

**FY2016**

**FORT DRUM**

**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 US Army Environmental Command (USAEC), Fort Drum (FTD), the executing agencies, 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

AAFES	Army and Air Force Exchange Service
AAS	Aquifer Air Sparging
AEDB-CC	Army Environmental Database - Compliance-related Cleanup
AEDB-R	Army Environmental Database - Restoration
AOC	Area of Concern
ASL	Airfield Sanitary Landfill
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CC	Compliance-related Cleanup
CCAR	Comprehensive Contamination Assessment Report
CDAP	Chemical Data Acquisition Plan
CMI(C)	Corrective Measures Implementation - Construction
CMI(O)	Corrective Measures Implementation - Operations
CMS	Corrective Measures Study
CR	Compliance Restoration
DD	Decision Document
DERP	Defense Environmental Restoration Program
DES	Design
DGS	Data Gap Study
DoD	Department of Defense
DPE	Dual Phase Extraction
EOD	Explosive Ordnance Disposal
EPR	Environmental Program Requirements
ER,A	Environmental Restoration, Army
FIP	Field Investigation Plan
FRA	Final Remedial Action
FS	Feasibility Study
FTD	Fort Drum
FTS	Focused Technical Selection
FY	Fiscal Year
GIS	Geographical Information System
GW	Groundwater
HFAC	Hancock Field Army Complex
HTRW	Hazardous, Toxic, and Radioactive Waste
HVAC	Heating, Ventilation, Air Conditioning and Cooling
IAP	Installation Action Plan
ICMS	Interim Corrective Measures Study
IDW	Investigation Derived Waste
IMCOM	Installation Management Command
IR	Installation Restoration
IRA	Interim Remedial Action
IRP	Installation Restoration Program
ISCO	In situ Chemical Oxidation
K	thousand
kg	kilograms
LNAPL	Light Non-Aqueous Phase Liquid

## Acronyms

LTM	Long-Term Management
LUST	Leaking Underground Storage Tank
mg	milligram
mg/l	milligram per liter
MMRP	Military Munitions Response Program
MNA	Monitored Natural Attenuation
MPE	Multi-Phase Extraction
MR	Munitions Response
MW/PZ	Monitoring Well/Piezometer
N/A	Not Applicable
NFA	No Further Action
NJANG	New Jersey Air National Guard
NPL	National Priorities List
NYANG	New York Air National Guard
NYCRR	New York Codes, Rules and Regulations
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
O&M	Operations and Maintenance
ODUSD(I&E)	Office of the Deputy Under Secretary of Defense for Installations and Environment
ORC	Oxygen Releasing Compound
OSL	Old Sanitary Landfill
PAH	Polycyclic Aromatic Hydrocarbons
PBA	Performance-Based Acquisition
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethylene
POL	Petroleum, Oil and Lubricants
RA	Remedial Action
RA(C)	Remedial Action - Construction
RAB	Restoration Advisory Board
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RFA	RCRA Facility Assessment
RI	Remedial Investigation
RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SAGE	Surface Air Ground Environment Complex
SI	Site Inspection
SOW	Scope of Work
SSI	Site Screening Inspection
SVE	Soil Vapor Extraction
SVOC	Semi Volatile Organic Compound
SW	Surface Water
SWMU	Solid Waste Management Unit

## Acronyms

TAPP	Technical Assistance for Public Participation
TRC	Technical Review Committee
USACE	US Army Corps of Engineers
USAEC	US Army Environmental Command
USAEHA	US Army Environmental Hygiene Agency
USAG	US Army Garrison
USATHAMA	US Army Toxic and Hazardous Materials Agency
USEPA	US Environmental Protection Agency
UST	Underground Storage Tank
UVB	Air Sparging Bioventing technology, "Unterdruck-Verdampfer-Brunnen"
VOC	Volatile Organic Compound
WET	Wetlands Evaluation Technique
WWII	World War II

# Installation Information

## Installation Locale

**Installation Size (Acreage):** 108737

**City:** Fort Drum

**County:** Jefferson, Lewis

**State:** New York

## Other Locale Information

FTD is located in northern New York state, approximately 16 kilometers northeast of Watertown, in Jefferson and Lewis counties, and it borders St. Lawrence County. Seven small towns with populations between 2,000 and 8,000 each border the installation. Approximately 31,000 military personnel, their dependents, and civilian employees reside and/or work at FTD on a daily basis. The installation, which is roughly rectangular, consists of 108,737 acres measuring 10 kilometers wide and 32 kilometers long, making it the largest Army installation in the northeast.

## Installation Mission

US Army Garrison (USAG) FTD's mission is provide Best in Army services and infrastructure for our Soldiers, families and civilians who support our nation during a time of persistent conflict.

## Lead Organization

IMCOM

## Lead Executing Agencies for Installation

USACE

USAEC

## Regulator Participation

### Federal

US Environmental Protection Agency (USEPA), Region II

### State

New York State Department of Environmental Conservation (NYSDEC)

## National Priorities List (NPL) Status

FORT DRUM is not on the NPL

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

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

## Installation Program Summaries

### IRP

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

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

### CR

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

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



# 5-Year / Periodic Review Summary

## 5-Year / Periodic Review Summary

Status	Start Date	End Date	End FY
Complete	201303	201506	2015

## Last Completed 5-Year / Periodic Review Details

Associated ROD/DD Name	Sites
Draft Final PRR For Area 1395	FTD-030B
Draft Final PRR For Area 1495	FTD-030C
Draft Final PRR for Area 1245	FTD-089
Draft Final PRR for Building T-91	FTD-031
FTD-007 Area 3805/OSL Final CMS Letter	FTD-007
FTD-012 Abandoned Landfill near Deferiet	FTD-001, FTD-002, FTD-003, FTD-004, FTD-005, FTD-006, FTD-007, FTD-008, FTD-010, FTD-011, FTD-012, FTD-013, FTD-014, FTD-020, FTD-022, FTD-027, FTD-028, FTD-030B, FTD-030C, FTD-031, FTD-032, FTD-033, FTD-072, FTD-073, FTD-074, FTD-075, FTD-076, FTD-077, FTD-079, FTD-081, FTD-082, FTD-083, FTD-085, FTD-086, FTD-088, FTD-089, FTD-090, FTD-092, FTD-094, FTD-111, FTD-112
FTD-025 Old Hosford Swimming Pool	FTD-025
FTD-030F Area 3805/OSL Final CMS Letter	FTD-030F
FTD-074 Building P-44 DOL Battery Shop	FTD-074
FTD-076 BLDG T-4002	FTD-076
FTD-077 Building S-2005 Closure	FTD-077
FTD-083 Paint Dump Site	FTD-083
FTD-085 Old POL Drying Beds	FTD-085
FTD-088 BLDG T-4006 UST	FTD-088
FTD-094 Former Pesticide Storage S-2517	FTD-094
Final CMS AAFES Station	FTD-091
Final Focused Technical Selection, Area	FTD-030A
Order on Consent Fort Drum(Site #623008)	FTD-001, FTD-002, FTD-003, FTD-004, FTD-005, FTD-006, FTD-007, FTD-008, FTD-009, FTD-010, FTD-011, FTD-012, FTD-013, FTD-014, FTD-020, FTD-022, FTD-024, FTD-025, FTD-027, FTD-028, FTD-030A, FTD-030B, FTD-030C, FTD-030D, FTD-030E, FTD-030F, FTD-031, FTD-072, FTD-073, FTD-074, FTD-076, FTD-077, FTD-079, FTD-081, FTD-082, FTD-083, FTD-085, FTD-086, FTD-088, FTD-089, FTD-090, FTD-091, FTD-092, FTD-094, FTD-110, FTD-111, FTD-112

**Results** No issues

**Actions** N/A

**Plans** N/A

### Recommendations and Implementation Plans:

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# Cleanup Program Summary

## Installation Historic Activity

The installation has been used as a military training site since 1908; however, the Army's presence in the New York North Country may be traced back to the early 1800s.

In 1809, a company of infantry Soldiers was stationed at Sackets Harbor to enforce the Embargo Act and control smuggling between northern New York and Canada. Following the outbreak of the War of 1812, Sackets Harbor became the center of United States naval and military activity for the upper St. Lawrence River Valley and Lake Ontario.

During the 1830s and 1840s, the Patriots War in Canada prompted a new round of military preparations and Madison Barracks became the home of artillery units.

Learning that the war department was looking for areas in northern New York to train the troops, the Watertown Chamber of Commerce proposed that the Army establish a training area on 10,000 acres of land along the Black River in the vicinity of Felts Mills, Great Bend and the village of Black River.

In 1908 Brigadier General Frederick Dent Grant, son of General Ulysses S. Grant, was sent to the area with 2,000 regulars and 8,000 militia. He found Pine Plains to be an ideal place to train troops. The following year, money was allocated to purchase the land and summer training continued through the subsequent years. The camp's first introduction to the national spotlight came in 1935, when the largest peacetime maneuvers were held on Pine Plains and surrounding farmlands.

The 36,500 Soldiers came from throughout the northeast to take part in the exercise. Some Soldiers traveled by trains which arrived in town every 15 minutes, coming from as far away as Buffalo and New York City. For 36 hours, young men from offices, factories, and farms marched, attacked, and defended in tactical exercises on the 100 square miles the Army had leased for its war games. The maneuvers were judged to be most successful, and the war department purchased another 9,000 acres of land.

With the outbreak of World War II (WWII), the area then known as Pine Camp was selected for a major expansion and an additional 75,000 acres of land was purchased. With that purchase, 525 local families were displaced. Five entire villages were eliminated, while others were reduced by one-third to one-half their size.

By Labor Day 1941, 100 tracts of land were taken over. Three thousand buildings, including 24 schools, six churches and a post office were abandoned. Contractors then went to work, and in a period of 10 months at a cost of \$20 million, an entire city was built to house the divisions scheduled to train.

Eight hundred buildings were constructed, including 240 barracks, 84 mess halls, 86 storehouses, 58 warehouses, 27 officers' quarters, 22 headquarters buildings, and 99 recreational buildings, as well as guardhouses and a hospital. Construction workers paid the price, as winter 1941-1942 was one of the coldest in New York North Country history.

The three divisions to train at Pine Camp were General George S. Patton's 4th Armored Division (General Creighton Abrams was a battalion commander at the time), the 45th Infantry Division, and the 5th Armored Division.

The post also served as a prisoner-of-war camp. Of those prisoners who died at the post, one Italian and six Germans are still buried in the Sheepfold Cemetery near Remington Pond.

In 1951 Pine Camp was renamed Camp Drum, after Lt. Gen. Hugh A. Drum who commanded the First Army during WWII. During and after the Korean Conflict, a number of units were stationed and trained at the camp to take advantage of the terrain and climate.

The post was designated FTD in 1974 and a permanent garrison was assigned. In April 1980, B Company, 76th Engineer Battalion (Combat Heavy) was reassigned to FTD from Fort Meade, Maryland. It was followed by the rest of the battalion, less Company D, three years later.

In January 1984, the Department of the Army announced it was studying selected Army posts to house a new light infantry division. On Sept. 11, 1984, the announcement was made that FTD would be the new home of the 10th Light Infantry Division.

The first division troops arrived at FTD on Dec. 3, 1984, and the unit was officially activated on Feb. 13, 1985. At that time the name was changed to the 10th Mountain Division (Light Infantry). The mission of the 10th Mountain Division is to rapidly deploy by air, sea, and land anywhere in the world, prepared to fight upon arrival and win.

# Cleanup Program Summary

## Installation Historic Activity

On June 4, 1985 the identity of a roundout brigade was announced. The brigade was composed of New York Army National Guard battalions from central and northern New York under the 27th Infantry Brigade.

On June 28, 1985 the 76th Engineer Battalion was inactivated. The division reached full strength in 1989. Between 1986 and 1992, 130 new buildings, 35 miles of roads, and 4,272 sets of family housing units were built at a cost of \$1.3 billion.

Since the early-1990s, FTD has continued to construct and expand facilities to include training ranges, airfield facilities, and support facilities for rapid deployment. The primary cause of contamination of the environment throughout Fort Drum's history has been the failure of components related to fueling systems such as piping and valves.

## Installation Program Cleanup Progress

### IRP

**Prior Year Progress:** Performance-based acquisition contractor has ramped up activities to meet closure requirements in 2020. Activities include turning back on systems and optimizing those systems by adding more wells, focusing energies on hotspots, and adding bioventing to accelerate progress. A community relation plan was developed in 2015. Systems and wells at FTD-030B, 030C, 031, and 089 were decommissioned.

**Future Plan of Action:** Continued optimization and closeout activities planned for FTD-030A, FTD-030D, FTD-030E, FTD-030F, and FTD-091 by the end of 2019. Long-term management (LTM) activities continue at FTD-007 and FTD-008. Implementation of components of the community relations plan.

### CR

**Prior Year Progress:** CCFD-030G remedial investigation (RI)/ feasibility study (FS) was completed. A record of decision (ROD) was completed March 2016. Closure of CCFD-030H is expected in 2016.

**Future Plan of Action:** Hotspot treatment as necessary and long-term monitoring at CCFD-030G.

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

# IRP Summary

**Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count:** 55/46

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

1	Fire/Crash Training Area (FTD-028)
2	Landfill (FTD-007, FTD-008)
1	Soil Contamination After Tank Removal (FTD-091)
1	Spill Site Area (FTD-114)
4	Underground Tank Farm (FTD-030A, FTD-030D, FTD-030E, FTD-030F)

## Most Widespread Contaminants of Concern

Metals, Petroleum, Oil and Lubricants (POL), Polycyclic Aromatic Hydrocarbons (PAH), Volatiles (VOC)

## Media of Concern

Groundwater, Sediment, Soil, Surface Water

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

Site ID	Site Name	Action	Remedy	FY
FTD-007	OLD SANITARY LANDFILL	IRA	CAPPING	1986
FTD-030D	GASOLINE ALLEY - AREA 1595	IRA	GROUND WATER TREATMENT	1994
FTD-077	HAZARDOUS WASTE STORAGE SITE BLDG S-2005	FRA	WASTE REMOVAL - SOILS	1994
FTD-003	SEWAGE TREATMENT PLANT	FRA	WASTE REMOVAL - SOILS	1995
FTD-030D	GASOLINE ALLEY - AREA 1595	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1995
FTD-007	OLD SANITARY LANDFILL	IRA	FENCE OR OTHER SITE ACCESS CONTROL MEASURES	1996
FTD-087	SAGE COMPLEX USTS	FRA	WASTE REMOVAL - SOILS	1996
FTD-087	SAGE COMPLEX USTS	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1996
FTD-008	AIRFIELD SANITARY LANDFILL	FRA	FENCE OR OTHER SITE ACCESS CONTROL MEASURES	1997
FTD-072	NEW JERSEY ANG POND	FRA	WASTE REMOVAL - SOILS	1997
FTD-074	DOL BATTERY SHOP BLDG P-44	FRA	WASTE REMOVAL - SOILS	1997
FTD-076	PESTICIDE/HERBICIDE STORAGE BLDG T-4002	FRA	WASTE REMOVAL - SOILS	1997
FTD-076	PESTICIDE/HERBICIDE STORAGE BLDG T-4002	FRA	INCINERATION	1997
FTD-093	SAGE COMPLEX STORM SEWER OUTFALL	FRA	WASTE REMOVAL - SOILS	1997
FTD-007	OLD SANITARY LANDFILL	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1998
FTD-007	OLD SANITARY LANDFILL	IRA	DRAINAGE CONTROLS	1999
FTD-008	AIRFIELD SANITARY LANDFILL	FRA	DRAINAGE CONTROLS	1999
FTD-008	AIRFIELD SANITARY LANDFILL	FRA	CAPPING	1999
FTD-089	BLDG 1245 UST	IRA	GROUND WATER TREATMENT	1999

## IRP Summary

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

Site ID	Site Name	Action	Remedy	FY
FTD-112	TRAINING SITE POL CONTAM. NEAR RANGE 17	IRA	WASTE REMOVAL - SOILS	1999
FTD-030B	GASOLINE ALLEY - AREA 1395	FRA	NATURAL ATTENUATION	2001
FTD-030B	GASOLINE ALLEY - AREA 1395	FRA	SOIL VAPOR EXTRACTION	2001
FTD-030B	GASOLINE ALLEY - AREA 1395	FRA	BIOVENTING	2001
FTD-030B	GASOLINE ALLEY - AREA 1395	FRA	AIR SPARGING	2001
FTD-030C	GASOLINE ALLEY - AREA 1495	FRA	BIOVENTING	2001
FTD-030C	GASOLINE ALLEY - AREA 1495	FRA	SOIL VAPOR EXTRACTION	2001
FTD-030C	GASOLINE ALLEY - AREA 1495	FRA	AIR SPARGING	2001
FTD-030C	GASOLINE ALLEY - AREA 1495	FRA	NATURAL ATTENUATION	2001
FTD-091	BLDG P-2140 USTS	FRA	NATURAL ATTENUATION	2002
FTD-091	BLDG P-2140 USTS	FRA	AIR SPARGING	2002
FTD-091	BLDG P-2140 USTS	FRA	DUAL-PHASE EXTRACTION	2002
FTD-091	BLDG P-2140 USTS	IRA	GROUND WATER TREATMENT	2002
FTD-091	BLDG P-2140 USTS	IRA	FREE PRODUCT RECOVERY	2002
FTD-030F	GASOLINE ALLEY - AREA 3805	FRA	DUAL-PHASE EXTRACTION	2004
FTD-089	BLDG 1245 UST	FRA	NATURAL ATTENUATION	2005
FTD-030D	GASOLINE ALLEY - AREA 1595	FRA	AIR SPARGING	2006
FTD-030D	GASOLINE ALLEY - AREA 1595	FRA	SOIL VAPOR EXTRACTION	2006
FTD-030D	GASOLINE ALLEY - AREA 1595	FRA	BIOVENTING	2006
FTD-030D	GASOLINE ALLEY - AREA 1595	FRA	NATURAL ATTENUATION	2006
FTD-031	BUILDING T-91	FRA	NATURAL ATTENUATION	2006
FTD-007	OLD SANITARY LANDFILL	FRA	DRAINAGE CONTROLS	2007
FTD-007	OLD SANITARY LANDFILL	FRA	OTHER	2007
FTD-007	OLD SANITARY LANDFILL	FRA	CAPPING	2007
FTD-030A	GASOLINE ALLEY - AREA 1295	FRA	NATURAL ATTENUATION	2007
FTD-030A	GASOLINE ALLEY - AREA 1295	FRA	CHEMICAL REDUCTION/OXIDATION	2007
FTD-030E	GASOLINE ALLEY - AREA 1795/WWII LANDFILL	FRA	BIOVENTING	2007
FTD-030E	GASOLINE ALLEY - AREA 1795/WWII LANDFILL	FRA	AIR SPARGING	2007
FTD-030E	GASOLINE ALLEY - AREA 1795/WWII LANDFILL	FRA	INSTITUTIONAL CONTROLS	2007
FTD-030E	GASOLINE ALLEY - AREA 1795/WWII LANDFILL	FRA	REMOVAL	2007

## IRP Summary

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

Site ID	Site Name	Action	Remedy	FY
FTD-030E	GASOLINE ALLEY - AREA 1795/WWII LANDFILL	FRA	NATURAL ATTENUATION	2007
FTD-030E	GASOLINE ALLEY - AREA 1795/WWII LANDFILL	FRA	SOIL VAPOR EXTRACTION	2007
FTD-030F	GASOLINE ALLEY - AREA 3805	FRA	AIR SPARGING	2007
FTD-030F	GASOLINE ALLEY - AREA 3805	FRA	NATURAL ATTENUATION	2007
FTD-030B	GASOLINE ALLEY - AREA 1395	FRA	INSTITUTIONAL CONTROLS	2012
FTD-030C	GASOLINE ALLEY - AREA 1495	FRA	INSTITUTIONAL CONTROLS	2012
FTD-089	BLDG 1245 UST	FRA	INSTITUTIONAL CONTROLS	2012
FTD-111	T-2161 WATER TOWER	IRA	WASTE REMOVAL - SOILS	2013

### Duration of IRP

**Date of IRP Inception:** 198010

**Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC):** 201911/201911

**Date of IRP completion including Long Term Management (LTM):** 204512

# IRP Contamination Assessment

## Contamination Assessment Overview

Studies of potentially contaminated sites at FTD began in 1980 when the US Army Toxic and Hazardous Materials Agency (USATHAMA) conducted an installation assessment. This study identified 35 AOCs. In 1986 USATHAMA contracted to have an RI performed; six sites were studied in depth and the US Army Environmental Hygiene Agency (USAEHA) conducted an evaluation of solid waste management units (SWMUs), which considered 72 AOCs. Currently, there are seven active Installation Restoration Program (IRP) sites that are being remediated or undergoing LTM. The other sites have been classified as needing no further action (NFA) or have been remediated and are awaiting final closure pending NYSDEC review.

