill 1 Certificate of Designation boundary until 2002. This site is part of the 2002 Compliance Order, No. 02-03-22-01.

Groundwater sample results indicated inorganics in both upgradient and downgradient wells, at concentrations above CGWS, and chlorinated VOCs in several downgradient wells. It is unknown whether downgradient contamination is related to Landfill 1 or the Grit/Oil Pit (FTC-020, SWMU 013). A surface water channel was constructed in 1999 to control drainage in preparation for capping of the municipal portion.

Landfill 1 has been designated as part of the CLA. The CLA SWMUs include: Landfill 1 (FTC-005, SWMU1), Landfill 7 (FTC-011, SWMU 7), Grit/Oil Pit (FTC-020, SWMU 013), Pete's Hill Dump (FTC-026, SWMU 014), Sludge Trench Pit (FTC-079, SWMU 018), and the Construction and Demolition Debris Landfill (FTC-099/SWMU 170). The interim closure plan for the CLA, which identified both solid waste and hazardous waste interim closure requirements, was approved by CDPHE in September 2003.

RFI activities were completed and the interim closure plan compliance monitoring was initiated. The RFI report was submitted in June 2004 as part of the CLA RFI. The RFI report was approved in August 2004 and a CMS was imposed by CDPHE. The CMS work plan was submitted to CDPHE in March 2006 and approved in October 2006. The CMS for the landfill cap was submitted in April 2007. CDPHE required a hydrogeologic investigation to determine whether groundwater is in contact with waste in the landfill trenches. Phase III of the hydrogeologic investigation was completed and the results were submitted to CDPHE in December 2008.

A PBA was completed at FTC in July 2008. The PBA covers remedial construction and operation activities for this site through December 2015. Elevated concentrations of methane were detected during quarterly monitoring in the 3Q09 and 4Q09 monitoring reports. Notification letters were provided to CDPHE.

Per the Fort Carson Hazardous Waste Part B Permit, the PBA contractor is currently performing quarterly monitoring and maintenance activities at the CLA and submitted a draft final CMS addendum in FY11. The PRWP 60 percent and 90 percent design documents were submitted to CDPHE in Q3 2013. The Final PRWP 100 percent design document was submitted to CDPHE in June 2013 and approved in June 2013.

As of January 2014, the construction of the landfill cap was completed and Final Construction Completion Report was approved November 2014. LTM began in FY15.

Site ID: CC SW001
Site Name: SWMU 1 - Landfill 1

CLEANUP/EXIT STRATEGY

Per the Colorado regulations outlining post-closure care and monitoring and cover maintenance, LTM will occur for a minimum of 30 years.

CTC assumptions include post-PBA LTM (landfill cap maintenance and monitoring) consisting of 30 years.

Site Name: SWMU 23 - Sewage Treatment Lagoons, BAAF

STATUS

Regulatory Driver: RCRA

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	199410.....	199510
CS.....	199510.....	199511
RFI/CMS.....	199511.....	201009
DES.....	200807.....	201210
CMI(C).....	200807.....	201308
CMI(O).....	200807.....	201610
LTM.....	201611.....	201910

RIP Date: 201308

RC Date: 201610

SITE DESCRIPTION

CC SW023, also known as the Sewage Treatment Lagoons (SWMU 23), is being investigated with the Fire Training Area (FTC-021/022, SWMU 24). Both sites are known as the BECS.

PCE has been detected at this site above groundwater standards in several wells on the west side of the site, and low levels of metals were encountered in the sludge within the lagoons. The DPW removed the sludge from the lagoons in 1999 and backfilled the site. Additional soil and groundwater samples were collected beneath the former lagoons in 2000, but PCE was not detected in these samples.

In 2001, 2002, and 2003, additional soil and groundwater samples were collected at the site to address CDPHE comments on RFI activities.

CDPHE approved the revised RFI report in April 2005, as part of the BECS RFI. The CMS work plan was submitted to CDPHE in July 2005 and approved in December 2005. Remedy-specific data gap fieldwork was performed in March 2006 and the pilot study work plan was submitted to CDPHE in summer 2006. A full suite of groundwater monitoring and soil excavation was performed in 2007. Three additional groundwater wells were installed, and samples were collected in late June and early July 2008.