Past solid waste disposal practices have resulted in the contamination of soil, surface water, sediment and groundwater with landfill leachate containing petroleum hydrocarbons, heavy metals, pesticides, solvents, and paint components. Formerly leaking underground storage tanks (UST) resulted in free-product floating on the water table, contaminating the groundwater, surface water, sediment and soil. Past explosive ordnance disposal (EOD) activities caused elevated levels of heavy metals and trace explosive and propellant compounds in the soil and groundwater. Two buildings/sites were contaminated with pesticides.

Petroleum is the predominant contaminant at the remaining 11 active sites. Leaking USTs and piping at nine former fuel dispensing facilities along the area known as Gasoline Alley have resulted in six petroleum contaminated sites (areas 1295, 1395, 1495, 1595, 1795, and 3805) with extensive groundwater plumes and soil contamination, as well as surface water and sediment contamination at three of the sites. Other active petroleum contaminated sites include Building P-2140 (an active Army and Air Force Exchange Service (AAFES) fueling station with groundwater, soil, surface water and sediment contamination), Building T1245 (a former fueling facility with soil and groundwater contamination), and Building T-91 (a maintenance shop with soil and groundwater contamination). In addition, there are two former landfills: the airfield sanitary landfill with potential metals and phenols impacts to groundwater and the old sanitary landfill (OSL) with metals, benzene, toluene, ethylbenzene and xylenes (BTEX), phenols, and other contamination of groundwater, surface water, sediment and soil.

The lead regulatory agency is the NYSDEC Division of Environmental Remediation.

FTD was issued a consent order for all IRP sites in February 2014.

## Cleanup Exit Strategy

The installation has seven active sites currently receiving funding. Remedies were in place for all sites by the end of 2007, and all active sites are in the corrective measures implementation (operation) (CMI(O)) or LTM phases. The status of these sites is as follows:

- FTD-007 OSL: LTM
- FTD-008 Airfield sanitary landfill (ASL): LTM
- FTD-030A area 1295: Monitored natural attenuation (MNA), LTM
- FTD-030D area 1595: Operate aquifer air sparging (AAS)/soil vapor extraction (SVE)/bioventing systems, limited excavation of the creek if necessary, MNA, LTM
- FTD-030E area 1795: Operate AAS/SVE/bioventing system, MNA, LTM
- FTD-030F area 3805: Operate multi-phase extraction (MPE)/AAS systems at source area, MNA, LTM
- FTD-091 Bldg P-2140 USTs: Operate dual-phased extraction (DPE) and AAS systems, MNA, LTM



## IRP Previous Studies

Year	Title	Author	Date	
1977	Landfill Study No. 26-0011-78 Fort Drum, NY	USAEHA	SEP-1977	
1981	Installation Assessment of Ft. Drum	Chemical Systems	JUL-1981	
1982	FTD-93, Installation Restoration Program Phase I Records Search Hancock Field	Engineering Science	JUL-1982	
1983	Health Basic Groundwater Hydrology United States Geological Survey Waster-Supply Paper 2220	US Inter	JUN-1983	
1984	Solid Waste Disposal Study No. 38-26-0444-85 Landfill Site Selection Ft Drum NY	USAEHA	SEP-1984	
1985	Felts Mills Hydroelectric Project Development Plan & Draft Exhibit E-Environmental Report	Lake En	JAN-1985	
	The Echo I Experiment The Beginnings of Air Force Satellite Communications	Rome Air	OCT-1985	
	FTD -30-1595, Technical Concepts for Remediation of Gasoline Alley Contamination at the Fuel Dispensing Area 1595	Dames & Moore	NOV-1985	
	FTD -30, Remedial Investigation of Fort Drum, New York	Dames & Moore	DEC-1985	
1986	US Dept of the Interior Geological Survey Hydrogeology of Ft Drum Area Jeff, Lewis & St. Lawrence Counties	DoD	JAN-1986	
	Leaking Underground Storage Tank Phase II Report (LUST)	C & S Engineering	JUN-1986	
	Management of Leachate from Army Sanitary Landfills Technical Report N-86/19 July 1986 Sanitary Landfill Control	USACERL	JUL-1986	
	FTD -30-1595, Remedial Investigation of Fort Drum, New York	Dames & Moore	AUG-1986	
	Remedial Investigation of Ft. Drum Appendix F No AMXTH-AS-CR-85054	Dames & Moore	AUG-1986	
	FTD-030, Remedial Investigation of Fort Drum, New York	Dames & Moore	AUG-1986	
	FTD -30-1595, Remedial Investigation Report for Area 1595	Dames & Moore	AUG-1986	
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	Hazardous Waste Study/Investigation of Soil Contamination for Building S-2005	USAEC	SEP-1987
	Hazardous Waste Study No. 37-26-0121-88 Investigation of Soil Contamination At Bldg S-2005 & EOD Area Range 8	USAEHA	OCT-1987
	Modified Environmental Audit Protocol Environmental Self-Audit Program	DoD	NOV-1987
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	FTD -30-WWII, Work Plan for Site Investigation WWII Landfill Final	CDM	SEP-1989
	FTD -72, Work Plan for Remedial Investigation NJANG Final	CDM	SEP-1989
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	FTD -87, Cost Proposal Design of Underground Storage Tank (UST) Closure at Sage Facility, Syracuse, New York	Radian	AUG-1991
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	FTD -77, Design Analysis & Cost Estimate for Site Closure Building S-2005 100% Submittal	CDM	SEP-1991

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FTD -7, Spill Prevention and Discharge Control Plan Interim Corrective Measure Old Sanitary Landfill	Tug Hill	NOV-1994
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	Defense Environmental Restoration Program Installation Execution Plan	Fort Drum	JAN-1995
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	FTD -93, Quality Control Summary Report Storm Sewer Outfall Hancock Field Army Complex	MP	APR-1995
	FTD -93, Storm Sewer Outfall Hancock Field Army Complex Final Remedial Investigation Report,	MP	APR-1995
	FTD -7, Phase II RCRA Facility Investigation Report for Old Sanitary Landfill Volume II Appendix F	CDM	MAY-1995
	FTD -91, Work Plan/Field Sampling & Analysis Plan Interim Pilot Study of Groundwater Extraction w/Free Product Recovery	EA	MAY-1995
	FTD -91, Safety Health & Emergency Response Plan Interim Pilot Study of Groundwater Extraction with Free Product AAFES	EA	MAY-1995
	FTD -91, Chemical Data Acquisition Plan for Interim Pilot Study AAFES	EA	MAY-1995
	FTD -22, Final Work Plan Volume I of III Field Investigation Plan Site Investigation Range 17 EOD Burn Site	MP	MAY-1995
	FTD -22, Final Work Plan Volume II of III Site Safety & Health Plan	MP	MAY-1995
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FTD -30, Erosion/Sediment Control Plan Remediation of Petroleum-Contaminated Soil, Gas Alley	Radian	MAY-1995
Post Sampling Submittal Work Assignment No. 15 Ft Dr Miscellaneous Sampling	MP	MAY-1995
FTD -24, Final Work Plan Volume I of III Field Investigation Plan Site Investigation Range 35 EOD Burn Site	MP	MAY-1995
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FTD -30, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter I May & June 1995	Radian	JUN-1995
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FTD -30-1595, 2nd Quarter 1995 Operation & Maintenance Report Phase I Interim Groundwater Remediation System Building 1599	Radian	SEP-1995
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FTD -93, Hancock Field Army Complex Cost Estimate for Remediation	MP	NOV-1995
FTD -93, HFAC Response to Comments on 95% Remedial Design & Interim Specs Submittal IDT Ctr. Multidiscipline for HTRW	MP	NOV-1995
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FTD -31, Groundwater Sampling at T-91 (event Sept 26 & 27 1995)	Weston	NOV-1995
FTD -74, Building P-44 Quarterly Groundwater Sampling McLaren/Hart Project (10/95 event)	M Hart	NOV-1995
FTD -30-3805, Monthly Report of Progress Area 3805 (event 1-30 September 1995)	EA	NOV-1995
FTD -87, HFAC Responses comments 95% Remedial Dgn & Intm Specs Submtl, Multidiscipline Haz, Toxic & Radioactive Waste	MP	NOV-1995
FTD -7, Separate Phase Product Recovery Pilot Study & Plume Characterization Work Plan Letter Report	EA	NOV-1995
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FTD -91, Table 1 Attached w/maps Summary of Well Gauging Data Collected AAFES	EA	NOV-1995
Revised Well Inventory for Fort Drum	CDM	NOV-1995

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	FTD -30-3805, Monthly Report of Progress Area 3805 Pilot Treatment System Study (event 1-31 October 1995)	EA	DEC-1995
	FTD -72, Soil Pile Sampling & Analysis at NJANG Site	MP	DEC-1995
	FTD -31, Groundwater Sampling at T-91 Site, Fort Drum	Weston	DEC-1995
1996			
	FTD -30-3805, Draft CCAR Volume V Areas 1895, 1995, 3805 & OSL, Gas Alley, FTD, NY	EA	JAN-1996
	FTD -30-3805, Draft CCAR Volume V Appendices & Attachments Areas 1895, 1995, 3805 & OSL Gas Alley Fort Drum, NY	EA	JAN-1996
	FTD -30, Responses to Comments for Volumes I, II, III, IV and V Pre-Draft CCAR, Fort Drum, NY	EA	JAN-1996
	FTD -30, Response to Comments Pre/Draft Comprehensive Contaminant Assessment Report Gasoline Alley	EA	JAN-1996
	FTD -30-1995, Semiannual Discharge Report for Areas 1995 & 3805, Gasoline Alley Fort Drum, New York	EA	JAN-1996
	FTD -30-3805, Semiannual Discharge Report for Areas 1995 & 3805, Gasoline Alley Fort Drum, New York	EA	JAN-1996
	FTD -30-1995, Monthly Progress Report Area 1995 Pilot Treatment Systems Study	EA	JAN-1996
	FTD -30-3805 , Monthly Progress Report Area 3805 Pilot Treatment Systems Study	EA	JAN-1996
	FTD -30-1995, Semiannual Periodic Report & Monthly Report of Progress for Areas 1995 & 3805 Gasoline Alley, Fort Drum, NY	EA	JAN-1996
	FTD -30-3805, Semiannual Periodic Report & Monthly Report of Progress for Areas 1995 & 3805 Gasoline Alley, Fort Drum, NY	EA	JAN-1996
	FTD -93, Response to Comments & Addendum to Final Design for Remediation of HFAC, Syracuse NY	MP	JAN-1996
	FTD -30-3805, Monthly Progress Rpt Areas 1995-3805 Performance Period 1-30 Nov 95	EA	JAN-1996
	GIS, Fort Drum IRP GIS User Documentation Version 1.0	Radian	FEB-1996
	FTD -12, Response to USACE & Fort Drum Comments on Draft Work Plans for the 4 New SWMUs at Fort Drum, NY	MP	FEB-1996
	FTD -85, Response to USACE & Fort Drum Comments on Draft Work Plans for the 4 New SWMUs at Fort Drum, NY	MP	FEB-1996
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Title	Author	Date
FTD -112, Response to USACE & Fort Drum Comments on Draft Work Plans for the 4 New SWMUs at Fort Drum, NY	MP	FEB-1996
FTD -7, Fourth Quarter Stream Flow Gauging Results OSL	EA	FEB-1996
FTD -31, Groundwater Sampling Letter Reports of the Resampling of Wells 1 & 2 for Semi-Volatile Compounds (event 6 Dec 1995)	Weston	FEB-1996
FTD -91, Interim Rpt on Monitoring & Extraction Well Installation Development & Well Gauging	EA	FEB-1996
FTD -74, Building P-44 Quarterly Groundwater Sampling McLaren/Hart Project (1/96 event)	M Hart	FEB-1996
FTD -30, Rpt for Field & Analytical Svcs Rmval 22 Underground Storage Tanks Gas Alley Appendix Volume 2 Appendices E-G	EA	MAR-1996
FTD -7, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 1 Groundwater Monitoring Data Volume I of II	Radian	MAR-1996
FTD -30, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 1 Groundwater Monitoring Data Volume I of II	Radian	MAR-1996
FTD -30-1295, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 1 Groundwater Monitoring Data Volume I of II	Radian	MAR-1996
FTD -30-1395, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 1 Groundwater Monitoring Data Volume I of II	Radian	MAR-1996
FTD -30-1495, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 1 Groundwater Monitoring Data Volume I of II	Radian	MAR-1996
FTD -30-1595, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 1 Groundwater Monitoring Data Volume I of II	Radian	MAR-1996
FTD -30-1995, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 1 Groundwater Monitoring Data Volume I of II	Radian	MAR-1996
FTD -30-3805, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 1 Groundwater Monitoring Data Volume I of II	Radian	MAR-1996
FTD -7, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 1 Groundwater Monitoring Data Volume II of II	Radian	MAR-1996
FTD -30-1295, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 1 Groundwater Monitoring Data Volume II of II	Radian	MAR-1996
FTD -30-1395, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 1 Groundwater Monitoring Data Volume II of II	Radian	MAR-1996
FTD -30-1495, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 1 Groundwater Monitoring Data Volume II of II	Radian	MAR-1996
FTD -30-1595, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 1 Groundwater Monitoring Data Volume II of II	Radian	MAR-1996

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Title	Author	Date
FTD -30-1795, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 1 Groundwater Monitoring Data Volume II of II	Radian	MAR-1996
FTD -30-1995, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 1 Groundwater Monitoring Data Volume II of II	Radian	MAR-1996
FTD -30-3805, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 1 Groundwater Monitoring Data Volume II of II	Radian	MAR-1996
FTD -30-1595, Fuel Dispensing Area 1595 Ft Dr Report of Findings	OBG	MAR-1996
FTD -30-1795, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 1 Groundwater Monitoring Data Volume I of II	Radian	MAR-1996
FTD -30, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 1 Groundwater Monitoring Data Volume II of II	Radian	MAR-1996
FTD -91, Letter Report Results of Baseline Groundwater Sampling Conducted 13-15 Feb 96 AAFES	EA	MAR-1996
FTD -89, Final Report UST Investigation at Building T-1245 Fort Drum NY	Weston	MAR-1996
FTD -93, Final Design for Remediation of Storm Sewer Outfall Addendum #3	MP	MAR-1996
FTD -30-3805, 3805-RW3 Treatment System Submittal Register 04/96 Spec Sect 13906 Temp Package GW Treatment System	Carbonair	APR-1996
FTD -91, As Built Drawings for the Interim Pilot Study Treatment System AAFES Svc Station Building P-2140, Map, F	EA	APR-1996
FTD -30-3805, Groundwater/Product Pumping System O&M Manual for Radian Intl, Ft Drum, NY Area 3805 Interim Remediation (RW3)	ERS	APR-1996
FTD -87, Tank Closure Report Final UST 1-6 Removal Hancock Field Army Complex	WasteTro	APR-1996
FTD -30-1395, General Work Plan Remediation of Petroleum Contaminated Soil Vapor Monitoring Point & Vapor Extraction Well Install	DOW	APR-1996
FTD -30-1295, General Work Plan Remediation of Petroleum Contaminated Soil Vapor Monitoring Point & Vapor Extraction Well Install	DOW	APR-1996
FTD -30-1495, General Work Plan Remediation of Petroleum Contaminated Soil Vapor Monitoring Point & Vapor Extraction Well Install	DOW	APR-1996
FTD -30-3805, Draft Separate Phase Product Recovery Pilot Study & Plume Characterization Work Plan Addendum	EA	APR-1996
FTD -31, Groundwater Sampling at T-91 (event March 20, 1996)	Weston	APR-1996
FTD -30, Report for Field & Analytical Services Removal of 22 UST Gasoline Alley Text & Appendix A	EA	MAY-1996
FTD -30, Report for Field & Analytical Svs Removal of 22 UST Gasoline Alley Appendix Volume I Appendices B-D	EA	MAY-1996

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FTD -7, Letter Report Comparison of Cost Estimates for Covering VS Removal of Drums Case I & II	EA	MAY-1996
FTD -7, Separate Phase Product Recovery Pilot Sys & Plume Characterization Work Plan Adden Area 3805, OSL & Gas Alley	EA	MAY-1996
FTD -30-3805, Separate Phase Product Recovery Pilot Sys & Plume Characterization Work Plan Adden Area 3805, OSL & Gas Alley	EA	MAY-1996
FTD -7, Work Plan for the Old Sanitary Landfill Leachate & Drum Characterization Gasoline Alley, Fort Drum, NY	EA	MAY-1996
FTD -30-1595, Data Gap Study and Pilot Remedial Measures Work Plan Area 1595 Gasoline Alley Ft Dr NY	EA	JUN-1996
FTD -30-3805, Monthly Report of Progress Area 3805 Pilot Treatment System Study Gasoline Alley (event 1-30 April 1996)	EA	JUN-1996
FTD -30-3805, 3805-RW3 Treatment System O & M Manual Part 1 of 2 7/96 Groundwater Remediation System Large White Binder	Carbonair	JUL-1996
FTD -30-3805, 3805-RW3 Treatment System O & M Manual Part 2 of 2 7/96 G-37 Stat Sump Pressure Transmitter (PT-700)	Carbonair	JUL-1996
FTD -30-3805, Area 3805 RW3 System Radian International LLC sampled 12 & 13 July 1996	FLI	JUL-1996
FTD -30-3805, Area 3805 RW3 System Radian International LLC sampled 30 July 1996	FLI	JUL-1996
FTD -30-1595, Final General Work Plan Soil Borings and Sample Collection Golden Pond	DOW	JUL-1996
FTD -30, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 2 Groundwater Monitoring Data Volume I of II	Radian	JUL-1996
FTD -30-1995, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 2 Groundwater Monitoring Data Volume I of II	Radian	JUL-1996
FTD -30-3805, Gasoline Alley Quarterly Groundwater Monitoring Program Quarter 2 Groundwater Monitoring Data Volume I of II	Radian	JUL-1996
FTD -30-3805, Technical Support for Scope of Services Groundwater Modeling & Feasibility Study Area 3805 Ltr Rpt	USCOE	JUL-1996
FTD -30-3805, Scope of Services Modification and OSL Pilot Interim Remedial Measures Letter Report	USCOE	JUL-1996
FTD -30-3805, Monthly Report of Progress Area 3805 Pilot Treatment System Performance Period 1-30 June 1996	EA	JUL-1996
FTD -30-3805, Monthly Report of Progress Area 3805 Pilot Treatment System Study Performance Period 1-30 May 1996	EA	JUL-1996
AMSA #9, Final Remedial Design Investigation Report Volume II of III	MP	JUL-1996
AMSA #9, Final Remedial Design Investigation Report Volume III of III	MP	JUL-1996
FTD -91, Scope of Work for Continued Performance Monitoring & Assessment of the Groundwater	USACE	JUL-1996

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Title	Author	Date
Extraction & Treatment Ltr Rp,		
FTD -30-3805, Gasoline Alley RW3 System as Built	DOW	AUG-1996
FTD -30-3805, Area 3805 RW3 System Radian International LLC (event 14 August 96)	FLI	AUG-1996
FTD -30-3805, Area 3805 Radian International LLC (event 15 August 96)	FLI	AUG-1996
FTD -30-3805, Area 3805 RW3 System Radian International LLC (event 26 August 96)	FLI	AUG-1996
Fifth Quarter Sampling Data Airfield Landfill Letter Report (event June 1996),	CDM	AUG-1996
FTD -30-3805, As Built Drawings 1 set 2 sheets/3805-RW3 Treatment System	DOW	AUG-1996
FTD -30, Fall 96 Quarterly GW Monitoring Program & Natural Attenuation Parameter Sampling Gas Alley Ft Dr NY	EA	AUG-1996
FTD -7, First Quarter Stream Gauging Report Old Sanitary Landfill Creek (event 11 July 96)	EA	AUG-1996
FTD -30-3805, Technical Support for Scope of Services Modification Vacuum Enhanced Product Studies Bioslurping Pilot Studies	USCOE	AUG-1996
FTD -30-3805, Monthly Report of Progress Area 3805 Pilot Treatment System Study Letter Report Performance Period 1-31 July 1996	EA	AUG-1996
FTD -7, First Quarter Seep Letter Report Old Sanitary Landfill Letter Report (event 2 July 1996)	EA	SEP-1996
FTD -30-3805, Monitoring & Recovery Well Installation Area 3805 Letter Report	EA	SEP-1996
FTD -72, New Jersey Army National Guard Quarterly Groundwater Monitoring Quarter 8	Geo Inc.	SEP-1996
FTD -30-3805, Gasoline Alley Area 3805 Groundwater Treatment Product Recovery Systems Training Video	Radian	SEP-1996
FTD -8, Responses to Comments on the Draft Post-Closure O&M Plan, Airfield Sanitary Landfill, FTD, NY	CDM	SEP-1996
FTD -30-3805, Area 3805 RW3 System Radian International LLC	Radian	SEP-1996
FTD -74, Final Safety Health & Emergency Response Plan for Remedial Investigation at Battery Shop Bldg P-44	EA	SEP-1996
FTD -30-3805, Monthly Report of Progress Area 3805 Pilot Treatment System Study Performance Period 1-31 August 1996	EA	SEP-1996
FTD -12, Final Field Investigation Plan (FIP) Sampling & Analysis Service in Support of Preliminary Assessment Scoring	MP	SEP-1996
FTD -85, Final Field Investigation Plan (FIP) Sampling & Analysis Service in Support of Preliminary Assessment Scoring	MP	SEP-1996
FTD -94, Final Field Investigation Plan (FIP) Sampling & Analysis Service in Support of Preliminary Assessment Scoring	MP	SEP-1996
FTD -112, Final Field Investigation Plan (FIP) Sampling & Analysis Service in Support of Preliminary Assessment Scoring	MP	SEP-1996



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FTD -12, Final Quarterly Assurance Project Plan Addendum for Sampling & Analysis Services in Support of Preliminary Assess	MP	SEP-1996
FTD -85, Final Quarterly Assurance Project Plan Addendum for Sampling & Analysis Services in Support of Preliminary Assess	MP	SEP-1996
FTD -94, Final Quarterly Assurance Project Plan Addendum for Sampling & Analysis Services in Support of Preliminary Assess	MP	SEP-1996
FTD -112, Final Quality Assurance Project Plan Addendum for Sampling & Analysis Services in Support of PA, Fort Drum, NY	MP	SEP-1996
FTD -30-3805, Area 3805 RW3 System Radian International LLC Sampled July 13, 1996	FLI	OCT-1996
FTD -30-1595, Summary Report Preremedial Activities Soil Borings & Sample Collection Gas Alley Golden Pond	DOW	OCT-1996
FTD -30-3805, Monthly Report of Progress Area 3805 Pilot Treatment System Study, Gasoline Alley Performance Period 1-30 Sep 96	EA	OCT-1996
FTD -91, Quarterly Progress Report for Operations, Maintenance and Sampling Conducted 1 July-30 Sept 96 GW Extraction & Treatment System Bldg T-2140 FTD NY	EA	OCT-1996
FTD -30-3805, Quarterly Discharge Report for Area 3805 (event 1-July to 30-Sept 96)	EA	OCT-1996
FTD -30, Site Photographs Gasoline Alley Letter Report		OCT-1996
FTD -30-3805, Monthly Report of Progress Pilot Treatment System Study Performance Period 1-31-96, Letter Report	EA	NOV-1996
FTD -7, Second Quarter Stream Gauging Report Old Sanitary Landfill Creek, Letter Report (event 9 October 96),	EA	NOV-1996
FTD -30, Master Safety & Health Plan for Underground Storage Tank and/or Above Ground Storage Tank Removal Containment	DOW	NOV-1996
FTD -93, Work Plan for Remediation of Storm Sewer Outfall Hancock Field Army Complex Syracuse, NY Revised	Enviro	NOV-1996
FTD -72, Closure Report NJNG Settling Pond Remediation Contract #DACA31-94-C-0174	GAI Inc	NOV-1996
FTD -30-3805, Boislurping Feasibility Test at Area 3805	EA	DEC-1996
FTD -7, Second Quarter Seep Monitoring Program OSL (event 9 October 96)	EA	DEC-1996
FTD -72, Fort Drum New Jersey Army National Guard Quarterly Groundwater Monitoring Quarter 9 (event 11/13/96)	Geomatrix	DEC-1996
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FTD -30-3805, Quarterly Discharge Report for Area 3805 Letter Report (event 1-July to 31-December 96)	EA	JAN-1997

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FTD -30-3805, Final Monitoring & Recovery Well Installation Report Area 3805 (3805-RW6, 3805-RW5)	EA	JAN-1997
FTD -30-1795, Final Bail Down Test Letter Report Area 1795 Fort Drum, NY	EA	JAN-1997
FTD -30-1595, Final Monitoring Well & Piezometer Installation Report, Area 1595 Gasoline Alley	EA	JAN-1997
FTD -30-1795, Final Monitoring Well Recovery Well & Piezometer Installation Report Area 1795 Gasoline Alley	EA	JAN-1997
FTD -30-1595, General Work Plan Surface Water Impoundment Restorations & Installations of Flow Measurement Devices	EA	JAN-1997
FTD -30-1595, Summary Report Preremedial Activities Soil Borings & Sample Collection Gasoline Alley Area 1595 Golden Pond	DOW	JAN-1997
FTD -30-1395, Bristol Babcock Inc Equipment Manual Radio Telemetry Radian International LLC O & M Manual Volume 5	Bristol Babcock	JAN-1997
FTD -30-1495, Bristol Babcock Inc Equipment Manual Radio Telemetry Radian International LLC O & M Manual Volume 5	Bristol Babcock	JAN-1997
FTD -30-1395, O & M Maintenance Manual for Radian International LLC Fort Drum Military Reservation Volume 3	Global Tec	JAN-1997
FTD -30-1495, O & M Maintenance Manual for Radian International LLC Fort Drum Military Reservation Volume 3	Global Tec	JAN-1997
FTD -30-1395, O & M Maintenance Manual for Radian International LLC Fort Drum Military Reservation Volume 4	Global Tec	JAN-1997
FTD -91, Quarterly Progress Report for Operations, Maintenance & Sampling Conducted 1 Oct-31 Dec 96 at the GW Extraction and Treatment System Building T-2140 FTD	EA	JAN-1997
FTD -76, Safety & Health Phase Out Report Remedial Action Building T-4002 Volume II	Dames & Moore	JAN-1997
FTD -76, Safety & Health Phase Out Report Remedial Action Building T-4002 Volume I	Dames & Moore	JAN-1997
FTD -30-1395, Fort Drum Locations 1395 and 1495 Operations and Maintenance Manual SVE/AAS Systems Volume 2 of 6	Radian	JAN-1997
FTD -30-1395, O & M Maintenance Manual Soil Vapor Extraction/Air Sparging System, Areas 1395 & 1495, Volume 2	Fliteway	JAN-1997
FTD -30-1495, O & M Maintenance Manual Soil Vapor Extraction/Air Sparging System, Areas 1395 & 1495, Volume 2	Fliteway	JAN-1997
FTD -30-1495, Bristol Babcock Distributed Process Controllers DPC 3330 for Radian International O&M Manual Volume 6 of 6	Radian	JAN-1997
FTD -30-1495, Fort Drum Locations 1395 and 1495 Operations and Maintenance Manual SVE/AAS Systems Volume 2 of 6	Radian	JAN-1997
FTD -30-1395, Operations and Maintenance Manual for Radian International FTD (Catalytic Oxidizer Unit)	Radian	JAN-1997

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Title	Author	Date
Volume 3 of 6		
FTD -30-1395, Operations and Maintenance Manual for Radian International FTD (Catalytic Oxidizer Unit) Volume 4 of 6	Radian	JAN-1997
FTD -30-1495, Operations and Maintenance Manual for Radian International FTD (Catalytic Oxidizer Unit) Volume 3 of 6	Radian	JAN-1997
FTD -30-1495, Operations and Maintenance Manual for Radian International FTD (Catalytic Oxidizer Unit) Volume 4 of 6	Radian	JAN-1997
FTD -30-1395, Bristol Babcock Equipment Manual Radio Telemetry System Operations and Maintenance Manual Volume 5 of 6	Radian	JAN-1997
FTD -30-1495, Bristol Babcock Equipment Manual Radio Telemetry System Operations and Maintenance Manual Volume 5 of 6	Radian	JAN-1997
FTD -30-1395, Bristol Babcock Distributed Process Controllers DPC 3330 for Radian International O&M Manual Volume 6 of 6	Radian	JAN-1997
FTD -30-1495, O & M Maintenance Manual for Radian International LLC Fort Drum Military Reservation Volume 4	Global Tec	JAN-1997
FTD -30-1295, Comprehensive Site Evaluation Area 1295 Gasoline Alley Fort Drum New York	Radian	FEB-1997
FTD -30-3805, Report of Progress Area 3805 Pilot Treatment System Study Performance Period 1 Nov - 31 Dec 96	EA	FEB-1997
FTD -30-1595, General Work Plan Surface Water Impoundment Restorations & Installations of Flow Measurement Devices	DOW	FEB-1997
Investigative Derived Material at Building 1600 Letter Report	EA	FEB-1997
FTD -76, Contract for Demolition and Contaminated Soil Removal for Building T-4002	USCOE	FEB-1997
FTD -30-1395, Volume I of II General Work Plan Bioventing & SVE System Installation Areas 1395 & 1495 Gas A. FTD NY	Radian	FEB-1997
FTD -30-1495, Volume I of II General Work Plan Bioventing & SVE System Installation Areas 1395 & 1495 Gas A. FTD NY	Radian	FEB-1997
FTD -30-1395, Volume II of II Gen. Work Plan (Appendices) Bioventing & SVE Sys. Install. Areas 1395 & 1495 GA FTD NY	Radian	FEB-1997
FTD -30-1495, Volume II of II Gen. Work Plan (Appendices) Bioventing & SVE Sys. Install. Areas 1395 & 1495 GA FTD NY	Radian	FEB-1997
FTD -7, Third Quarter Stream Gauging Report OSL Creek Gasoline Alley (event Jan. 9, 1997)	EA	FEB-1997
FTD -7, Third Quarter Seep Monitoring Program Report OSL (event 8 January 97)	EA	MAR-1997
FTD -30-1595, Final Well Monitoring Program Report Area 1595 Gasoline Alley	EA	MAR-1997
FTD -30-1595, Revised Final Report Building 1599 Engineering Evaluation Area 1595	EA	MAR-1997

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Title	Author	Date
FTD -74, Battery Shop P-44 Groundwater Sampling (2/97 event)	M Hart	MAR-1997
FTD -30, Groundwater and Subsurface Soil Sampling WES Treatability Study	EA	MAR-1997
Summary Report Underground Storage Tank Removal 77th Reserve Support Command	Radian	MAR-1997
FTD -30, Third Quarter 1996 December 1996 - January 1997 Groundwater Sampling Results Gasoline Alley	MP	MAR-1997
FTD -30-3805, Re-Analyses of CDM Federal Programs Slug Test Data on T3805 Monitoring Wells	EA	MAR-1997
FTD -30-1795, Final First Semi Annual Surface Water & Sediment Sampling Report Area 1795 Creek Gasoline Alley September 1996	EA	MAR-1997
FTD -7, Second Semiannual Surface Water & Sediment Sampling Results Old Sanitary Landfill (sampling event: Jan 1997)	MP	MAR-1997
FTD -76, Freedom of Information Act Documents Requested on 5/22/97 (copies, large envelope)		MAR-1997
FTD -76, 4002 Confirmation Soil Sampling Pesticides/Herbicides 1st Round Oct 1996; Chemical Quality Summary Rpt; etc (box)	R & R	MAR-1997
FTD -30-1795, Final 1996 Data Gap Study Aquifer Pumping Test Report Area 1795	EA	MAR-1997
FTD -30-3805, Report of Progress Area 3805 Pilot Treatment System Study Performance Period 1 January - 31 March 1997	EA	APR-1997
FTD -31, Letter Report Groundwater Sampling at T-91 Site, Results of Round 8 (event March 19, 1997)	Weston	APR-1997
FTD -8, Closure Plan Airfield Landfill Fort Drum, New York	CDM	APR-1997
FTD -7, Draft Stream Gauging Program Report July 1996-April 1997 OSL Creek, Gasoline Alley Fort Drum	EA	APR-1997
FTD -91, Quarterly Progress Rpt for Operations, Maintenance, & Sampling from 1 Jan to 31 March 97 Extract & Treat Bldg 2140	EA	APR-1997
FTD -30, Disposal Documents for Areas 1295, 1395, 1495 & 1595	High Acre	APR-1997
FTD -7, Maps Interim Corrective Measures Old Sanitary Landfill	USCOE	APR-1997
FTD -30-3805, Report of Progress - Area 3805 Pilot Treatment System Study, Gasoline Alley, FTD, NY	EA	APR-1997
FTD -91, Petro-Tite Testing (3 USTs) Results, P-2140 March-April 1997	Adironda	APR-1997
FTD -31, Groundwater Sampling at T-91 Site, Fort Drum (March 19, 1997)	Weston	APR-1997
FTD -30-1595, Final First Semi Annual Surface Water Sampling Report September 1996, Area 1595 Creek Gasoline Alley	EA	MAY-1997
FTD -30-1595, General Work Plan Surface Water Impoundment Restorations & Installation of Flow Measurement Revised Final	DOW	MAY-1997
FTD -30, Fourth Quarter 1996 Groundwater Sampling Results, Gasoline Alley	MP	JUN-1997

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Title	Author	Date
FTD -87, Maps-Cover Sheet/Drawing Index Demolition Plan-Demolition Details	USCOE	JUN-1997
FTD -7, Final Work Plan Addendum Separate-Phase Product Plume Delineation Study Area 3805/Old Sanitary Landfill	EA	JUN-1997
FTD -30-3805, Final Work Plan Addendum Separate-Phase Product Plume Delineation Study Area 3805/Old Sanitary Landfill	EA	JUN-1997
FTD -30-3805, Operation & Maintenance Summary Report 12Jul96-15Sep96 Package Treatment System Area 3805-RW3	Radian	JUN-1997
FTD -30-3805, Monthly Operating Report, Area 3805 RW-3 (GW treatment system) June 1997	Radian	JUN-1997
FTD -30-1795, Final Work Plan Aquifer Air Sparging/Soil Vapor Extraction Pilot Study Area 1795 Gasoline Alley Ft Dr NY	EA	JUL-1997
FTD -30-1795, Final Work Plan Bioslurping Pilot Study Areas 1795 & 3805 Gasoline Alley Ft Dr NY	EA	JUL-1997
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, FTD -30-3805, Operation & Maintenance Summary Rpt Package Treatment System 12Jul-15Sep96	Radian	JUL-1997
FTD -30-3805, Monthly Operating Report, Area 3805 RW-3 (pump & treat system) July 1997	Radian	JUL-1997
FTD -30-1795, Quarterly Report of Progress Area 1795 Pilot Treatment System Study April-June 97 Gasoline Alley	EA	AUG-1997
FTD -30-3805, Report of Progress Area 3805 Pilot Treatment System Study April-June1997 Gasoline Alley	EA	AUG-1997
FTD -91, Quarterly Progress Rpt Operations, Maintenance, Sampling 1April-30June97 Building P-2140	EA	AUG-1997
FTD -7, Stream Gauging Program Report, OSL Creek, Gasoline Alley, Fort Drum, New York (event July 96 to April 97)	EA	AUG-1997
FTD -30-3805, Monthly Operating Report, Area 3805 RW-3 (GW treatment system), August, 1997	Radian	AUG-1997
FTD -30-1595, Quarterly Report of O&M Technical Support-Building 1599 Treatment System, April-June 1997, Gas Alley, FTD	EA	AUG-1997
FTD -30-1795, Final Stream Gauging Program Report July 1996 April 1997 Area 1795 Creek Gasoline Alley Ft Dr NY	EA	AUG-1997
FTD -30-1595, Final Stream Gauging Program Report July 1996 March 1997 Area 1595 Creek Gasoline Alley Ft Dr NY	EA	AUG-1997
FTD -87, Completion of Monitoring Well Decommissioning, Hancock Field Army Complex, Syracuse, NY	Radian	SEP-1997
FTD -30, First Quarter 1997 Groundwater Sampling Results, Gasoline Alley, Fort Drum, FTD, NY	MP	SEP-1997
FTD -8, Post-Closure Operations & Maintenance Plan for Airfield Sanitary Landfill, Fort Drum, New York	CDM	SEP-1997

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Title	Author	Date
FTD -8, Airfield Sanitary Landfill 100% Specifications Cover Improvements	CDM	SEP-1997
FTD -8, Annual GW Sampling Data Airfield Sanitary Landfill Appendix E of report 887 (for event 8/97) (Large Envelope)	CDM	SEP-1997
FTD -30-3805, Monthly Operating Report Area 3805 RW-3 event August 28 - Sept 25 1997	Radian	SEP-1997
FTD -7, General Work Plan Drum Removal & Slope Stabilization Old Sanitary Landfill, Ft. Drum, NY (& HASP Addendum)	Radian	SEP-1997
FTD -8, Airfield Sanitary Landfill Design Analysis 100% Submittal Cover Improvements	CDM	SEP-1997
FTD -8, Airfield Sanitary Landfill Cost Estimate 100% Submittal Cover Improvements	CDM	SEP-1997
FTD -8, Airfield Sanitary Landfill 100% Specs Cover Improvements Drawings Existing Site Layout & Erosion Control Plan	CDM	SEP-1997
FTD -7, Groundwater Modeling Report Areas 1795 and 3805/Old Sanitary Landfill Fort Drum, NY	WES	OCT-1997
FTD -30-1795, Groundwater Modeling Report Areas 1795 and 3805/Old Sanitary Landfill Fort Drum, NY	WES	OCT-1997
FTD -30-3805, Groundwater Modeling Report Areas 1795 and 3805/Old Sanitary Landfill Fort Drum, NY	WES	OCT-1997
FTD -7, Third Semi Annual Surface Water & Sediment Sampling Results Old Sanitary Landfill (July 29 & 31, 97)	MP	OCT-1997
FTD -8, Annual Sampling Data, Airfield Sanitary Landfill (August 1997 event)	CDM	OCT-1997
FTD -30-1795, Final Second Semi Annual Surface Water & Sediment Sampling Report Area 1795 Creek Gasoline Alley	EA	OCT-1997
FTD -30-1795, Final Well Monitoring Program Report Area 1795 Gasoline Alley event April 96 - March 97	EA	OCT-1997
FTD -30-1395, Monthly Report of Treatment System Operations, FTD, Gasoline Alley, Areas 1395 & 1495 (for 9/24-10/2)	Radian	OCT-1997
FTD -30-1495, Monthly Report of Treatment System Operations, FTD, Gasoline Alley, Areas 1395 & 1495 (for 9/24-10/2)	Radian	OCT-1997
FTD -30-3805, Monthly Operating Report Area 3805 RW-3 October 1997	Radian	OCT-1997
Public Involvement and Response Plan (PIRP) for Installation Restoration Program Activities at Fort Drum, NY	WC	OCT-1997
FTD -30-1795, Quarterly Report of Progress Area 1795 Pilot Treatment System Study July to September 1997 Gasoline Alley Ft Dr NY	EA	OCT-1997
FTD -30-1595, Final Second Semi Annual Surface Water Sampling Report Area 1595 Creek Gasoline Alley	EA	OCT-1997
FTD -30-3805, Report of Progress Area 3805 Pilot Treatment System Study event July-Sept 97 Gasoline Alley	EA	NOV-1997
FTD -91, Quarterly Report of Progress Building P-2140 Interim Treatment System Pilot Study 1 July to 30 Sept	EA	NOV-1997

## IRP Previous Studies

1997

Title	Author	Date
97		
FTD -7, Final Quarterly Seep Monitoring Program Report Old Sanitary Landfill Gas Alley, Ft Dr NY	EA	NOV-1997
FTD -72, Quarterly Groundwater Monitoring Program Report Sept 97 Sampling Event NJARNG	EA	NOV-1997
FTD -30-1595, Final Stream Gauging Report Aug 97 Area 1595 Gasoline Alley Ft Dr NY,	EA	NOV-1997
FTD -30-1595, Final Report Building 1599 Treatment System Upgrades Area 1595 Gasoline Alley Ft Dr NY	EA	NOV-1997
FTD -30-1595, Quarterly Report of O & M Technical Support Building 1599 Treatment System July-October 1997, Gas Alley Ft Dr	EA	NOV-1997
FTD -30-3805, Monthly Operating Report, Area 3805 RW-3, November 1997	Radian	NOV-1997
FTD -93, As Built for Sage Storm Sewer Outfall RA Completed 1997	EnviroCon	NOV-1997
FTD -74, Decommissioning of Monitoring Wells P44-001 and P44-002 Battery Shop Building P-44, FDMR, Fort Drum, NY	EA	DEC-1997
FTD -74, Decommissioning of Monitoring Wells P44-001 and P44-002 Battery Shop Building P-44, FDMR, Fort Drum, NY	EA	DEC-1997
FTD -74, Field Investigation & Remedial Action Report Battery Shop Building P-44	EA	DEC-1997
FTD -30, Second Quarter 1997 Groundwater Sampling Results Gasoline Alley, Fort Drum, New York	MP	DEC-1997
1997 GIS Database Update Fort Drum, NY w/data disk	Radian	DEC-1997
FTD -30-3805, Monthly Operating Report Area 3805 RW-3 December 1997	Radian	DEC-1997