Future work at this site will be conducted under the FTC PBA, which was awarded in July 2008. The PBA covers remedial construction and operation activities for this site through 2015. As of September 2009, CDPHE approved the Enhanced Bioremediation Study Work Plan and contractor completed pilot test field construction activities as well as injection well installation. In FY11, the CMS and CMI(C) work plan (groundwater) were submitted. Draft Final CMS was submitted to CDPHE in April 2012; comments were received and a revised draft final was sent out November 2012 and approved January 2013. CMI Work Plan was submitted to CDPHE in January 2013 and was approved in July 2013.

Quarterly monitoring continues in accordance with the RCRA Part B Permit. Permit issued in November 2014 shows two years of remedial operations is required. Additionally, the Part B Permit for this site shows LTM occurring for three consecutive years.

CLEANUP/EXIT STRATEGY

CTC assumptions include the following:

- post-PBA CMI(O) (monitoring) based on the FY15 PBA amount for this site multiplied by five years.
- post-PBA LTM (monitoring) based on the FY15 PBA amount for this site multiplied by three years.

Site Name: SWMU 169 - Building 1211, Former UST

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	199410.....	199510
CS.....	199510.....	199511
RFI/CMS.....	199910.....	200809
DES.....	200810.....	200909
CMI(C).....	200910.....	200910
CMI(O).....	200910.....	201703
LTM.....	201704.....	202004

RIP Date: 200910

RC Date: 201703

SITE DESCRIPTION

The investigation of CC SW169, also known as former Building 1211 (SWMU 169), was initiated based on results of an RFI conducted at nearby Landfill 6 (FTC-010/SWMU 6). The Landfill 6 RFI concluded that the origin of organic compounds in the groundwater and petroleum hydrocarbon compounds in soil collected from monitoring well LF6MW8, located cross gradient of the landfill near the location of former Building 1211, may be associated with former fueling station activities.

Four separate investigations were performed between October 1999 and October 2000 to determine whether the former Building 1211 area is the source of constituents detected in monitoring well LF6MW8. Subsurface investigations confirmed that soil and groundwater impacts initially detected in LF6MW8 are associated with the former Building 1211 fueling facility. Consistent concentrations of cis-1,2-dichloroethene and vinyl chloride have been detected in groundwater. Free-phase product [light non-aqueous phase liquid) was encountered in the former tank pit.

Based on the results of the investigations, a newly identified SWMU report was submitted to CDPHE in April 2001 with an RFI work plan. Additional groundwater wells were installed in January 2003, additional groundwater sampling was conducted in August 2004 and the RFI report was submitted to CDPHE in January 2005. CDPHE provided comments in October 2005 and requested additional fieldwork to further define the nature and extent of groundwater contamination in the former UST excavation and hydrogeologic conditions in the southeast portion of the site. A supplemental letter work plan proposing the additional fieldwork was submitted in December 2005 and approved in January 2006. Fieldwork was performed in March and April 2006.

The revised RFI report was submitted in January 2008; CDPHE approved the RFI in September 2008 and imposed a CMS. In December 2008, a concrete vault was exposed during a construction project adjacent to the site. The location of the vault is coincident with the maximum concentration of 1,2-dichloroethane in groundwater.

A PBA was completed at FTC in July 2008. The PBA covers remedial construction and operation activities for this site through 2015. The Final Presumptive Remedy Work Plan was submitted in August 2009 and approved September 2009. In December 2009 CDPHE finalized the permit modification to select the remedy at the site. Monitoring and maintenance activities are ongoing. As of November 2012, the modified remedy is enhanced reductive dechlorination. A remedy modification work plan was submitted to CDPHE in January 2013. CDPHE approved the remedy modification in September 2013 and the permit modification was finalized in January 2014.

After review of the latest groundwater data it was determined in several meetings with regulators and the PBA consultant that compliance well concentrations have not met CGWS and two additional years of CMI(O) operations monitoring is required. Additionally, Per the Part B Permit, the post PBA LTM for monitoring will occur for three consecutive years.