1998

FTD -30-1595, Summary of Activities December 1997 Operation & Maintenance Technical Support Building 1599	EA	JAN-1998
FTD -91, Performance Evaluation Rpt. GW Extract. & Treat. & FP Recovery Sys., Bldg. P-2140, March 1996 - March 1997	EA	JAN-1998
FTD -30-3805, Quarterly Report of Progress Area 3805 Pilot Treatment System Study October-December 97 Gas Alley	EA	JAN-1998
FTD -30-1595, Summary of Activities January 1998 Operation & Maintenance Technical Support Building 1599	EA	JAN-1998
FTD -30-1795, Quarterly Report of Progress Area 1795 Pilot Treatment System Study October-December 97 Gas Alley	EA	JAN-1998
FTD -72, Quarterly Groundwater Monitoring Program Report December 1997 Sampling Event NJANG Facility	EA	JAN-1998
, FTD -91, Quarterly Rpt of Progress Building P-2140 Interim Treatment Sys Pilot Study Ft Dr NY(PP: 1 Oct - 31 Dec 97)	EA	JAN-1998
FTD -8, Maps for Final Specifications Airfield Sanitary Landfill Cover Improvements	CDM	JAN-1998
FTD -8, Final Specifications Airfield Sanitary Landfill	CDM	JAN-1998

## IRP Previous Studies

1998

Title	Author	Date
Cover Improvements		
FTD -8, Final Design Analysis Report Airfield Sanitary Landfill Cover Improvements	CDM	JAN-1998
FTD -30-3805, Monthly Operating Report Area 3805 RW-3 January 1998	Radian	JAN-1998
FTD -8, Revised drawing G1 for CDM's Final Design for ASL Cover Improvements	CDM	JAN-1998
FTD -30-1395, O & M Maintenance Plan Bioventing/Soil Vapor Extraction Treatment Systems, Areas 1395 & 1495, Volume 1	Radian	FEB-1998
FTD -30-1495, O & M Maintenance Plan Bioventing/Soil Vapor Extraction Treatment Systems, Areas 1395 & 1495, Volume 1	Radian	FEB-1998
FTD -30-1395, Results of Constant Rate and In Situ Respiration Tests Gasoline Alley Areas 1395 & 1495 Fort Drum NY	Radian	FEB-1998
FTD -30-1495, Results of Constant Rate and In Situ Respiration Tests Gasoline Alley Areas 1395 & 1495 Fort Drum NY	Radian	FEB-1998
FTD -30-1595, Summary of Activities February 1998 Operation and Maintenance Technical Support Bldg 1599, Ft Dr, NY	EA	FEB-1998
FTD -76, Fourth Quarter Sampling Data Building T-4002 Fort Drum, NY (event 20 Nov 97)	CDM	FEB-1998
FTD -30-3805, Recovery Well and Monitoring Well Installation Summaries for 1997 Field Season Area 3805 Gasoline Alley	EA	FEB-1998
FTD -30-3805, Monthly Operating Report Area 3805 RW-3 February 1998	Radian	FEB-1998
FTD -30-3805, Monthly Operating Report, Area 3805 RW-3, March 1998	Radian	MAR-1998
FTD -30-1595, Summary of Operation and Maintenance Technical Support Building 1599, Fort Drum, NY (event January-March 1998)	EA	MAR-1998
FTD -93, Storm Sewer Outfall Remediation Hancock Field Army Complex Syracuse, NY Completion of Work	USCOE	MAR-1998
FTD -30-1795, Aquifer Air Sparging/Soil Vapor Extraction Pilot Study Report Area 1795 Gasoline Alley, Fort Drum, NY	EA	APR-1998
FTD -30-3805, Quarterly Report of Progress Area 3805 Pilot Treatment System Study January-March 98 Gasoline Alley	EA	APR-1998
FTD -30-1595, Summary of Activities April 1998 Operation and Maintenance Technical Support Building 1599 Ft Dr NY	EA	APR-1998
FTD -72, Quarterly GW Monitoring Program Report, March 1998 Sampling Event, New Jersey Army National Guard	EA	APR-1998
FTD -30-3805, Monthly Operating Report Area 3805 RW-3 April 1998	Radian	APR-1998
FTD -30-1595, Summary of Activities May 1998 Operation & Maintenance Technical Support Building 1599, Fort Drum, NY	EA	MAY-1998
FTD -76, Fifth Quarter Groundwater Sampling Data	CDM	MAY-1998



## IRP Previous Studies

1998

Title	Author	Date
Building T-4002 Fort Drum, New York		
FTD -30-1595, Gasoline Alley, Fort Drum Bioremediation Evaluation Area 1595 Phase 1 & Phase 2	WES	MAY-1998
FTD -30-3805, Monthly Operating Report Area 3805 RW-3 May 1998	Radian	MAY-1998
FTD -30-1595, Quarterly Report of O & M Technical Support, April June-1998, Building 1599 Treatment System, Gas Alley	EA	JUN-1998
FTD -22, Groundwater Monitoring at Explosive Ordnance Disposal (EOD) Burn Sites Ranges 17 & 35 Ft Dr NY	MP	JUN-1998
FTD -24, Groundwater Monitoring at Explosive Ordnance Disposal (EOD) Burn Sites Ranges 17 & 35 Ft Dr NY	MP	JUN-1998
FTD -30-1795, Gasoline Alley, Fort Drum Bioremediation Evaluation Area 1795 Phase I & Phase II	WES	JUN-1998
New Version of GIS/Access databases on CD-ROM (includes 1 CD-handbook, IRPMVAIS, validvals)	Radian	JUN-1998
FTD -30-3805, Monthly Operating Report Area 3805 RW-3 July 1998	Radian	JUN-1998
FTD -30, First Semiannual 1998 Groundwater Sampling Event Results Gasoline Alley Fort Drum, NY (w/1-disk)	MP	JUL-1998
FTD - 91, Quarterly Report of Progress-Bldg P-2140 Interim Treatment System Pilot Study FTD NY (pp 1 April-30 June 1998)	EA	JUL-1998
FTD -30-1595, Summary of Activities - July 1998 O&M Technical Support, Building 1599, Fort Drum, NY	EA	JUL-1998
FTD -31, Groundwater Sampling at Building T-91, Fort Drum, NY Round 9 Results (April 1998),	Weston	JUL-1998
FTD -7, Summary of Surface Water and Sediment Sampling Results, OSL, FTD, NY (4 events: 7/96-6/98)	MP	JUL-1998
FTD -30-3805, Monthly Operating Report Area 3805 RW-3 June 1998	Radian	JUL-1998
FTD -8, ASL Cover Improvement Original Ground Topography (Drawing)	Thew	JUL-1998
Monitoring Well Abandonment Activities at Fort Drum, New York (10 wells, base-wide, July 1998 event)	CDM	AUG-1998
FTD -30-3805, Quarterly Report of Progress Area 3805 Pilot Treatment System Study, Apr-Jun 1998 Gas. Alley	EA	AUG-1998
FTD -8, ASL Cover Improvement Top of Sand Topography (Drawing)	Thew	AUG-1998
FTD -30-1395, Gas Alley Soil Remediation Final Work Plan for In Situ Respiration Test Areas 1395 & 1495	Radian	SEP-1998
FTD -30-1495, Gas Alley Soil Remediation Final Work Plan for In Situ Respiration Test Areas 1395 & 1495	Radian	SEP-1998
FTD -8, Airfield Sanitary Landfill Site Visit	CDM	SEP-1998
FTD -8, Annual Sampling (groundwater) Data July 1998	CDM	SEP-1998
FTD -7, Data Consolidation and Evaluation Conceptual Site Model Development Gasoline Alley and Old	MP	SEP-1998

## IRP Previous Studies

1998

Title	Author	Date
Sanitary Landfill		
FTD -30, Data Consolidation and Evaluation Conceptual Site Model Development Gasoline Alley and Old Sanitary Landfill	MP	SEP-1998
FTD -8, Safety and Health Phase-out Report (Airfield Sanitary Landfill Improvements at Fort Drum, NY)	ECG Indus	SEP-1998
FTD -91, Performance Evaluation Rpt, GW Extraction & Treatment & Free-Product Recovery Sys Bldg P- 2140, 4/97-3/98	EA	OCT-1998
FTD -30-1595, Groundwater Modeling Study Area 1595 Gasoline Alley Fort Drum, New York	MP	OCT-1998
FTD -30-1795, Bioslurping Study Report Areas 1795 & 3805 Gasoline Alley Fort Drum, New York	EA	OCT-1998
FTD -30-1795, Final Comprehensive Contaminant Assessment Report Volume IV Area 1795/WWII Landfill Gasoline Alley Ft Dr NY	EA	OCT-1998
Final Comprehensive Contaminant Assessment Report Volume IV Area 1795/WWII Landfill Gasoline Alley Ft Dr NY	EA	OCT-1998
FTD -30-1595, Final Comprehensive Contaminant Assessment Report Volume III Area 1595 Gasoline Alley Fort Drum	EA	OCT-1998
FTD -7, Old Sanitary Landfill Wetlands Evaluation Technique (WET) Baseline Conditions Assessment & Results Ft Dr NY	MP	OCT-1998
FTD -30-1395, Gasoline Alley Soil Remediation Quarterly Update of Treatment System Operations Areas 1395 & 1495	Radian	OCT-1998
FTD -30-1495, Gasoline Alley Soil Remediation Quarterly Update of Treatment System Operations Areas 1395 & 1495	Radian	OCT-1998
FTD -22, Groundwater Monitoring at EOD Burn Sites Ranges 17 & 35 Fort Drum, NY w/CD	MP	OCT-1998
FTD -24, Groundwater Monitoring at EOD Burn Sites Ranges 17 & 35 Fort Drum, NY w/CD	MP	OCT-1998
FTD -8, Final As-built Survey Airfield Sanitary Landfill Fort Drum Military Reservation Tug Hill Construction, Inc. (Drawing)	Thew	OCT-1998
FTD -91, Quarterly Report of Progress Building P-2140 Interim Treatment System Pilot Study Fort Drum, New York	EA	NOV-1998
FTD -112, General Work Plan Range 17 POL Spill Fort Drum, New York	Radian	NOV-1998
FTD -30-1595, Annual Stream Gauging & SW/Sediment Sampling Report Area 1595 Creek Gasoline Alley FTD NY	EA	NOV-1998
FTD -30-1795, Annual Stream Gauging & SW/Sediment Sampling Report Area 1795 Creek Gasoline Alley FTD NY	EA	NOV-1998
FTD -30-3805, Area 3805 Well Installation Report- October 1998 Gasoline Alley Fort Drum, New York	EA	DEC-1998
FTD -30-3805, Comprehensive Contaminant Assessment Volume V Areas 1895, 1995, 3805 & OSL Gasoline Alley Ft Dr NY	EA	DEC-1998

## IRP Previous Studies

1998	Title	Author	Date
	FTD -30-1795, Work Plan Bioslurping Pilot Study Area 1795, Gasoline Alley Fort Drum, New York	EA	DEC-1998
	FTD -30-3805, Quarterly Report of Progress Area 3805 Pilot Treatment System Study July-Sept 1998 Gasoline Alley Fort Drum, NY	EA	DEC-1998
1999	FTD -30-3805, Summary of Area 3805 Treatment System Upgrades August-September 1998, Gasoline Alley, FT DR, NY	EA	JAN-1999
	FTD -8, ASL Cover Improvements Project Final As Built Record Drawings Disk	EnviroCon	JAN-1999
	FTD -91, Quarterly Report of Progress Building P-2140 Interim Treatment System Pilot Study Fort Drum, New York	EA	JAN-1999
	FTD -30-3805, Quarterly Report of Progress Area 3805 Pilot Treatment System Study October - December 1998 Gas Alley Ft Dr NY	EA	FEB-1999
	FTD -30, Second Semi Annual 1998 Groundwater Sampling Event Results Gasoline Alley Fort Drum, New York	MP	FEB-1999
	FTD -7, Response to Comments on Work Plan for Construction of Enhanced Wetlands Sys & Landfill Surface Drain OSL	MP	MAR-1999
	FTD -7, Risk Assessment Work Plan Fort Drum NY Gasoline Alley, WWII Landfill, Old Sanitary Landfill	MP	MAR-1999
	FTD -30, Risk Assessment Work Plan Fort Drum NY Gasoline Alley, WWII Landfill, Old Sanitary Landfill	MP	MAR-1999
	FTD -30-WWII, Risk Assessment Work Plan Fort Drum NY Gasoline Alley, WWII Landfill, Old Sanitary Landfill	MP	MAR-1999
	FTD -7, OSL Ft Dr NY Wetlands Evaluation Technique (WET) Comparative Summary Assessment and Results	MP	MAR-1999
	FTD -7, OSL, FTD, NY Final Work Plan for Construction of Enhanced Wetlands System and Landfill Drainage Features	MP	MAR-1999
	FTD -7, OSL, FTD, NY Enhanced Wetlands System and Landfill Drainage Features (Drawings; 12 sheets)	MP	MAR-1999
	FTD -7, Final Cost Estimate Enhanced Wetlands System & Landfill Surface Drainage Features Old Sanitary Landfill, FTD, NY	MP	APR-1999
	Data Consolidation and Evaluation Conceptual Site Model Development - Phase II Sites	MP	APR-1999
	FTD -91, Quarterly Report of Progress - Building P-2140 Interim Treatment System Pilot Study, FTD, NY (1 Jan - 31 Mar 99)	EA	APR-1999
	FTD -30, Fort Drum, Gasoline Alley Groundwater Sampling Final Work Plan Addendum	MP	APR-1999
	FTD -89, UVB Pilot Study Report Building T-1245 Fort Drum, NY	Weston	APR-1999
	FTD -8, Airfield Sanitary Landfill Remedial Action Implementation Report	ECG Indus	APR-1999
	FTD -30-1795, Quarterly Report of Progress - Area 1795 Bioslurping Pilot Study	EA	MAY-1999
	FTD -31, Groundwater Sampling at Building T-91, Fort Drum, NY Round 10 Results (March 1999)	Weston	MAY-1999

## IRP Previous Studies

1999

Title	Author	Date
FTD -30, Area 1395 and 1495 Soil Boring Recommendation, Gasoline Alley, Fort Drum, New York	EA	MAY-1999
FTD -30-1595, Final Interim Remedial Measure Enhancement Design Area 1595 Gasoline Alley, Fort Drum, NY	EA	MAY-1999
FTD -30-1595, Final Interim Remedial Measure Enhancement Design Area 1595 Gasoline Alley, Fort Drum, NY (Drawings)	EA	MAY-1999
FTD -30-3805, Quarterly Report of Progress - Area 3805 Pilot Treatment System Study, Jan-Mar99, Gasoline Alley, FTD, NY	EA	MAY-1999
FTD -91, Final Remedial Investigation Data Gap Study AAFES Service Station, Building P-2140, FTD, NY	EA	JUN-1999
FTD -30, First Semiannual 1999 Groundwater Sampling Event Results - Gasoline Alley, FTD, NY	MP	JUL-1999
FTD -30-1595, Technical approach for Area 1595 Focused Feasibility Study, Gasoline Alley	EA	JUL-1999
FTD -7, Response to comments on draft work plan for OSL, 1595,1795 Surface Water and Sediment Monitoring	MP	JUL-1999
FTD -30, Response to comments on draft work plan for OSL, 1595,1795 Surface Water and Sediment Monitoring	MP	JUL-1999
FTD -91, Remedial Investigation Data Gap Study, AAFES Gas Service Station, Building P-2140	EA	JUL-1999
FTD -91, Technical Proposal for a revised groundwater monitoring program, Building P-2140	EA	JUL-1999
FTD -30, Summary of O&M Technical Support Bldg.1599, Ft Dr, NY (Performance Period April - June 99)	EA	JUL-1999
FTD -30-1795, Final Area 1795 Bioslurping Pilot Study Installation and Startup Report Gasoline Alley, FTD, NY	EA	JUL-1999
FTD -30-1795, Final Area 1795 Bioslurping System Operation and Maintenance Manual Gasoline Alley, FTD, NY	EA	JUL-1999
FTD -112, Oxygen Releasing Compound (ORC) Application at the Range 17 Spill Site, FTD, NY	MP	JUL-1999
FTD -91, Quarterly Report of Progress - Building P-2140 Interim Treatment System Pilot Study, FTD, NY (1 Apr - 30 Jun 99)	EA	JUL-1999
FTD -7, Fort Drum Surface Water & Sediment Monitoring Program Final Work Plan Addendum (OSL, Areas 1595, 1795)	MP	JUL-1999
FTD -30-1595, Fort Drum Surface Water & Sediment Monitoring Program Final Work Plan Addendum (OSL, Areas 1595, 1795)	MP	JUL-1999
FTD -30-1795, Fort Drum Surface Water & Sediment Monitoring Program Final Work Plan Addendum (OSL, Areas 1595, 1795)	MP	JUL-1999
FTD -91, Extraction Well Cleaning Interim Pilot Study Groundwater Pump & Treat System, Bldg P-2140, FTD, NY	EA	JUL-1999
FTD -30-3805, Quarterly Report of Progress - Area 3805 Pilot Treatment System Study, Apr - Jun 99, Gasoline Alley, FTD, NY	EA	JUL-1999

## IRP Previous Studies

1999

Title	Author	Date
FTD -30-1795, Final Work Plan Data Gap Study, Separate-Phase Product Plume Delineation Area 1795 Gasoline Alley, FTD, NY	EA	JUL-1999
FTD -30, Final Work Plan Remedial Investigation DGS Source Area Investigations Areas 1595, 1795, 1895, 1995, 3805 GA, FTD	EA	JUL-1999
FTD -89, Final Work Plan Remedial Investigation Data Gap Study Bldg T-1245, FTD, NY	EA	JUL-1999
FTD -8, Final Work plan Addendum for the GW Sampling at the Airfield Sanitary Landfill	MP	AUG-1999
FTD -30-1795, Quarterly Report of Progress - Area 1795 Bioslurping Pilot Study, 1 April - 30 June 1999	EA	AUG-1999
FTD -30-1595, Final Summary Report Interim Remedial Measure Enhancement June/July 1999 Gas Alley Area 1595 FTD, NY	Radian	AUG-1999
FTD -112, Range 17 POL Spill Final Report, Range 17, Fort Drum, NY	Radian	AUG-1999
FTD -112, Range 17 POL Spill Final Report (Book 2), Range 17, Fort Drum, NY (Sampling data, Appendices B & C for above rpt)	Radian	AUG-1999
FTD -112, Gasoline Alley Soil Remediation, FTD, NY, Range 17 Soil Samples Data Package (lab report soil confirmation samples)	Lanc Labs	AUG-1999
FTD -7, Old Sanitary Landfill Drainage Stabilization Project (Downchutes)	Radian	AUG-1999
FTD -30-3805, Summary of Area 3805 Treatment System Upgrades - 3805-RW11 and 3805-RW13 Gasoline Alley, FTD, NY	EA	SEP-1999
FTD -7, Phase I Risk Assessment, FTD, NY (Responses to comments on Pre-draft Risk Assessment)	MP	SEP-1999
FTD -30, Phase I Risk Assessment, FTD, NY (Responses to comments on Pre-draft Risk Assessment)	MP	SEP-1999
FTD -7, First 1999 Semiannual Surface water and Sediment Sampling Results OSL, FTD, NY (OSL, 1595, 1795 creeks)	MP	NOV-1999
FTD -30-1595, First 1999 Semiannual Surface water and Sediment Sampling Results OSL, FTD, NY (OSL, 1595, 1795 creeks)	MP	NOV-1999
FTD -30-1795, First 1999 Semiannual Surface water and Sediment Sampling Results OSL, FTD, NY (OSL, 1595, 1795 creeks)	MP	NOV-1999
FTD -91, Quarterly Report of Progress - Building P-2140 Interim Treatment System Pilot, FTD, NY	EA	NOV-1999
FTD -30-3805, Quarterly Report of Progress - Area 3805 Pilot Treatment System Study, July - Sept 1999, Gasoline Alley, FTD, NY	EA	NOV-1999
FTD -30-1795, Quarterly Report of Progress -Area 1795 Bioslurping Pilot Study, Gasoline Alley, FTD, NY (July - Sept 1999)	EA	NOV-1999
FTD -30-1795, Letter Report of Data Gap Study, Separate-Phase Product Delineation, Area 1795, Gasoline Alley, FTD, NY	EA	NOV-1999

## IRP Previous Studies

1999	Title	Author	Date
	FTD -8, Report for Annual Groundwater Sampling Performed 8/31/99 and 9/1/99 Airfield Sanitary Landfill, FTD, NY	MP	NOV-1999
2000	FTD -30-1795, Final Letter Report of Data Gap Study, Separate-Phase Product Delineation, Area 1795, Gasoline Alley, FTD, NY	EA	JAN-2000
	FTD -8, ASL, FTD, NY Final Report for Annual Groundwater Sampling Performed 8/31/99 and 9/1/99 (includes 1 CDROM)	MP	JAN-2000
	FTD -30-1595, Final Groundwater Pilot Study Design Area 1595, Gasoline Alley, FTD, NY	EA	JAN-2000
	FTD -91, Quarterly Report of Progress - Building P-2140 Interim Treatment System Pilot Study, FTD, NY	EA	JAN-2000
	FTD -91, Final Remedial Investigation Data Gap Study AAFES Service Station, FTD, NY	EA	JAN-2000
	FTD -30, Second Semi Annual 1999 Groundwater Sampling Event Results, Gasoline Alley Fort Drum, New York	MP	JAN-2000
	FTD -30-3805, Quarterly Report of Progress - Area 3805 Pilot Treatment System Pilot Study, Gasoline Alley, FTD, NY	EA	FEB-2000
	FTD -30-1795, Quarterly Report of Progress - Area 1795 Bioslurping Pilot Study, Gasoline Alley, FTD, NY	EA	FEB-2000
	FTD -76, Final Remedial Action Report for Building T-4002, Fort Drum, New York	CDM	FEB-2000
	FTD -7, Second 1999 Semiannual Surface Water and Sediment Sampling Results Old Sanitary Landfill, FTD	MP	MAR-2000
	FTD -30-1395, Quarterly Report of System Operation - Area 1395 and 1495 Systems, Gasoline Alley, FTD, NY (Oct - Dec 1999)	EA	MAR-2000
	FTD -30-1495, Quarterly Report of System Operation - Area 1395 and 1495 Systems, Gasoline Alley, FTD, NY (Oct - Dec 1999)	EA	MAR-2000
	FTD -88, Work plan for installation of new well and sampling of 3 wells for VOCs and lead at T-4006 site	MP	MAR-2000
	FTD -30-1195, Final Comprehensive Contaminant Assessment Report Vol. II Areas 1195, 1295, 1395, and 1495 Gas Alley, FTD, NY	EA	MAR-2000
	FTD -30-1295, Final Comprehensive Contaminant Assessment Report Vol. II Areas 1195, 1295, 1395, and 1495 Gas Alley, FTD, NY	EA	MAR-2000
	FTD -30-1395, Final Comprehensive Contaminant Assessment Report Vol. II Areas 1195, 1295, 1395, and 1495 Gas Alley, FTD, NY	EA	MAR-2000
	FTD -30-1495, Final Comprehensive Contaminant Assessment Report Vol. II Areas 1195, 1295, 1395, and 1495 Gas Alley, FTD, NY	EA	MAR-2000
	FTD -30-1795, Quarterly Report of Progress - Area 1795 Bioslurping Pilot Study, Gasoline Alley, FTD, NY	EA	APR-2000
	FTD -91, Quarterly Report of Progress - Building P-2140 Interim Treatment System Pilot Study, FTD, NY	EA	APR-2000
	FTD -91, Groundwater Sampling Results, AAFES Service Station, FTD, NY (sampling 3 wells, 3/7/00)	EA	APR-2000

## IRP Previous Studies

2000

Title	Author	Date
FTD -30-3805, Quarterly Report of Progress - Area 3805 Pilot Treatment System Study, Gasoline Alley, FTD, NY	EA	MAY-2000
FTD -91, Temporary Groundwater Sampling Point Results AAFES Service Station, FTD, NY	EA	MAY-2000
FTD -31, Groundwater Sampling at Building T-91, Fort Drum, NY Round 11 Results (March 2000)	Weston	MAY-2000
FTD -7, First Semiannual Year 2000 Surface Water and Sediment Sampling Results OSL and Areas 1595 & 1795	MP	JUL-2000
FTD -30-1595, First Semiannual Year 2000 Surface Water and Sediment Sampling Results OSL and Areas 1595 & 1795	MP	JUL-2000
FTD -30-1795, First Semiannual Year 2000 Surface Water and Sediment Sampling Results OSL and Areas 1595 & 1795	MP	JUL-2000
FTD -88, Report for Well Installation and Sampling Performed at Area T-4006, FTD, NY	MP	JUL-2000
FTD -30-1395, Quarterly Report of System Operation - Area 1395 and 1495 Systems, Gasoline Alley, FTD, NY (Apr - Jun 2000)	EA	JUL-2000
FTD -30-1495, Quarterly Report of System Operation - Area 1395 and 1495 Systems, Gasoline Alley, FTD, NY (Apr - Jun 2000)	EA	JUL-2000
FTD -30-1795, Quarterly Report of Progress - Area 1795 Bioslurping Pilot Study, Gasoline Alley, FTD, NY	EA	JUL-2000
FTD -91, Quarterly Report of Progress - Building P-2140 Interim Treatment System Pilot Study, FTD, NY	EA	JUL-2000
FTD -30-3805, Quarterly Report of Progress - Area 3805 Pilot Treatment System Study, Gasoline Alley, FTD, NY	EA	JUL-2000
FTD -91, Groundwater Sampling Results, June 2000 Sampling Event, AAFES Service Station, FTD, NY	EA	AUG-2000
FTD -7, Final Risk Assessment Fort Drum, New York Gasoline Alley, WWII Landfill, Old Sanitary Landfill	MP	SEP-2000
FTD -30, Final Risk Assessment Fort Drum, New York Gasoline Alley, WWII Landfill, Old Sanitary Landfill	MP	SEP-2000
FTD -30, Final Comprehensive Contaminant Assessment Report Vol. I Introduction and Overview Gasoline Alley, FTD, NY	EA	SEP-2000
FTD -30, Final Comprehensive Contaminant Assessment Report Volumes I - V Gasoline Alley, FTD, NY (CD-ROM)	EA	SEP-2000
Final Risk Assessment Work Plan FTD, NY Rng 17 & 35, Spill Nr Rng 17, T91, T1245, P2140, T4006, ASL	EA	OCT-2000
FTD -91, Quarterly Report of Progress - Building P-2140 Interim Treatment System Pilot Study, FD, NY (July - September 2000)	EA	OCT-2000
FTD -22, Final Report Groundwater Monitoring at EOD Burn Sites, Rngs 17 and 35, FTD, NY (Report and CD)	MP	OCT-2000
FTD -24, Final Report Groundwater Monitoring at EOD Burn Sites, Rngs 17 and 35, FTD, NY (Report and CD)	MP	OCT-2000
FTD -30-1795, Quarterly Report of Progress - Area 1795 Bioslurping Pilot Study, Gasoline Alley, FTD, NY (Jul-Sept 00)	EA	NOV-2000

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2000

Title	Author	Date
FTD -30-1595, Summary of Operation and Maintenance Technical Support, July - September 2000 Building 1599, FTD, NY	EA	NOV-2000
FTD -30-1395, Quarterly Report of System Operation - Area 1395 and 1495 Systems Gasoline Alley, FTD, NY	EA	NOV-2000
FTD -30-1495, Quarterly Report of System Operation - Area 1395 and 1495 Systems Gasoline Alley, FTD, NY	EA	NOV-2000
FTD -30-3805, Quarterly Report of Progress - Area 3805 Pilot Treatment System Study, Gasoline Alley, FTD, NY (Jul-Sept)	EA	NOV-2000
FTD -91, Groundwater Sampling results, Sept. 2000 Sampling Event, AAFES Station, FTD, NY	EA	DEC-2000
FTD -30-1295, Final Work Plan Remedial Pilot Study Areas 1295, 1395, and 1495 Gasoline Alley, FTD, NY	EA	DEC-2000
FTD -30-1395, Final Work Plan Remedial Pilot Study Areas 1295, 1395, and 1495 Gasoline Alley, FTD, NY	EA	DEC-2000
FTD -30-1495, Final Work Plan Remedial Pilot Study Areas 1295, 1395, and 1495 Gasoline Alley, FTD, NY	EA	DEC-2000
FTD -30-1595, Final Area 1595 Groundwater Pilot Study Report Gasoline Alley FTD, NY	EA	DEC-2000
FTD -91, Final Work Plan Aquifer Air Sparging/Dual-Phase Extraction Pilot Study AAFES Station Building P-2140, FTD, NY	EA	DEC-2000

2001

FTD -30-1595, Groundwater Model Enhancement Report Area 1595 Fort Drum, New York	MP	JAN-2001
FTD -91, Quarterly Report of Progress - Building P-2140 Interim Treatment System Pilot Study, FTD, NY	EA	JAN-2001
Quarterly IRP Meeting Minutes for Fort Drum, 1/10/01 and 1/11/01	MP	MAR-2001
FTD -30-3805, Quarterly Report of Progress, Area 3805 Pilot Treatment System Study, Jan-Mar 2001, FTD, NY	EA	APR-2001
FTD -8, Airfield Sanitary Landfill, Fort Drum, NY, Fnal Report for Annual Groundwater Sampling Performed 8/8/00 and 8/9/00	MP	APR-2001
FTD -91, Quarterly Report of Progress - Building P-2140 Interim Treatment System Pilot Study, FTD, NY	EA	APR-2001
FTD -30-1595, Summary of Operation and Maintenance Technical Support, Jan - Mar 2001 Building 1599, FTD, NY	EA	APR-2001
FTD -30-1395, Quarterly Report of System Operation-Bioventing & AAS, Areas 1395 & 1495 (Jan-Mar 2001), FTD, NY	EA	APR-2001
FTD -30-1495, Quarterly Report of System Operation-Bioventing & AAS, Areas 1395 & 1495 (Jan-Mar 2001), FTD, NY	EA	APR-2001
FTD -89, Final Remedial Investigation Data Gap Study, Former Building T-1245, FTD, NY	EA	APR-2001
FTD -91, Groundwater Sampling Results, March 2001 Sampling Event, AAFES Station, FTD, NY	EA	MAY-2001
FTD -30-1795, Quarterly Report of Progress Area 1795 Bioslurping Pilot Study, Gasoline Alley, FTD,	EA	MAY-2001



## IRP Previous Studies

2001

Title	Author	Date
NY(1Jan-31Mar 01)		
FTD -91, Quarterly Report of Progress, Bldg P-2140 AAFES Gas Station, FTD, NY (1 Jan - 31 Mar 01)	EA	MAY-2001
FTD -30, Gasoline Alley Groundwater Monitoring Program Work Plan, FTD, NY	MP	MAY-2001
FTD -30, Final Source Area Remedial Investigation/Datagap Study Report, Areas 1595,1795,1895,1995,3805, FTD, NY	EA	MAY-2001
FTD -30, Gasoline Alley Groundwater Monitoring Program, FTD, NY April 2001 Well/Piezometer Gauging Results (1 disk)	MP	MAY-2001
Quality Assurance Program Plan	MP	MAY-2001
FTD -30-3805, Quarterly Report of Progress, Area 3805 Pilot Treatment System Study, April-June 2001, FTD, NY	EA	JUL-2001
FTD -30-1595, Summary of Operations and Maintenance Technical Support, April-June 2001, Bldg 1599, FTD, NY	EA	JUL-2001
FTD -91, Groundwater Sampling Results, June 2001 Sampling Event, AAFES Service Station, FTD, NY	EA	JUL-2001
FTD -30-1795, Quarterly Report of Progress - Area 1795 Bioslurping Pilot Study, April - June 2001, Gasoline Alley, FTD, NY	EA	JUL-2001
FTD -7, Response to Comments on Draft Work Plan for DGS to Support CMS Gas Alley Areas 1895/1995/3805 and OSL, FTD	MP	JUL-2001
FTD -30-3805, Response to Comments on Draft Work Plan for DGS to Support CMS Gas Alley Areas 1895/1995/3805 and OSL, FTD	MP	JUL-2001
FTD -30-1395, Quarterly Report of System Operation - Bioventing and AAS Systems, Areas 1395 and 1495, Gas Alley, FTD, NY	EA	AUG-2001
FTD -30-1495, Quarterly Report of System Operation - Bioventing and AAS Systems, Areas 1395 and 1495, Gas Alley, FTD, NY	EA	AUG-2001
ArcView Project Update (update to IRP sampling database; CD)	EA	AUG-2001
FTD -7, Final Work Plan Data Gap Study to Support Corrective Measures Study, Gasoline Alley and Old Sanitary Landfill	MP	SEP-2001
FTD -30-3805, Final Work Plan Data Gap Study to Support Corrective Measures Study, Gasoline Alley and Old Sanitary Landfill	MP	SEP-2001
FTD -7, Summary of Surface Water and Sediment Sampling Results (July 1999 - December 2000), OSL, 1595, 1795, FD, NY	MP	SEP-2001
FTD -30-1595, Summary of Surface Water and Sediment Sampling Results (July 1999 - December 2000), OSL, 1595, 1795, FD, NY	MP	SEP-2001
FTD -30-1795, Summary of Surface Water and Sediment Sampling Results (July 1999 - December 2000), OSL, 1595, 1795, FD, NY	MP	SEP-2001
FTD - 91, Full-Scale Dual-Phase Extraction Pilot Study Work Plan, AAFES Station, FD, NY	EA	SEP-2001

## IRP Previous Studies

2001

Title	Author	Date
FTD -91, Safety, Health, and Emergency Response Plan for the Full-Scale Dual-Phase Extraction Pilot Study AAFES Station	EA	SEP-2001
FTD -91, Quarterly Report of Progress - Building P-2140 Interim Treatment System Pilot Study, FTD, NY	EA	OCT-2001
FTD -30-3805, Response to Comments for the Draft Source Area/LNAPL Focused Technical Selection Report, Gas Alley, Area 3805, FD,NY	MP	OCT-2001
FTD -91, Groundwater Sampling Results, Sept. 2001 Sampling Event, AAFES Station, FTD, NY	EA	OCT-2001
FTD -91, Quarterly Report of AAS System Operation - AAFES Station, FTD, NY,	EA	OCT-2001
FTD -30-1395, Quarterly Report of System Operation - Bioventing and AAS Systems, Areas 1395 and 1495, Gas Alley, FTD, NY	EA	NOV-2001
FTD -30-1495, Quarterly Report of System Operation - Bioventing and AAS Systems, Areas 1395 and 1495, Gas Alley, FTD, NY	EA	NOV-2001
FTD -30-3805, Quarterly Report of Progress, Area 3805 Pilot Treatment System Study, July-Sept. 2001, Gasoline Alley, FTD, NY	EA	NOV-2001
FTD -30-1795, Quarterly Report of Progress - Area 1795 Bioslurping Pilot Study, Gasoline Alley. FTD, NY (Jul - Sept 01)	EA	NOV-2001
FTD -30-1595, Summary of Operation and Maintenance Technical Support, July- Sept 2001 Building 1599, FTD, NY	EA	NOV-2001
FTD -91, Final Aquifer Air Sparging Installation and Startup Report AAFES Station, FTD, NY	EA	NOV-2001
FTD -30-3805, Final Source Area /LNAPL Focused Technical Selection Report Gasoline Alley Areas 1895, 1995, and 3805, FTD, NY	MP	NOV-2001
FTD -30-3805, Final Source Area /LNAPL Focused Technical Selection Report Gas Alley Areas 1895, 1995, 3805, FTD, NY (CD)	MP	NOV-2001
FTD -7, Quarterly Report for Phytoremediation Pilot Study at the Old Sanitary Landfill, FTD, NY	MP	NOV-2001
FTD -91, Final AAS 6-Month Operation Summary Report AAFES Station, FTD, NY	EA	DEC-2001
FTD -30-1295, Final Remedial Pilot Study Implementation Report Area 1295, Gasoline Alley, FTD, NY	EA	DEC-2001
FTD -91, Final Dual-Phase Extraction Pilot Test Summary Report and Conceptual Design AAFES Station P-2140, FTD, NY	EA	DEC-2001
FTD -30-1395, Final Aquifer Air Sparging Pilot Study Implementation Report Area 1395 and 1495, Gasoline Alley, FTD, NY	EA	DEC-2001
FTD -30-1495, Final Aquifer Air Sparging Pilot Study Implementation Report Area 1395 and 1495, Gasoline Alley, FTD, NY	EA	DEC-2001
FTD -91, Groundwater Sampling Results, December 2001 Sampling Event, AAFES Station, FTD, NY	EA	JAN-2002

2002

## IRP Previous Studies

2002

Title	Author	Date
FTD -30-1395, Quarterly Report of System Operation - Bioventing and AAS Systems, Areas 1395 and 1495 Gas Alley	EA	JAN-2002
FTD -30-1495, Quarterly Report of System Operation - Bioventing and AAS Systems, Areas 1395 and 1495 Gas Alley	EA	JAN-2002
FTD -7, Quarterly Report for Oct - Dec 2001 Phytoremediation Pilot Study at OSL, FTD, NY	MP	JAN-2002
FTD -30-1795, Quarterly Report of Progress - Area 1795 Bioslurping Pilot Study, Gasoline Alley, FTD, NY	EA	JAN-2002
FTD -91, Quarterly Report of AAS System Operation - AAFES Station, FTD, NY (October 1 - December 31, 2001)	EA	FEB-2002
FTD -30-3805, Quarterly Report of Progress, Area 3805 Pilot Treatment System Study, Oct - Dec 2001, Gas Alley, FTD	EA	FEB-2002
FTD -30-1295, Oxygen Releasing Compound Pilot Study Summary Report, Area 1295, Gasoline Alley, FTD, NY	EA	MAR-2002
FTD -20-1395, Aquifer Air Sparging Pilot Study One-Year Summary Letter Report, Area 1395, Gasoline Alley, FTD, NY	EA	MAR-2002
FTD -20-1495, Aquifer Air Sparging Pilot Study One-Year Summary Letter Report, Area 1495, Gasoline Alley, FTD, NY	EA	MAR-2002
FTD -30-3805, Final Work Plan Source Area Remedial Design Gasoline Alley Areas 3805 & 1995, FTD, NY	MP	APR-2002
FTD -30-3805, Final Work Plan Source Area Remedial Design Gasoline Alley Areas 3805 & 1995, FTD, NY	MP	APR-2002
FTD -30, April 2002 Well Gauging for Gasoline Alley, FTD, NY	MP	MAY-2002
FTD -30-3805, Final Cost Estimate Source Area Remedial System Gasoline Alley Areas 3805 & 1995, FTD, NY	MP	JUN-2002
FTD -30, Final October 2001 Groundwater Monitoring Gasoline Alley & Surface Water & Sediment Areas 1595, 1795, OSL	MP	JUL-2002
FTD -91, Quarterly Report of Progress, O&M, Areas 1395, 1495, 1595, 1795, 3805, and AAFES Station, FTD, NY	EA	JUL-2002
FTD -30-1395, Quarterly Report of Progress, O&M, Areas 1395, 1495, 1595, 1795, 3805, and AAFES Station, FTD, NY	EA	JUL-2002
FTD -30-1495, Quarterly Report of Progress, O&M, Areas 1395, 1495, 1595, 1795, 3805, and AAFES Station, FTD, NY	EA	JUL-2002
FTD -30-1595, Quarterly Report of Progress, O&M, Areas 1395, 1495, 1595, 1795, 3805, and AAFES Station, FTD, NY	EA	JUL-2002
FTD -30-1795, Quarterly Report of Progress, O&M, Areas 1395, 1495, 1595, 1795, 3805, and AAFES Station, FTD, NY	EA	JUL-2002
FTD -30-3805, Quarterly Report of Progress, O&M, Areas 1395, 1495, 1595, 1795, 3805, and AAFES Station, FTD, NY	EA	JUL-2002

## IRP Previous Studies

2002

Title	Author	Date
FTD -8, Airfield Sanitary Landfill, FTD, NY Final Report for Annual Groundwater Sampling Performed 10/3-10/4/01 (w disk)	MP	JUL-2002
FTD -7, Final Data Gap Study Report to Support CMS Gasoline Alley and OSL, FTD, NY (includes CD)	MP	JUL-2002
FTD -30-3805, Final Data Gap Study Report to Support CMS Gasoline Alley and OSL, FTD, NY (includes CD)	MP	JUL-2002
Final Risk Assessment, FTD, NY (Eight sites; Ranges 17& 35, T-91, T-1245, P-2140, T-4006, ASL, Nr. R17)	MP	SEP-2002
Quarterly Report of Progress (Jun - Aug 2002), O&M, Areas 1395, 1495, 1595, 1795, 3805, AAFES	EA	OCT-2002
FTD -22, EOD Burn Sites, Ranges 17 and 35 Subpart X Permit Withdrawal Request,	MP	NOV-2002
FTD -22, EOD Burn Sites, Ranges 17 and 35 Subpart X Permit Withdrawal Request,	MP	NOV-2002