Site ID: CC SW169

Site Name: SWMU 169 - Building 1211, Former UST

CLEANUP/EXIT STRATEGY

Cleanup strategy is in the process of being changed to soil removal and an infiltration gallery for the treatment of groundwater.

CTC assumptions include the following:

-post-PBA LTM (monitoring) based on the FY15 PBA amount for this site multiplied by three years.

Site Name: SWMU 170 - Const.& Debris Landfill

STATUS

Regulatory Driver: RCRA
Contaminants of Concern: Volatiles (VOC)
Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	199410.....	199510
CS.....	199510.....	199511
RFI/CMS.....	200203.....	201210
DES.....	201110.....	201305
CMI(C).....	201110.....	201401
CMI(O).....	201110.....	201409
LTM.....	201410.....	204410
RIP Date:	201401	
RC Date:	201409	

SITE DESCRIPTION

CC SW170, known as the Construction Debris Landfill (SWMU 170) is located south of the cantonment area in the Landfill 1 Certificate of Designation. The area of the landfill is estimated at 15 acres and is located at the toe of Pete's Hill (FTC-026, SWMU 14). This site is part of the 2002 Compliance Order No. 02-03-22-01.

The construction and debris landfill has recently been included as part of the CLA. Interim closure plan for CLA, which identified both solid waste and hazardous waste interim closure requirements, was approved by CDPHE in September 2003. CLA RFI was submitted and approved in FY04.

The CLA RFI report was submitted in June 2004, approved by the CDPHE in August 2004 and a CMS was imposed. The CMS work plan was approved by CDPHE in October 2006. The CMS report was submitted in April 2007 and the remedy was selected in January 2008. Land use controls are specified in the Part B Permit (Part IV.E).

A PBA was completed at FTC in July 2008. The PBA covers remedial construction and operations activities for this site through December 2015. Elevated concentrations of methane were detected during quarterly monitoring in the third quarter 2009 (3Q09) and the fourth quarter 2009 (4Q09) monitoring reports. Notification letters were provided to CDPHE.

In FY11 Fort Carson submitted the CMS addendum and preliminary landfill design (30 and 60 percent design). The 60 percent design document was submitted to CDPHE in November 2012. In May 2013 a Final CMI Work Plan [Revision(RV)1] 100 percent design was submitted and CDPHE approved the document on May 13, 2013. monitoring and maintenance program will continue.

As of January 2014, the construction of the landfill cap was completed and the Final Construction Completion Report was submitted to CDPHE in July 2014 and was approved in November 2014. Long-term monitoring began in FY15.

CLEANUP/EXIT STRATEGY

Per the Colorado regulations outlining post-closure care and monitoring and cover maintenance post PBA LTM will occur for a minimum of 30 years.

CTC assumptions:
- post-PBA LTM (landfill cap maintenance and monitoring) for 30 years.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
CC 085	Building 1882	201009	NFA request was sent to OPS in February 2010 and was approved in April 2010. Wells were abandoned in FY11.
CC 102	Buildings 980 and 981	201401	NFA request was submitted to OPS in January 2014 and was approved in January 2014.
CC 107	Former Booster Station PCMS	201212	NFA document (solid abatement plan) was submitted to CDPHE in November 2012 and was approved in December 2012.
CC 108	Old Hospital Complex	201406	NFA approval from CDPHE received in June 2014.
CC SW006	SWMU 6 - Landfill 6	200909	NFA document (construction completion report) was submitted to CDPHE in October 2008 and was approved January 2009.
CC SW021	SWMU 21 - Ind.Waste Treatment Facility	201102	NFA document was submitted to CDPHE in January 2011 and approved in February 2011.
CC SW022	SWMU 22 - Sewage Treatment Plant	201305	NFA document was submitted to CDPHE in June 2013 and was approved in July 2013.
CC SW028	SWMU 28 - Battery Neutral Shop,BLDG	201202	NFA document (construction completion report) was submitted to CDPHE in July 2011 and approved in August 2011.
CC SW032	SWMU 32 - Golf Course Holding Pond	201009	NFA document sent to CDPHE in July 2009 and approved in September 2009.
CC SW033	SWMU 33 - GC STP Effluent & Sludge	201009	NFA document was sent to CDPHE in June 2009 and approved September 2009.
CC SW035	SWMU 35 - New Central Wash Rack	201102	NFA document was submitted to CDPHE in September 2010 and was approved in November 2010.
CC SW163	SWMU 163 - Industrial Waste Water Lines	201106	NFA document was submitted to CDPHE in December 2010 and was approved in April 2011.
CC SW166	SWMU 166 - Building 8110, Former UST	201204	NFA document was submitted to CDPHE in August 2011 and was approved in January 2012.