2003

FTD -91, Quarterly Report of Progress, (Sep-Nov 02) O&M, Areas 1395, 1495, 1595, 1795, 3805, and AAFES Station, FTD, NY	EA	JAN-2003
FTD -30-1395, Quarterly Report of Progress, (Sep-Nov 02) O&M, Areas 1395, 1495, 1595, 1795, 3805, and AAFES Station, FTD, NY	EA	JAN-2003
FTD -30-1495, Quarterly Report of Progress, (Sep-Nov 02) O&M, Areas 1395, 1495, 1595, 1795, 3805, and AAFES Station, FTD, NY	EA	JAN-2003
FTD -30-3805, Quarterly Report of Progress, (Sep-Nov 02) O&M, Areas 1395, 1495, 1595, 1795, 3805, and AAFES Station, FTD, N	EA	JAN-2003
FTD -30-1595, Quarterly Report of Progress, (Sep-Nov 02) O&M, Areas 1395, 1495, 1595, 1795, 3805, and AAFES Station, FTD, NY	EA	JAN-2003
FTD -30-1795, Quarterly Report of Progress, (Sep-Nov 02) O&M, Areas 1395, 1495, 1595, 1795, 3805, and AAFES Station, FTD, NY	EA	JAN-2003
FTD -7, Quarterly Report for Oct - Dec 2002 Phytoremediation Pilot Study at the OSL, FTD, NY	MP	MAR-2003
FTD -30-3805, Storm water Pollution Prevention Plan Areas 1895, 1995, and 3805, FTD, NY	EA	APR-2003
FTD -30-3805, Environmental Protection Plan for Source Area Remediation Gasoline Alley Areas 3805 and 1995, FTD, NY	CAPE	APR-2003
2002 Basewide Groundwater, Surface Water, and Sediment Monitoring Gasoline Alley, FTD, NY (Volumes I, & II)	MP	APR-2003
Quarterly Report of Progress (Dec. 2002 - Feb. 2003) O&M, Areas 1395, 1495, 1595, 1795, 3805, AAFES	EA	APR-2003
FTD -7, Quarterly Report for Jan - Mar 2003 Phytoremediation Pilot Study at the OSL, FTD, NY	MP	MAY-2003
Airfield Sanitary Landfill (ASL) Test Pit Investigation Letter Report of Findings (to identify northern edge of cap)	MP	JUN-2003
FTD -91, Final Corrective Measures Study Army Air Force Exchange Service Station Fort Drum, New York	EA	JUN-2003

## IRP Previous Studies

2003

Title	Author	Date
Quarterly Report of Progress (Mar - May 2003) O&M Areas 1395, 1495, 1595, 1795, 3805 and AAFES	EA	JUL-2003
FTD -30-3805, Final Work Plan for Source Area Remediation Gasoline Alley, Areas 3805 and 1995 at FTD, NY	CAPE	JUL-2003
FTD -30-1595, Final Corrective Measures Study Area 1595 Gasoline Alley, FTD, NY	EA	JUL-2003
FTD -91, Final Operations and Maintenance Manual Full-Scale Dual-Phase Extraction Pilot Study AAFES Station, FTD (w Appendix)	EA	AUG-2003
FTD -91, Final Installation and Startup Report for Full-Scale Dual-Phase Extraction Pilot System AAFES, FTD, NY	EA	AUG-2003
FTD -7, Quarterly Report for April - June 2003 Phytoremediation Pilot Study at the OSL, FTD, NY Data Gap Study	MP	AUG-2003
Quarterly Report of Progress (Jun - Aug 2003), O&M, Areas 1395, 1495, 1595, 1795, 3805, AAFES	EA	SEP-2003
Final 2002 Basewide Groundwater, Surface Water, and Sediment Monitoring Report (Replacement Pages, disk)	MP	NOV-2003

2004

Final Risk Assessments Fort Drum, NY (CD) (all risk assessed sites except NJANG and T-4002)	MP	JAN-2004
Quarterly Report of Progress (Sep - Nov 2003), O&M, Areas 1395, 1495, 1595, 1795, 3805, AAFES	EA	JAN-2004
FTD -30-1395, Post-Termination Monitoring Program Bioventing/AAS Treatment Systems Areas 1395/1495, FTD, NY	MP	FEB-2004
FTD -30-1495, Post-Termination Monitoring Program Bioventing/AAS Treatment Systems Areas 1395/1495, FTD, NY	MPF	FEB-2004
FTD -30-3805, As-Built Construction Drawings Source Area Remedial Systems, Gasoline Alley Areas 3805 and 1995 (CD included)	CAPE	FEB-2004
FTD -30-1595, Final Chemical Oxidation Pilot Study Report Gasoline Alley Area 1595, FTD, NY	MP	APR-2004
Quarterly Report of Progress (Dec. 2003 - Feb. 2004) O&M Areas 1395, 1495, 1595, 1795, 3805, AAFES	EA	APR-2004
FTD -72, Final Addendum for NJANG Pond and T-4002 to the Final Risk Assessment (4 reports + 1 CD)	MP	APR-2004
FTD -76, Final Addendum for NJANG Pond and T-4002 to the Final Risk Assessment (4 reports + 1 CD)	MP	APR-2004
FTD-30-3805, Well Development Logs for Source Remediation Areas 3805/1995, FTD, NY + various submittals	CAPE	APR-2004
2003 Basewide Groundwater and Surface Water Monitoring Report, FTD, NY (Volumes I & II)	MP	MAY-2004
FTD -30-1795, Final Corrective Measures Study Area 1795 Gasoline Alley, FTD, NY	EA	JUN-2004
Quarterly Report of Progress (Mar - May 2004) O&M Areas 1395, 1495 1595, 1795 and AAFES, FTD, NY	EA	JUN-2004
FTD -30-3805, Final O&M Report for Source Area Remediation Gas Alley Area 3805 & 1995, FTD (Jan - Mar 2004)	CAPE	AUG-2004

## IRP Previous Studies

2004

Title	Author	Date
FTD -7, Semiannual Progress Report Phytoremediation Pilot Study (Jan - Jun 2004)	MP	AUG-2004
FTD -30-3805, Safety, Health, Emergency Response Plan Addendum for MPE/AAS System Operation Areas 3805/1995	CAPE	AUG-2004
FTD -30-3805, O&M Manual for MPE System Fort Drum Area 3805-C, FTD, NY (CD included)	CAPE	AUG-2004
FTD -30-3805, O&M Manual for MPE System Fort Drum Area 3805-A & B, FTD, NY (CD included)	CAPE	AUG-2004
FTD -30-3805, Final O&M Report (Apr - Jun 2004) Multi-Phase Extraction and AAS Systems Areas 3805 and 1995, FTD	CAPE	AUG-2004
Quarterly Report of Progress (June - Aug 2004) O&M Areas 1395, 1495, 1595, 1795, and AAFES, FTD, NY	EA	SEP-2004
FTD -30-3805, Final As-Built Drawings for Source Area Remedial System Gasoline Alley Areas 3805 and 1995, FTD, NY	CAPE	SEP-2004
FTD -30-3805, O&M Manual for CAPE Environmental, FTD, NY (Global Technologies; Catalytic Oxidizer Unit)	CAPE	SEP-2004
FTD -30-3805, Final O&M Report (Jul - Sept 2004) Multi-Phase Extraction and AAS Systems Areas 3805 and 1995, FTD	CAPE	OCT-2004
Final Groundwater Seep Sampling Monitoring Report Old Sanitary Landfill	MP	NOV-2004
Fort Drum 2003 Basewide Groundwater and Surface Water Monitoring report & disk (new cover for draft only)	MP	NOV-2004
Quarterly Report of Progress (Sep - Nov 2004) O&M Areas 1395, 1495, 1595, 1795, and AAFES Station	EA	DEC-2004

2005

FTD -30-3805, O&M Manual for MPE System Fort Drum Area 1995, FTD, NY (System D); disk included	CAPE	JAN-2005
FTD -7, Statistical Analysis to Support the CMS: Gasoline Alley Areas 1895, 1995, & 3805 and OSL	CAPE	FEB-2005
FTD -30-3805, Statistical Analysis to Support the CMS: Gasoline Alley Areas 1895, 1995, & 3805 and OSL	CAPE	FEB-2005
FTD -7, Semiannual Progress Report Phytoremediation Pilot Study (Jul - Dec 2004)	MP	MAR-2005
FTD -112, Investigation and Closure Report Training Site POL Contamination Near Range 17, FTD, NY	MP	MAR-2005
FTD -30-3805, O&M Report (Jan-Feb 2005) MPE and AAS Systems Areas 3805 and 1995, FTD, NY	CAPE	MAR-2005
FTD -30-1595, Storm water Pollution Prevention Plan Area 1595, Gasoline Alley, FTD, NY	CAPE	APR-2005
Quarterly Report of Progress (Dec-Feb 2005) O&M Areas 1395, 1495, 1595, 1795, and AAFES, FTD, NY	EA	APR-2005
FTD -30-1595, Final Conceptual Design Plan Area 1595, Gasoline Alley, FTD, NY	CAPE	APR-2005
2004 Basewide Groundwater and Surface Water Monitoring, FTD, NY + CD	MP	MAY-2005
FTD-30-1595, Final Site Safety and Health Plan for Remedial Design & Remedial Action Gasoline Alley, Area 1595	CAPE	JUL-2005
FTD-30-1595, Final Work Plan for Remedial Design and Remedial Action Gasoline Alley Area 1595, FTD,	CAPE	JUL-2005

## IRP Previous Studies

2005

Title	Author	Date
NY		
FTD-30-1595, Final Contractor Quality Control Plan for Remedial Design & Remedial Action Gasoline Alley, Area 1595	CAPE	JUL-2005
FTD-7, Semiannual Progress Report Phytoremediation Pilot Study (Jan - Jun 2005)	MP	AUG-2005
FTD -30-3805, O&M Manual for CAPE Environmental (Global Tech; Catalytic Oxidizer Unit; System D) - Area 1995 - disk	CAPE	SEP-2005
FTD-91, Work Plan for Dual-Phase Extraction System Enhancements AAFES Station, FTD, NY + CD	EA	DEC-2005
FTD-89, Final Focused Technical Selection Area 1245 FTD, NY	MP	DEC-2005
FTD-30-3805, Final Corrective Measures Study Gasoline Alley Areas 1895, 1995, & 3805, and Old Sanitary Landfill, FTD	MP	DEC-2005

2006

FTD-30-1595, Well Drilling & Development Logs for Remedial Action & Remedial Design Area 1595, FTD, NY	CAPE	JAN-2006
FTD-30-1595, Operations and Maintenance Manual for SVE & AAS Systems Fort Drum Area 1595, FTD, NY	CAPE	FEB-2006
2005 Basewide Groundwater and Surface Water Monitoring, FTD, NY + CD	MP	FEB-2006
FTD-30-1595, Final As-Built Drawings for Remedial Action and Remedial Design Gasoline Alley Area 1595, FTD, NY + CD	CAPE	FEB-2006
FTD-30-1595, Startup and First Quarterly O&M Report (Dec 2005 - Mar 2006) SVE and AAS Systems Area 1595, FTD + CD	CAPE	MAR-2006
FTD-7, Semiannual Progress Report Phytoremediation Pilot Study (Jul - Dec 2005) Old Sanitary Landfill, FTD, NY	MP	MAR-2006
Quarterly Reports of Progress (Mar 2005 - Feb 2006) O&M Areas 1395, 1495, 1595, 1795, 3805 and AAFES	EA	MAR-2006
Quarterly Reports of Progress (Mar 2005 - Feb 2006) O&M Areas 1395, 1495, 1595, 1795, 3805 and AAFES	EA	MAR-2006
FTD-30-1795, Final Work Plan for Conceptual Remedial Design Area 1795, Gasoline Alley, FTD, NY + CD	EA	MAR-2006
FTD-30-1295, Data Report Area 1295 Direct-push Sampling (October 21, 2005) + CD	MP	APR-2006
FTD-30-1295, Final Focused Technical Selection Area 1295 FTD, NY + CD	MP	APR-2006
Final Community Relations Plan for the Fort Drum Installation Restoration Program, FTD, NY+ 2 CDs	EA	APR-2006
FTD-030D, Second Quarterly O&M Report (Apr - Jun 2006) SVE and AAS Systems Area 1595, FTD, NY (CD)	CAPE	JUL-2006
FTD-007, Semiannual Progress Report for the Phytoremediation Pilot Study (Jan-Jun 2006) Old Sanitary Landfill	MP	AUG-2006
FTD-030A, Final In situ Chemical Oxidation Pilot Study Work Plan Gasoline Alley Area 1295 FTD, NY	MP	OCT-2006

## IRP Previous Studies

2007

Title	Author	Date
FTD-007, Final Phytoremediation Pilot Study Work Plan Old Sanitary Landfill, FTD, NY (CD)	MP	JAN-2007
2006 Basewide Groundwater and Surface Water Monitoring, FTD, NY (CD)	MP	FEB-2007
FTD-007, Final Conceptual Design Work Plan Old Sanitary Landfill Cap Improvements, FTD, NY (CD)	MP	FEB-2007
FTD-007, Semiannual Progress Report for the Phytoremediation Pilot Study (Jul-Dec 2006) Old Sanitary Landfill (CD)	MP	MAR-2007
FTD-030E - Final Accident Prevention Plan Source Area Remediation Project Plans for SVE, AAS, WWII Area 1795	Cape	APR-2007
FTD-030E - Final Stormwater Pollution Prevention Plan for Source Area Remediation Gasoline Alley Area 1795	Cape	APR-2007
Quarterly Reports of Progress (Mar 2006 - Feb 2007) O&M Areas 1395, 1495, 1595, 1795, 3805 and AAFES	EA	APR-2007
FTD-030E - Pre-Design Investigation Work Plan for WWII Landfill Gasoline Alley Area 1795	Cape	JUN-2007
FTD-030F - Final Addendum Source Area Remediation Gasoline Alley Area 3805C	Cape	AUG-2007
FTD-030E - Final Work Plan Source Area Remediation SVE, AAS and WWII Landfill Limited Excavation Area 1795	Cape	AUG-2007
FTD-007 - Semiannual Progress Report for Phytoremediation Pilot Study (Jan - June 2007) Old Sanitary Landfill	Malcolm Pirnie	SEP-2007
Installation Restoration Program Basewide Monitoring Work Plan	Malcolm Pirnie	OCT-2007
FTD-030D - Draft Conceptual Work Plan for Area 1595 Creek Conceptual Remedial Design& Remedial Action, 1595	Cape	NOV-2007

2008

FTD-030F - As-Built Construction Drawings for Source Area Remediation Gasoline Alley Area 3805C Well Line Extension	Cape	JAN-2008
FTD-088 and FTD-076 - Areas T-4002 and T-4006 Site Closure Report	Malcolm Pirnie	JAN-2008
FTD-030A - Draft In situ Chemical Oxidation Pilot Study Report Gasoline Alley Area 1295	Malcolm Pirnie	FEB-2008
2007 Basewide Groundwater and Surface Water Monitoring	Malcolm Pirnie	FEB-2008
FTD-007 - Phytoremediation Pilot Study 2007 Annual Progress Report Old Sanitary Landfill	Malcolm Pirnie	MAY-2008
FTD-007 - Final Work Plan for Old Sanitary Landfill Cap Improvements, Cell 2	Plexus	MAY-2008
Quarterly Report of Progress (Mar 2007 Apr 2008) O&M Areas 1395, 1495, 1595, 1795, 3805 and AAFES	EA	JUN-2008
FTD-076 and FTD-088 - Areas T-4002 and T-4006 Site Closure Report	Malcolm Pirnie	JUL-2008
FTD-030A - Final In situ Chemical Oxidation Pilot Study Report Gasoline Alley Area 1295	Malcolm Pirnie	AUG-2008
FTD-030E - Startup and First Quarterly O&M Report (Dec 2007 - Mar 2008) SVE and AAS Systems Area 1795	Cape	AUG-2008



## IRP Previous Studies

2008	Title	Author	Date
	FTD-030E - Second Quarterly O&M Report (Apr - Jun 2008) SVE and AAS Systems Area 1795	Cape	SEP-2008
	FTD-030E Construction Drawings MPE/SVE/AAS Remedial System Area 1795, Gasoline Alley	Cape	SEP-2008
	Quarterly Report of Progress (May-Jun 2008) O&M Areas 1395, 1494, 1595, 1795, 3805, and AAFES	Plexus	SEP-2008
	Fall 2008 Base-wide Monitoring Work Plan Addendum Gasoline alley and AAFES Station Bldg 2140	Plexus	OCT-2008
2009			
	2008 Annual Basewide Groundwater and Surface Water Monitoring Report	Plexus	JAN-2009
	FTD-030A - Final Membrane Interface Probe Investigation Work Plan Gasoline Alley Area 1295	Plexus	MAR-2009
	FTD-030D - Final Membrane Interface Probe Investigation Work Plan Gasoline Alley Area 1595	Plexus	MAR-2009
	FTD-091 - Fort Drum AAFES Service Station Work Plan for Remedial System Modifications	Plexus	MAR-2009
	Quarterly Report of Progress (Nov-Jan 2009) O&M Areas 1395, 1495, 1595, 1795, 1995, 3805, AAFES Service Station	Plexus	MAY-2009
	Draft Remedial System Optimization Report Fort Drum Groundwater Remediation Systems	Plexus	MAY-2009
	Draft Membrane Interface Probe Investigation Report AAFES Building P-2140	Plexus	MAY-2009
	Draft Membrane Interface Probe Investigation Report Gasoline Alley Area 1595	Plexus	MAY-2009
	Draft Membrane Interface Probe Investigation Report Gasoline Alley Area 1295	Plexus	MAY-2009
	Quarterly Report of Progress (Aug-Oct 2009) O&M Areas 1395, 1495, 1595, 1795, 3805 and AAFES Service Station	Plexus	NOV-2009
2010			
	Draft Post-Closure Monitoring and Maintenance Operations Manual Old Sanitary Landfill	Plexus	JAN-2010
	Draft 2009 Annual Basewide Monitoring Report	Plexus	FEB-2010
	Draft Final Project Evaluation Report for Area 1495	Plexus	DEC-2010
	Draft Final Project Evaluation Report for Area 1395	Plexus	DEC-2010
	Draft Final Project Evaluation Report for Area 1245	Plexus	DEC-2010
	Draft Final Project Evaluation Report for Building T-91	Plexus	DEC-2010
	Revised Quarterly Report of Progress (Aug-Oct) O&M Remediation Systems Gasoline Alley and AAFES	Plexus	DEC-2010
	Quarterly Report of Progress (August - October 2010) Operations and Maintenance Remediation Systems for Gasoline Alley and Army Air Force Exchange Service Station Fort Drum, New York	Plexus	DEC-2010
2011			
	2010 Draft Annual Basewide Monitoring Report	Plexus	MAR-2011
	Draft Membrane Interface Probe Investigation Work Plan Gasoline Alley Areas 1795 and 3805	Plexus	MAR-2011

## IRP Previous Studies

2011

Title	Author	Date
Final Source Area Investigation Work Plan Addendum for the Fort Drum PCE Remedial Investigation for Solvent Contaminants	PARS Environmental	APR-2011
Draft Final Periodic Review Report for Area 1495	Plexus	JUL-2011
Draft Final Periodic Review Report for Area 1395	Plexus	JUL-2011
Draft Final Periodic Review Report for Area 1245	Plexus	JUL-2011
Draft Final Periodic Review Report for Building T-91	Plexus	JUL-2011
Draft Periodic Review Report for Area 1595	Plexus	SEP-2011
Draft Extraction Well Modification Work Plan Gasoline Alley Area3805	Plexus	OCT-2011
Draft Pilot Test Results For Nutrient Application at Building T-91 and Areas 1595, 1245, 1395 and 1495	Plexus	OCT-2011
FINAL Data Evaluation Report for the Remedial Investigation Nash Boulevard Water Tower	USACE Baltimore District	NOV-2011
Quarterly Report of Progress (August 2011 - October 2011) Operations and Maintenance Remediation Systems for Gasoline Alley and Army Air Force Exchange Service Station Fort Drum, New York	Plexus Scientific Corporation	DEC-2011

2012

Quarterly Report of Progress (November 2011 - January 2012) Operations and Maintenance Remediation Systems for Gasoline Alley and Army Air Force Exchange Service Station Fort Drum, New York	Plexus Scientific Corporation	MAR-2012
Final Report Bench Scale Testing of Remedial Alternatives, Fort Drum PCE Remedial Investigation for Solvent Contaminants, Fort Drum, New York	PARS Environmental, Inc.	MAR-2012
Area 3805 Gasoline Alley System Modification Summary, Fort Drum, New York	Plexus Scientific Corporation	JUN-2012
2011 Draft Annual Basewide Monitoring Report at Fort Drum, New York	Plexus Scientific	JUN-2012
Final Site Monitoring and Management Plan for Building T-91	Plexus Scientific Corporation	JUN-2012
Final Site Monitoring and Management Plan for Area 1245	Plexus Scientific Corporation	JUN-2012
Final Site Monitoring and Management Plan for Area 1395	Plexus Scientific Corporation	JUN-2012
Final Monitoring and Management Plan for Area 1495	Plexus Scientific Corporation	JUN-2012
Draft Remedial Investigation Report For Chlorinated Solvent Contaminants at Fort Drum, New York	PARS Environmental	JUL-2012
Quarterly Report of Progress (February 2012 - April 2012) Operations and Maintenance Remediation Systems for Gasoline Alley and Army Air Force Exchange Service Station Fort Drum, New York	Plexus Scientific	JUL-2012
Quarterly Report of Progress (May 2012 - July 2012) Operations and Maintenance Remediation Systems for Gasoline Alley and Army Air Force Exchange Service Station Fort Drum, New York	Plexus Scientific Corporation	SEP-2012
Draft Work Plan Pilot Testing of Permanganate Injection, Fort Drum PCE Remedial Investigation for Solvent Contaminants, Fort Drum, New York	PARS Environmental	SEP-2012

## IRP Previous Studies

2012	Title	Author	Date
	Draft Work Plan Limited Subsurface Investigation to Define Waste Limits/Landfill Liner Revised Conceptual Running Track - Airfield Sanitary Landfill, Fort Drum, New York	H2H Associates	OCT-2012
	Draft Bioaugmentation Pilot Study Remedial Action Work Plan Area 1795, Fort Drum, New York	Plexus Scientific Corporation	NOV-2012
	Draft Bioaugmentation Pilot Study Remedial Action Work Plan Area 1595, Fort Drum, New York	Plexus Scientific Corporation	NOV-2012
	Draft Bioaugmentation Pilot Study Remedial Action Work Plan Area 3805, Fort Drum, New York	Plexus Scientific Corporation	NOV-2012
2013	Updated Finding Limited Subsurface Investigation to Define Waste Limits/Landfill Liner Revised Conceptual Running Track - Airfield Sanitary Landfill, Fort Drum, New York Letter Report	H2H Associates	FEB-2013
	Quarterly Report of Progress (February 2013-April 2013) Operations and Maintenance Remediation Systems for Gasoline Alley and Army Air Force Exchange Service Station, Fort Drum, New York	Plexus Scientific Corporation	JUN-2013
	Draft Final Bioaugmentation Pilot Study Remedial Action Work Plan, AAFES Station Site, Building P-2140, Fort Drum, New York	Plexus Scientific Corporation	OCT-2013
	Draft Bioaugmentation Pilot Study Remedial Action Work Plan, Area 1295, Fort Drum, New York	Plexus Scientific Corporation	OCT-2013
	Quarterly Report of Progress (May 2013-July 2013) Operations and Maintenance Remediation Systems for Gasoline Alley and Army Air Force Exchange Service Station, Fort Drum, New York	Plexus Scientific Corporation	OCT-2013
	Draft Final Bioaugmentation Pilot Study Results Memorandum for Area 1595, 1795, and 3805, Fort Drum, New York	Plexus Scientific Corporation	NOV-2013
	Quarterly Report of Progress (August 2013-October 2013) Operations and Maintenance Remediation Systems for Gasoline Alley and Army Air Force Exchange Service Station, Fort Drum, New York	Plexus Scientific Corporation	DEC-2013
2014	Draft Bioaugmentation Pilot Study RAWP Addendum for Area 1295, Fort Drum, New York	Plexus Scientific Corporation	JAN-2014
	Draft 2013 Annual Basewide Monitoring Report at Fort Drum, New York	Plexus Scientific Corporation	MAR-2014
	Final Remedial Action Completion Report For Lead Contaminated Soil Removal at the Nash Boulevard Water Tower Site at Fort Drum, New York	Plexus Scientific Corporation	MAR-2014
	Progress Report (November 2013-March 2014 2013) Operations and Maintenance Remediation Systems for Gasoline Alley and Army Air Force Exchange Service Station, Fort Drum, New York	Plexus Scientific Corporation	APR-2014
	Final General Maintenance Completion Report of the Pipe Slope Drain Repair Old Sanitary Landfill, Fort Drum, NY	Plexus	AUG-2014
	Groundwater Sampling Report Gasoline Alley Area 1700	USACE	OCT-2014
	Draft 2014 Annual Basewide Monitoring Report at Fort Drum, NY	Plexus	NOV-2014

## IRP Previous Studies

	<b>Title</b>	<b>Author</b>	<b>Date</b>
<b>2014</b>	Progress Report (April-September 2014, O&M Remediation Systems for Gasoline Alley and AAFES Station, Fort Drum, NY	Plexus	DEC-2014
<b>2015</b>	Final Extended Bioaugmentation Pilot Study Completion Report at Fort Drum, NY	Plexus	JAN-2015
	Work Plan Fort Drum Installation Restoration Program & Appendix A - QUAPP	PIKA-MP	FEB-2015
	Semi-Annual Progress Report Installation Restoration Program Oct 2014 through Jun 2015	PIKA-MP	AUG-2015
	Area 1595 Remedial Construction Completion Report - 2 Vols	PIKA-MP	SEP-2015
	Area 1795 Remedial Construction Completion Report - 2 Vols	PIKA-MP	SEP-2015
	Demolition Completion Report Areas Areas 1395 and 1495 Remedial Systems	PIKA-MP	SEP-2015
<b>2016</b>	Fort Drum IRP 1795 Construction Completion Report Addendum Activation of Air Sparging Systems at Area 1795	PIKA-MP	FEB-2016
	Fort Drum Installation Restoration Program 2015 Annual Basewide Monitoring Report	PIKA-MP	FEB-2016

**FORT DRUM**  
**Installation Restoration Program**  
**Site Descriptions**

**STATUS**

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Metals, Volatiles (VOC)

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

Phases	Start	End
RFA.....	198010.....	198107
CS.....	198110.....	198509
RFI/CMS.....	198602.....	200609
DES.....	200606.....	200709
IRA.....	198506.....	199909
CMI(C).....	200703.....	200709
LTM.....	200710.....	204512

RIP Date: N/A

RC Date: 200709

**SITE DESCRIPTION**

The OSL is located along Route 26. The landfill covers about 50 acres and was operated from 1940 to 1973. It consists of two cells (which may extend to a depth of 40 feet) divided by a ravine. Debris is believed to have been dumped in low spots of the ravine area. The cells have a synthetic cap, soil, and vegetative cover. Leachate, primarily BTEX, seeps out at points along the lower portions of the side slopes into a stream leading off-post at both landfill cells. The plume reconnaissance performed at Gasoline Alley (FTD-030) indicates that area 3805 is contributing to the contamination found at the landfill. Stream monitoring results show that the contamination is primarily limited to the stream bed adjacent to the cells.

In fiscal year (FY) 96 a landfill fence was installed and the vents were upgraded. In FY97 an IRA was conducted to remove debris and drums from the site and stabilize slopes. Slope stabilization and erosion control were completed in FY99. The risk assessment was completed in FY00. In FY01, a pilot phytoremediation project was installed and was successful in addressing contaminants. The groundwater plume appears stable. Limited cap repairs were completed in FY02 and FY03. Additional seep sampling was performed in summer FY04.

A corrective measures study (CMS) which included Gasoline Alley Area 3805 was completed in FY05 and approved by the NYSDEC in April 2006.

In 2007 a full-scale phytoremediation system was installed on the northern slope of OSL Cell 2 and around the unnamed creek between Cell 1 and Cell 2 to attenuate seep contaminants, primarily from 3805 (FTD-0030F). In 2007 cap improvements to the OSL Cell 2, including additional fill, new geomembrane, cover, top soil, and establishment of a minimum four percent slope were initiated and were completed in 2008.

In 2012, erosion on the north perimeter was repaired and pipe slope drains augmented to prevent further erosion.

On Feb. 12, 2014 FTD received an Order on Consent and Administrative Action identifying the OSL ongoing measures as in situ remediation by phytoremediation of the seeps, landfill cap enhancements by maintenance, performance monitoring, and long-term operation and maintenance (Appendix B pages 51-52).

In 2015, a pipe slope drain failure was discovered and repaired.

**CLEANUP/EXIT STRATEGY**

Annual groundwater and surface water monitoring will be conducted, cap and phytoremediation system maintenance and five-year reviews.

**Site ID: FTD-008**

**Site Name: AIRFIELD SANITARY LANDFILL**

**STATUS**

**Regulatory Driver:** RCRA  
**RRSE:** MEDIUM  
Contaminants of Concern: Metals  
Media of Concern: Groundwater

<b>Phases</b>	<b>Start</b>	<b>End</b>
RFA.....	198010.....	198107
CS.....	198606.....	198707
RFI/CMS.....	198402.....	198708
DES.....	198909.....	199003
CMI(C).....	198910.....	199909
LTM.....	199910.....	204512
<b>RIP Date:</b>	N/A	
<b>RC Date:</b>	199909	

**SITE DESCRIPTION**

The Airfield Sanitary Landfill (ASL), formerly named Existing Landfill, is located near Wheeler Sack Army Airfield and covers approximately 37 acres. Reports indicate that paint wastes, pesticide containers, and POLs saturated wastes were disposed of here between 1973 and 1987. It was capped in 1988 with a polyvinylchloride cover, soil, and vegetation. The landfill is unlined.

In 1994 monitoring wells required by the NYSDEC were installed and quarterly monitoring was initiated. The four quarter monitoring program completed in 1995 indicated no significant impact to the environment.

A draft closure plan was developed in 1991 which recommended upgrading some of the gas vents, adding cover material, and improving drainage. A revised closure plan for the landfill was submitted in October 1995 and finalized in June 1997. A post closure operations and maintenance plan was finalized in September 1997. Cover improvements were completed in FY99. A trend analysis, finalized in 2001, revealed no significant problems. Cover repairs were completed in FY09.

On Feb. 12, 2014 FTD received an Order on Consent and Administrative Action identifying the ASL ongoing measures as landfill maintenance and monitoring (Appendix B pages 36-37).

In summer/fall of 2014 a running track was completed around a newly defined perimeter of the ASL.

**CLEANUP/EXIT STRATEGY**

Landfill cover inspection and maintenance will be conducted annually and groundwater monitoring will be conducted every five years.

**Site ID: FTD-028**  
**Site Name: FIRE FIGHTER TRAINING AREA**

**STATUS**

**Regulatory Driver:** RCRA  
**RRSE:** NOT EVALUATED

<b>Phases</b>	<b>Start</b>	<b>End</b>
RFA.....	198606.....	198707
CS.....	198606.....	198707
RFI/CMS.....	199001.....	201708

**RIP Date:** N/A

**RC Date:** 201708

**SITE DESCRIPTION**

The site is located south of Wheeler Sack Airfield. It consisted of a lined basin and pit that was used from 1981 to 1987.

On Feb. 12, 2014 FTD received an Order on Consent and Administrative Action referencing no further action(Appendix B page 41).

**CLEANUP/EXIT STRATEGY**

No further action.



**STATUS**

Regulatory Driver: RCRA

RRSE: MEDIUM

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	198010.....	198107
CS.....	198010.....	198107
RFI/CMS.....	199005.....	200604
DES.....	200606.....	200612
CMI(C).....	200606.....	200706
CMI(O).....	200706.....	201609
LTM.....	201610.....	202004

RIP Date: 200706

RC Date: 201610

**SITE DESCRIPTION**

Gasoline Alley, located in the cantonment area of FTD, is two miles long, and consisted of diesel, leaded, and unleaded fuel dispensing stations at nine separate areas: 1195, 1295, 1395, 1495, 1595, 1795, 1895, 1995 and 3805. Each area housed several large USTs (each typically 25,000 gallons) and associated piping. The major portion of the contamination is the result of pipes and USTs that leaked.

In 1994, 22 USTs were removed and about 6,000 cubic yards of soil were thermally treated and disposed of off-site. In 1995 all remaining components (pipelines, vaults, valve boxes and dispensing islands) associated with the 22 USTs were removed.

At Area 1295 gasoline and diesel fuel leakage has contaminated soil that is acting as a continued source for groundwater contamination. A pilot system (excavation and oxygen releasing compound [ORC]) was completed in FY00. The ORC was determined to be ineffective.

In FY06 a focused technical selection (FTS) study was completed and approved by the NYSDEC. The FTS recommended in situ chemical oxidation (ISCO) and MNA. Four rounds of ISCO injections were completed in 2006 and 2007 and were determined to be only partially effective. Further attempts at ISCO were conducted in 2009 and 2010.

On Feb. 12, 2014 FTD received an Order on Consent and Administrative Action referencing continuing investigation/operation of Interim Corrective Measures for Area 1295(Appendix B pages 43-44).

Bio remediation efforts through nutrient enhancement and injection of oxygenated water were attempted from 2011 through 2014.

In 2015, new wells were installed targeting the residual dissolved phase and air sparging begun. The air sparge system was turned off for observation of rebound in February 2016.

**CLEANUP/EXIT STRATEGY**

Optimization and site closure (including well and system removal) and groundwater monitoring will be conducted.

**STATUS**

Regulatory Driver: RCRA

RRSE: HIGH

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

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

Phases	Start	End
RFA.....	198010.....	198107
CS.....	198010.....	198107
RFI/CMS.....	199005.....	200505
DES.....	200405.....	200509
IRA.....	199310.....	199509
CMI(C).....	200506.....	200606
CMI(O).....	200606.....	201609
LTM.....	201610.....	202004

RIP Date: 200606

RC Date: 201609

**SITE DESCRIPTION**

In 1975, a hole was discovered in a large UST used to fuel Army vehicles at area 1595. The tank was subsequently replaced. Contamination was discovered in a small pond and stream downgradient reaching about 300 feet downstream.

A preliminary assessment was performed and an auto-skimmer was installed at the pond in 1990 and operated until 1994. A site inspection (SI) found free-product in wells. A free-product recovery and contaminated water treatment facility was installed in February 1992. Upgrades to the treatment facility were completed in FY95 and FY97. During FY97, contaminated soil was excavated from the pond and two weirs were constructed for flow measurements.

In FY99 additional recovery wells were installed, subsurface lines were replaced, and the treatment system was enhanced.

In FY00 the pump-and-treat system was upgraded (air stripper), a system evaluation was completed, and the groundwater model was updated. A chemical oxidation pilot study in FY02 indicated that this technology would not be effective.

In 2004 a decision document (DD) was signed.

In April 2004 the final CMS was submitted and approved by the NYSDEC. An SVE/AAS was designed and constructed in FY05 to replace the pump-and-treat system, and is currently operational.

On Feb. 12, 2014 FTD received an Order on Consent and Administrative Action referencing corrective measures for Area 1595 as in situ remediation of subsurface soils and ex situ treatment of collected soil vapor, in situ remediation of groundwater, remediation of sediments in 1595 creek, performance monitoring, and long term operation and maintenance(Appendix B pages 47-48).

Bio remediation efforts through nutrient enhancement and injection of oxygenated water were attempted from 2011 through 2014.

In 2015, air sparging and bioventing systems were started up and continue to run.

**CLEANUP/EXIT STRATEGY**

Sampling of groundwater (eight wells) in FY17-19. Closure is expected in 2019, including well abandonment, system decommissioning, and site closeout documentation.

Site Name: GASOLINE ALLEY - AREA 1795/WWII LANDFILL

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

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

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

Phases	Start	End
RFA.....	198010.....	198107
CS.....	198010.....	198107
RFI/CMS.....	199005.....	200409
DES.....	200505.....	200708
CMI(C).....	200605.....	200709
CMI(O).....	200709.....	201609
LTM.....	201610.....	202004

RIP Date: 200709

RC Date: 201609

SITE DESCRIPTION

Area 1795 was a fuel dispensing area that released POL contamination. In addition, the WWII Landfill [formerly FTD-078, environmental program requirements (EPR) FTDR-029] is a surface dump within area 1795. The landfill, which was discovered in 1989, is approximately 6.5 acres and is heavily wooded. Debris is visible on the surface. The plume reconnaissance performed on Gasoline Alley in 1994 linked the two sites together. Sampling of debris indicated limited polychlorinated biphenyl (PCB) contamination.

At area 1795, a pump-and-treat pilot system was operated from FY96 to FY98 for groundwater depression and separate phase product recovery. This system was discontinued due to limited thickness of the free-product layer. A pilot AAS was tested in FY98 and indicated that this technology would be appropriate as part of a final remedy. A pilot bioslurping system (free-product recovery enhancement) was operated from FY98 to FY00. This system was discontinued due to the high water table.

A final CMS, submitted and approved in June 2004, recommended SVE/AAS treatment systems and limited excavation of the WWII landfill. The design was funded in FY05 and construction of the remedial system was funded in FY06.

Construction of the SVE/AAS systems was completed in 2007 and the systems are currently operational.

On Feb. 12, 2014 FTD received an Order on Consent and Administrative Action referencing corrective measures for Area 1795 as in situ remediation of subsurface soils and ex situ treatment of collected soil vapor, in situ remediation of groundwater, performance monitoring, and long term operation and maintenance(Appendix B pages 48-49).

Bio remediation efforts through nutrient enhancement and injection of oxygenated water were attempted from 2011 through 2014.

In summer 2015, bioventing began and in fall 2015 additional wells were added and air sparging began.

CLEANUP/EXIT STRATEGY

Sampling of groundwater (eight wells) FY17-19. Closure is expected in 2019, including well abandonment, system decommissioning, and site closeout documentation.

Site ID: FTD-030F

Site Name: GASOLINE ALLEY - AREA 3805

**STATUS**

Regulatory Driver: RCRA

RRSE: HIGH

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

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

Phases	Start	End
RFA.....	198010.....	198107
CS.....	198010.....	198107
RFI/CMS.....	199005.....	200604
DES.....	200106.....	200609
CMI(C).....	200209.....	200709
CMI(O).....	200410.....	201609
LTM.....	201610.....	202004

RIP Date: 200709

RC Date: 201609

**SITE DESCRIPTION**

Area 3805 includes three former fuel storage and dispensing areas (1895, 1995, 3805) whose plumes have commingled. Impacted soil is approximately 850,000 cubic feet. The free-product plume is approximately 450,000 square feet. The dissolved plume extends approximately 1,100 feet and exceeds 400 feet in width. The plume extends under OSL (FTD-007) prior to discharge to the OSL creek. Since 1995, approximately 30,000 gallons of free-product have been removed. An updated groundwater model was completed in September 2000.

A combined CMS for area 3805 and OSL was funded in FY00 and an FTS for the source area was completed in 2001. A MPE system was recommended for the source area. The RD for the source area was completed in 2002 and construction of an MPE and an AAS system was completed in FY04.

In FY05 a combined CMS for areas 3805/OSL was completed and was approved by the NYSDEC in April 2006. A supplemental sparging line was completed in 2007 and is currently operational.

This site is comingled with site CCFD-030G because of a source upgradient of the former USTs. NYSDEC and FTD are managing the contaminants as two separate problems.

On Feb. 12, 2014 FTD received an Order on Consent and Administrative Action referencing corrective measures for Building P-2140 as in situ remediation of subsurface soils and ex situ treatment of collected soil vapor, in situ remediation of groundwater, removal of light non-aqueous phase liquid (LNAPL), performance monitoring, and long-term operation and maintenance (Appendix B pages 49-50).

Bioremediation efforts through nutrient enhancement and injection of oxygenated water were attempted from 2011 through 2014.

In summer 2015, air sparging, SVE, and bioventing began. A pilot study of a thermal in situ remediation system was installed.

**CLEANUP/EXIT STRATEGY**

Operation of the MPE and AAS systems will continue at the source area and bio augmentation injections are anticipated in FY16 followed by sampling of groundwater (eight wells) FY17-19. Closure is expected in 2019, including well abandonment, system decommissioning, and site closeout documentation.

Site ID: FTD-091

Site Name: BLDG P-2140 USTS

## STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Soil, Surface Water

Phases	Start	End
RFA.....	199403.....	199409
CS.....	199403.....	199409
RFI/CMS.....	199403.....	200109
IRA.....	199506.....	200112
CMI(C).....	200109.....	200112
CMI(O).....	200201.....	201609
LTM.....	201610.....	202004

RIP Date: 200201

RC Date: 201609

## SITE DESCRIPTION

Building P-2140 is an active AAFES gas station. In 1993 five fuel storage USTs were removed and three USTs were installed as replacements in a different area of the site. Contamination from prior activities was observed during excavation.

An SI completed in 1994 showed the dissolved portion of the plume migrating toward the Installation boundary. An RA for free-product recovery and groundwater treatment was initiated in FY95. Approximately 1,400 gallons of free-product have been recovered. This system has since been replaced by a dual phase extraction (DPE) system in the source area.

In FY99 and FY00 the plume was further delineated and additional wells were installed. An air sparge (with ozone) pilot system was installed in January 2001. Sampling at the boundary detected BTEX and methyl tertiary-butyl ether contamination. Currently, two air sparging lines are installed in downgradient sections of the plume to address dissolved phase contamination. The system is operating effectively.

In January 2002 the full scale DPE pilot was installed to address separate phase contamination in the source area. The CMS was completed and approved by the NYSDEC April 2004.

In FY05 an AAS with ozone was added in the source area to augment the DPE. The DPE and AAS systems are currently operational. The downgradient AAS with ozone system was shut down in March 2009 with concurrence of NYSDEC. In 2009 AAS ozone technology has been applied in the source area.