CR Schedule

Date of CR Inception: 198810

Past Phase Completion Milestones

1991

ISC (CC 102 - Buildings 980 and 981)

1996

RFA (CC SW001 - SWMU 1 - Landfill 1, CC SW006 - SWMU 6 - Landfill 6, CC SW021 - SWMU 21 - Ind.Waste Treatment Facility, CC SW022 - SWMU 22 - Sewage Treatment Plant, CC SW023 - SWMU 23 - Sewage Treatment Lagoons,BAAF , CC SW028 - SWMU 28 - Battery Neutral Shop,BLDG, CC SW032 - SWMU 32 - Golf Course Holding Pond, CC SW033 - SWMU 33 - GC STP Effluent & Sludge , CC SW035 - SWMU 35 - New Central Wash Rack, CC SW163 - SWMU 163 - Industrial Waste Water Lines, CC SW166 - SWMU 166 - Building 8110, Former UST, CC SW169 - SWMU 169 - Building 1211, Former UST, CC SW170 - SWMU 170 - Const.& Debris Landfill)

CS (CC SW001 - SWMU 1 - Landfill 1, CC SW006 - SWMU 6 - Landfill 6, CC SW021 - SWMU 21 - Ind.Waste Treatment Facility, CC SW022 - SWMU 22 - Sewage Treatment Plant, CC SW023 - SWMU 23 - Sewage Treatment Lagoons,BAAF , CC SW028 - SWMU 28 - Battery Neutral Shop,BLDG, CC SW032 - SWMU 32 - Golf Course Holding Pond, CC SW033 - SWMU 33 - GC STP Effluent & Sludge , CC SW035 - SWMU 35 - New Central Wash Rack, CC SW163 - SWMU 163 - Industrial Waste Water Lines, CC SW166 - SWMU 166 - Building 8110, Former UST, CC SW169 - SWMU 169 - Building 1211, Former UST, CC SW170 - SWMU 170 - Const.& Debris Landfill)

2000

ISC (CC 085 - Building 1882, CC 106 - BLDG P150)

CMI(C) (CC SW006 - SWMU 6 - Landfill 6)

RFI/CMS (CC SW006 - SWMU 6 - Landfill 6)

INV (CC 106 - BLDG P150)

2001

INV (CC 085 - Building 1882)

2004

IRA (CC SW166 - SWMU 166 - Building 8110, Former UST)

2006

IRA (CC 085 - Building 1882)

2007

CAP (CC 085 - Building 1882, CC 102 - Buildings 980 and 981)

2008

CAP (CC 106 - BLDG P150)

RFI/CMS (CC SW169 - SWMU 169 - Building 1211, Former UST)

2009

DES (CC SW169 - SWMU 169 - Building 1211, Former UST)

RFA (CC 107 - Former Booster Station PCMS)

CS (CC 107 - Former Booster Station PCMS)

LTM (CC SW006 - SWMU 6 - Landfill 6)

IMP(C) (CC 102 - Buildings 980 and 981)

RFI/CMS (CC SW028 - SWMU 28 - Battery Neutral Shop,BLDG)

2010

LTM (CC 085 - Building 1882)

RFI/CMS (CC 107 - Former Booster Station PCMS, CC SW023 - SWMU 23 - Sewage Treatment Lagoons,BAAF , CC SW032 - SWMU 32 - Golf Course Holding Pond, CC SW033 - SWMU 33 - GC STP Effluent & Sludge)

DES (CC 107 - Former Booster Station PCMS)

CMI(C) (CC SW169 - SWMU 169 - Building 1211, Former UST)

CR Schedule

2011

DES (CC SW028 - SWMU 28 - Battery Neutral Shop,BLDG)
 RFI/CMS (CC SW021 - SWMU 21 - Ind.Waste Treatment Facility, CC SW035 - SWMU 35 - New Central Wash Rack, CC SW163 - SWMU 163 - Industrial Waste Water Lines)

2012

CS (CC 108 - Old Hospital Complex)
 RFA (CC 108 - Old Hospital Complex)
 CMI(C) (CC SW028 - SWMU 28 - Battery Neutral Shop,BLDG)
 RFI/CMS (CC 108 - Old Hospital Complex, CC SW166 - SWMU 166 - Building 8110, Former UST)
 DES (CC 108 - Old Hospital Complex)

2013

IMP(C) (CC 106 - BLDG P150)
 DES (CC SW001 - SWMU 1 - Landfill 1, CC SW023 - SWMU 23 - Sewage Treatment Lagoons,BAAF , CC SW170 - SWMU 170 - Const.& Debris Landfill)
 CMI(C) (CC 107 - Former Booster Station PCMS, CC SW023 - SWMU 23 - Sewage Treatment Lagoons,BAAF)
 RFI/CMS (CC SW001 - SWMU 1 - Landfill 1, CC SW022 - SWMU 22 - Sewage Treatment Plant, CC SW170 - SWMU 170 - Const.& Debris Landfill)

2014

CMI(C) (CC 108 - Old Hospital Complex, CC SW001 - SWMU 1 - Landfill 1, CC SW170 - SWMU 170 - Const.& Debris Landfill)
 IMP(O) (CC 102 - Buildings 980 and 981)
 CMI(O) (CC SW001 - SWMU 1 - Landfill 1, CC SW170 - SWMU 170 - Const.& Debris Landfill)

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: 201406

Schedule for Next Five-Year Review: 2016

Estimated Completion Date of CR at Installation (including LTM phase): 204411

FORT CARSON CR Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
CC 106	BLDG P150	IMP(O)						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
CC SW001	SWMU 1 - Landfill 1	LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
CC SW023	SWMU 23 - Sewage Treatment Lagoons,BAAF	CMI(O)						
		LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
CC SW169	SWMU 169 - Building 1211, Former UST	CMI(O)						
		LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
CC SW170	SWMU 170 - Const.& Debris Landfill	LTM						

Community Involvement

Technical Review Committee (TRC): None

Community Involvement Plan (Date Published): 201211

Restoration Advisory Board (RAB): RAB established 199411

RAB Adjournment Date: N/A

RAB Adjournment Reason: None

Additional Community Involvement Information

In 1994 FTC was in the process of voluntarily forming a RAB when a local environmental organization petitioned the installation to form one. FTC's RAB was established and initial community involvement was high, but it has since declined. Information given to the public has increased the trust level of the community and RAB members.

FTC's RAB was established to inform interested citizens about FTC's environmental restoration activities, and for representatives of the surrounding communities to provide input to FTC for consideration in the environmental restoration decision-making process. This citizen-based advisory group is made up of two members and there is a mailing list of over 200 recipients. The group provides input to the installation for community decision-making that will be responsive to community needs and concerns. The RAB is also charged with distributing information about environmental restoration to the communities it represents. Progress reports on corrective action processes provided to the RAB are key factors in promoting informed and valuable reviews and comments from this group. Public meetings are held, as appropriate or required, in order to provide additional forums for community input. The meetings may be held in conjunction with RAB meetings. The community co-chair or a RAB member is invited to review the annual IAP update and to provide input regarding the community's environmental restoration priorities.

In December 1998 additional input was solicited from neighborhoods adjacent to FTC and a community involvement plan was generated.

RAB meetings are currently held on semiannual basis. An update to the community involvement plan was completed in FY13.

Administrative Record is located at

Directorate of Public Works, Environmental Division
1626 Evans Street, Bldg 1219
Fort Carson, CO 80913
Phone: 719-526-1682

Information Repository is located at

Grant Library (Fort Carson)
1637 Flint Street
Fort Carson, CO 80913
Phone: 719-526-2350

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

TAPP Title: N/A

Potential TAPP: N/A