On Feb. 12, 2014 FTD received an Order on Consent and Administrative Action referencing corrective measures for Building P-2140 as in situ remediation of subsurface soils and ex situ treatment of collected soil vapor, in situ remediation of groundwater, removal of LNAPL, performance monitoring, and long term operation and maintenance (Appendix B page 49-50).

Bio remediation efforts through nutrient enhancement and injection of oxygenated water were attempted from 2011 through 2014. In 2015, wells were installed and air sparging and SVE systems started up.

## CLEANUP/EXIT STRATEGY

Bio augmentation injections are anticipated in FY16 followed by sampling of groundwater (eight wells) FY17-19. Closure is expected in 2019, including well abandonment, system decommissioning, and site closeout documentation.

**Site ID: FTD-114**

**Site Name: Leak of propylene glycol**

## STATUS

**Regulatory Driver:** CERCLA

**RRSE:** NOT EVALUATED

<b>Phases</b>	<b>Start</b>	<b>End</b>
PA.....	201501.....	201509
SI.....	201501.....	201509
RI/FS.....	201512.....	201911

**RIP Date:** N/A

**RC Date:** 201911

## SITE DESCRIPTION

The geothermal heating, ventilating, and air conditioning (HVAC) system located west of Building 775 was identified by the facility as having leaked Propylene Glycol. In the fall of 2015 a preliminary investigation was performed to determine whether the chemical had reached the groundwater and if so at what concentration. The preliminary investigation identified a concentration of propylene glycol in groundwater, immediately downgradient of the spill location, of 1,800 milligram per liter (mg/L), in exceedance of NYSDEC limit for propylene glycol in groundwater of 1 mg/L (1,000 micrograms per liter).

In the winter of 2016, three additional geothermal wells and their associated loops were also identified as having the potential for propylene glycol release. Wells at Buildings 770, 20368, & 20332 have been scheduled to be abandoned as a part of a proactive effort to ensure no further releases would occur.

## CLEANUP/EXIT STRATEGY

An RI/FS is underway.

## Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FTD-001	HAZARDOUS WASTE STORAGE BLDG T-4819	198707	Consent Order dated February 12, 2014
FTD-002	DEFOLIANT TEST SITE	198608	Consent Order dated February 12, 2014
FTD-003	SEWAGE TREATMENT PLANT	199410	Consent Order dated February 12, 2014
FTD-004	NEW WASHRACK FACILITY	198707	Consent Order dated February 12, 2014
FTD-005	GARBAGE CAN WASHOUT FACILITY	198707	Consent Order dated February 12, 2014
FTD-006	WASHRACK HOLDING PONDS	198707	Consent Order dated February 12, 2014
FTD-009	FIELD DUMPS (SWMU FTD-09,15,16,17,19)	198707	Consent Order dated February 12, 2014
FTD-010	LANDFILL (OPER 1978-80)	198707	Consent Order dated February 12, 2014
FTD-011	LANDFILL (1950 LOCATION UNKNOWN)	198707	Consent Order dated February 12, 2014
FTD-012	ABANDONED LANDFILL NEAR DEFERIET	199705	Consent Order dated February 12, 2014
FTD-013	LANDFILL NEAR CARTHAGE CITY	198707	Consent Order dated February 12, 2014
FTD-014	CLOSED LANDFILL (NEAR FTD-013)	198707	Consent Order dated February 12, 2014
FTD-020	LANDFILL NEAR SOMERVILLE	198707	Consent Order dated February 12, 2014
FTD-022	EOD DISPOSAL SITE, BURN PITS (RANGE 17)	200306	Consent Order dated February 12, 2014
FTD-024	U.S. AIR FORCE EOD SITE (RANGE 35)	200306	Consent Order dated February 12, 2014
FTD-025	OLD HOSFORD SWIMMING POOL	199509	Consent Order dated February 12, 2014
FTD-027	POL SLUDGE BURIAL PIT	198707	Consent Order dated February 12, 2014
FTD-030B	GASOLINE ALLEY - AREA 1395	201310	Consent Order dated February 12, 2014
FTD-030C	GASOLINE ALLEY - AREA 1495	201310	Consent Order dated February 12, 2014
FTD-031	BUILDING T-91	201310	Consent Order dated February 12, 2014
FTD-032	POL STORAGE UST (2) BLDG T-93	198107	Consent Order dated February 12, 2014
FTD-033	WASTE POL STORAGE UST BLDG T-198	198107	Consent Order dated February 12, 2014
FTD-072	NEW JERSEY ANG POND	200309	Consent Order dated February 12, 2014
FTD-073	NYANG MAINTENANCE SHOP	198707	Consent Order dated February 12, 2014
FTD-074	DOL BATTERY SHOP BLDG P-44	199709	Consent Order dated February 12, 2014
FTD-075	DOL MAINTENANCE SHOP	198707	Consent Order dated February 12, 2014
FTD-076	PESTICIDE/HERBICIDE STORAGE BLDG T-4002	199909	Consent Order dated February 12, 2014
FTD-077	HAZARDOUS WASTE STORAGE SITE BLDG S-2005	199310	Consent Order dated February 12, 2014
FTD-079	INFECTIOUS WASTE INCINERATOR	198707	Consent Order dated February 12, 2014
FTD-081	SPRAY BOOTH BLDG T-197	199303	Consent Order dated February 12, 2014
FTD-082	DRMO OFFICE (YARD)	198707	Consent Order dated February 12, 2014
FTD-083	PAINT DUMP	199306	Consent Order dated February 12, 2014
FTD-085	OLD POL DRYING BEDS	199705	Consent Order dated February 12, 2014
FTD-086	OLD POL STORAGE YARD	199303	Consent Order dated February 12, 2014
FTD-087	SAGE COMPLEX USTS	199707	NFA letter dated Nov 1997
FTD-088	BLDG T-4006 UST	200709	Consent Order dated February 12, 2014
FTD-089	BLDG 1245 UST	201310	Consent Order dated February 12, 2014

## Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FTD-090	BLDG T-2180 UST	199409	Consent Order dated February 12, 2014
FTD-092	BLDG T-2195 UST	199506	Consent Order dated February 12, 2014
FTD-093	SAGE COMPLEX STORM SEWER OUTFALL	199711	NFA letter dated Nov 1997
FTD-094	FORMER PESTICIDE STORAGE BLDG S2517	199707	Consent Order dated February 12, 2014
FTD-110	AIRFIELD WATER TOWER	201309	Consent Order dated February 12, 2014
FTD-111	T-2161 WATER TOWER	201308	Consent Order dated February 12, 2014
FTD-112	TRAINING SITE POL CONTAM. NEAR RANGE 17	200409	Consent Order dated February 12, 2014
FTD-113	HAZARDOUS WASTE STORAGE BLDG 11144	199612	Consent Order dated February 12, 2014
PBA@FortDrum	PBA at Fort Drum	201412	



# IRP Schedule

**Date of IRP Inception:** 198010

## **Past Phase Completion Milestones**

### **1981**

**CS** (FTD-002 - DEFOLIANT TEST SITE, FTD-003 - SEWAGE TREATMENT PLANT, FTD-030A - GASOLINE ALLEY - AREA 1295, FTD-030B - GASOLINE ALLEY - AREA 1395, FTD-030C - GASOLINE ALLEY - AREA 1495, FTD-030D - GASOLINE ALLEY - AREA 1595, FTD-030E - GASOLINE ALLEY - AREA 1795/WWII LANDFILL, FTD-030F - GASOLINE ALLEY - AREA 3805, FTD-031 - BUILDING T-91, FTD-032 - POL STORAGE UST (2) BLDG T-93, FTD-033 - WASTE POL STORAGE UST BLDG T-198)

**PA** (FTD-022 - EOD DISPOSAL SITE, BURN PITS (RANGE 17))

**RFA** (FTD-002 - DEFOLIANT TEST SITE, FTD-003 - SEWAGE TREATMENT PLANT, FTD-004 - NEW WASHRACK FACILITY, FTD-005 - GARBAGE CAN WASHOUT FACILITY, FTD-006 - WASHRACK HOLDING PONDS, FTD-007 - OLD SANITARY LANDFILL, FTD-008 - AIRFIELD SANITARY LANDFILL, FTD-009 - FIELD DUMPS (SWMU FTD-09,15,16,17,19), FTD-010 - LANDFILL (OPER 1978-80), FTD-011 - LANDFILL (1950 LOCATION UNKNOWN), FTD-013 - LANDFILL NEAR CARTHAGE CITY, FTD-014 - CLOSED LANDFILL (NEAR FTD-013), FTD-020 - LANDFILL NEAR SOMERVILLE, FTD-024 - U.S. AIR FORCE EOD SITE (RANGE 35), FTD-025 - OLD HOSFORD SWIMMING POOL, FTD-027 - POL SLUDGE BURIAL PIT, FTD-030A - GASOLINE ALLEY - AREA 1295, FTD-030B - GASOLINE ALLEY - AREA 1395, FTD-030C - GASOLINE ALLEY - AREA 1495, FTD-030D - GASOLINE ALLEY - AREA 1595, FTD-030E - GASOLINE ALLEY - AREA 1795/WWII LANDFILL, FTD-030F - GASOLINE ALLEY - AREA 3805, FTD-031 - BUILDING T-91, FTD-032 - POL STORAGE UST (2) BLDG T-93, FTD-033 - WASTE POL STORAGE UST BLDG T-198, PBA@FortDrum - PBA at Fort Drum)

### **1985**

**CS** (FTD-007 - OLD SANITARY LANDFILL)

### **1986**

**RFI/CMS** (FTD-002 - DEFOLIANT TEST SITE)

### **1987**

**CS** (FTD-001 - HAZARDOUS WASTE STORAGE BLDG T-4819, FTD-004 - NEW WASHRACK FACILITY, FTD-005 - GARBAGE CAN WASHOUT FACILITY, FTD-006 - WASHRACK HOLDING PONDS, FTD-008 - AIRFIELD SANITARY LANDFILL, FTD-009 - FIELD DUMPS (SWMU FTD-09,15,16,17,19), FTD-010 - LANDFILL (OPER 1978-80), FTD-011 - LANDFILL (1950 LOCATION UNKNOWN), FTD-013 - LANDFILL NEAR CARTHAGE CITY, FTD-014 - CLOSED LANDFILL (NEAR FTD-013), FTD-020 - LANDFILL NEAR SOMERVILLE, FTD-024 - U.S. AIR FORCE EOD SITE (RANGE 35), FTD-025 - OLD HOSFORD SWIMMING POOL, FTD-027 - POL SLUDGE BURIAL PIT, FTD-028 - FIRE FIGHTER TRAINING AREA, FTD-072 - NEW JERSEY ANG POND, FTD-073 - NYANG MAINTENANCE SHOP, FTD-075 - DOL MAINTENANCE SHOP, FTD-076 - PESTICIDE/HERBICIDE STORAGE BLDG T-4002, FTD-077 - HAZARDOUS WASTE STORAGE SITE BLDG S-2005, FTD-079 - INFECTIOUS WASTE INCINERATOR, FTD-081 - SPRAY BOOTH BLDG T-197, FTD-082 - DRMO OFFICE (YARD), FTD-083 - PAINT DUMP)

**SI** (FTD-022 - EOD DISPOSAL SITE, BURN PITS (RANGE 17))

**RFA** (FTD-001 - HAZARDOUS WASTE STORAGE BLDG T-4819, FTD-028 - FIRE FIGHTER TRAINING AREA, FTD-072 - NEW JERSEY ANG POND, FTD-073 - NYANG MAINTENANCE SHOP, FTD-074 - DOL BATTERY SHOP BLDG P-44, FTD-075 - DOL MAINTENANCE SHOP, FTD-076 - PESTICIDE/HERBICIDE STORAGE BLDG T-4002, FTD-077 - HAZARDOUS WASTE STORAGE SITE BLDG S-2005, FTD-079 - INFECTIOUS WASTE INCINERATOR, FTD-081 - SPRAY BOOTH BLDG T-197, FTD-082 - DRMO OFFICE (YARD), FTD-083 - PAINT DUMP)

**RFI/CMS** (FTD-008 - AIRFIELD SANITARY LANDFILL)

### **1990**

**DES** (FTD-008 - AIRFIELD SANITARY LANDFILL)

**RFI/CMS** (FTD-077 - HAZARDOUS WASTE STORAGE SITE BLDG S-2005)

### **1991**

**DES** (FTD-077 - HAZARDOUS WASTE STORAGE SITE BLDG S-2005)

### **1992**

**CS** (FTD-087 - SAGE COMPLEX USTS)

## IRP Schedule

RFA	(FTD-087 - SAGE COMPLEX USTS, FTD-088 - BLDG T-4006 UST)
<b>1993</b>	
RFI/CMS	(FTD-003 - SEWAGE TREATMENT PLANT, FTD-081 - SPRAY BOOTH BLDG T-197, FTD-083 - PAINT DUMP)
RFA	(FTD-086 - OLD POL STORAGE YARD)
CS	(FTD-086 - OLD POL STORAGE YARD)
<b>1994</b>	
RFA	(FTD-089 - BLDG 1245 UST, FTD-090 - BLDG T-2180 UST, FTD-091 - BLDG P-2140 USTS, FTD-093 - SAGE COMPLEX STORM SEWER OUTFALL)
RFI/CMS	(FTD-076 - PESTICIDE/HERBICIDE STORAGE BLDG T-4002)
CMI(C)	(FTD-077 - HAZARDOUS WASTE STORAGE SITE BLDG S-2005)
DES	(FTD-003 - SEWAGE TREATMENT PLANT, FTD-076 - PESTICIDE/HERBICIDE STORAGE BLDG T-4002)
CS	(FTD-074 - DOL BATTERY SHOP BLDG P-44, FTD-088 - BLDG T-4006 UST, FTD-089 - BLDG 1245 UST, FTD-090 - BLDG T-2180 UST, FTD-091 - BLDG P-2140 USTS)
<b>1995</b>	
DES	(FTD-072 - NEW JERSEY ANG POND)
RFI/CMS	(FTD-025 - OLD HOSFORD SWIMMING POOL, FTD-031 - BUILDING T-91, FTD-072 - NEW JERSEY ANG POND, FTD-087 - SAGE COMPLEX USTS, FTD-093 - SAGE COMPLEX STORM SEWER OUTFALL)
CMI(C)	(FTD-003 - SEWAGE TREATMENT PLANT)
RFA	(FTD-092 - BLDG T-2195 UST, FTD-110 - AIRFIELD WATER TOWER, FTD-111 - T-2161 WATER TOWER, FTD-113 - HAZARDOUS WASTE STORAGE BLDG 11144)
CS	(FTD-092 - BLDG T-2195 UST, FTD-093 - SAGE COMPLEX STORM SEWER OUTFALL, FTD-110 - AIRFIELD WATER TOWER, FTD-113 - HAZARDOUS WASTE STORAGE BLDG 11144)
IRA	(FTD-030D - GASOLINE ALLEY - AREA 1595)
<b>1996</b>	
RI/FS	(FTD-022 - EOD DISPOSAL SITE, BURN PITS (RANGE 17))
CMI(C)	(FTD-087 - SAGE COMPLEX USTS)
DES	(FTD-074 - DOL BATTERY SHOP BLDG P-44, FTD-087 - SAGE COMPLEX USTS, FTD-093 - SAGE COMPLEX STORM SEWER OUTFALL)
RFI/CMS	(FTD-024 - U.S. AIR FORCE EOD SITE (RANGE 35), FTD-074 - DOL BATTERY SHOP BLDG P-44)
<b>1997</b>	
CS	(FTD-012 - ABANDONED LANDFILL NEAR DEFERIET, FTD-085 - OLD POL DRYING BEDS, FTD-094 - FORMER PESTICIDE STORAGE BLDG S2517, FTD-112 - TRAINING SITE POL CONTAM. NEAR RANGE 17)
CMI(C)	(FTD-072 - NEW JERSEY ANG POND, FTD-074 - DOL BATTERY SHOP BLDG P-44, FTD-076 - PESTICIDE/HERBICIDE STORAGE BLDG T-4002, FTD-093 - SAGE COMPLEX STORM SEWER OUTFALL)
RFA	(FTD-012 - ABANDONED LANDFILL NEAR DEFERIET, FTD-085 - OLD POL DRYING BEDS, FTD-094 - FORMER PESTICIDE STORAGE BLDG S2517, FTD-112 - TRAINING SITE POL CONTAM. NEAR RANGE 17)
<b>1998</b>	
RFI/CMS	(FTD-112 - TRAINING SITE POL CONTAM. NEAR RANGE 17)
<b>1999</b>	
IRA	(FTD-007 - OLD SANITARY LANDFILL, FTD-089 - BLDG 1245 UST, FTD-112 - TRAINING SITE POL CONTAM. NEAR RANGE 17)
CMI(C)	(FTD-008 - AIRFIELD SANITARY LANDFILL)
LTM	(FTD-076 - PESTICIDE/HERBICIDE STORAGE BLDG T-4002)
<b>2001</b>	
RFI/CMS	(FTD-030B - GASOLINE ALLEY - AREA 1395, FTD-030C - GASOLINE ALLEY - AREA 1495, FTD-091 - BLDG P-2140 USTS)

# IRP Schedule

## 2002

CMI(C) (FTD-091 - BLDG P-2140 USTS)  
 IRA (FTD-091 - BLDG P-2140 USTS)

## 2003

LTM (FTD-022 - EOD DISPOSAL SITE, BURN PITS (RANGE 17), FTD-024 - U.S. AIR FORCE EOD SITE (RANGE 35), FTD-072 - NEW JERSEY ANG POND)

## 2004

RFI/CMS (FTD-030E - GASOLINE ALLEY - AREA 1795/WWII LANDFILL)  
 LTM (FTD-112 - TRAINING SITE POL CONTAM. NEAR RANGE 17)

## 2005

RFI/CMS (FTD-030D - GASOLINE ALLEY - AREA 1595, FTD-089 - BLDG 1245 UST)  
 DES (FTD-030D - GASOLINE ALLEY - AREA 1595)

## 2006

CMI(C) (FTD-030D - GASOLINE ALLEY - AREA 1595, FTD-031 - BUILDING T-91)  
 DES (FTD-030F - GASOLINE ALLEY - AREA 3805)  
 RFI/CMS (FTD-007 - OLD SANITARY LANDFILL, FTD-030A - GASOLINE ALLEY - AREA 1295, FTD-030F - GASOLINE ALLEY - AREA 3805)

## 2007

CMI(C) (FTD-007 - OLD SANITARY LANDFILL, FTD-030A - GASOLINE ALLEY - AREA 1295, FTD-030E - GASOLINE ALLEY - AREA 1795/WWII LANDFILL, FTD-030F - GASOLINE ALLEY - AREA 3805)  
 DES (FTD-007 - OLD SANITARY LANDFILL, FTD-030A - GASOLINE ALLEY - AREA 1295, FTD-030E - GASOLINE ALLEY - AREA 1795/WWII LANDFILL)  
 LTM (FTD-088 - BLDG T-4006 UST)

## 2012

CMI(C) (FTD-030B - GASOLINE ALLEY - AREA 1395, FTD-030C - GASOLINE ALLEY - AREA 1495, FTD-089 - BLDG 1245 UST)  
 CMI(O) (FTD-030B - GASOLINE ALLEY - AREA 1395, FTD-030C - GASOLINE ALLEY - AREA 1495, FTD-031 - BUILDING T-91, FTD-089 - BLDG 1245 UST)

## 2013

CS (FTD-111 - T-2161 WATER TOWER)  
 IRA (FTD-111 - T-2161 WATER TOWER)

## 2014

LTM (FTD-030B - GASOLINE ALLEY - AREA 1395, FTD-030C - GASOLINE ALLEY - AREA 1495, FTD-031 - BUILDING T-91, FTD-089 - BLDG 1245 UST)

## 2015

LTM (PBA@FortDrum - PBA at Fort Drum)  
 SI (FTD-114 - Leak of propylene glycol)  
 PA (FTD-114 - Leak of propylene glycol)

### 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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## IRP Schedule

**Final RA(C) Completion Date:** 201207

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

**Estimated Completion Date of IRP at Installation (including LTM phase):** 204512

## FORT DRUM IRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
FTD-007	OLD SANITARY LANDFILL	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
FTD-008	AIRFIELD SANITARY LANDFILL	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
FTD-028	FIRE FIGHTER TRAINING AREA	RFI/CMS						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
FTD-030A	GASOLINE ALLEY - AREA 1295	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
FTD-030D	GASOLINE ALLEY - AREA 1595	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
FTD-030E	GASOLINE ALLEY - AREA 1795/WWII LANDFILL	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
FTD-030F	GASOLINE ALLEY - AREA 3805	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
FTD-091	BLDG P-2140 USTS	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
FTD-114	Leak of propylene glycol	RI/FS						

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

## CR Summary

**Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count:** 14/12

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

2 Contaminated Ground Water  
(CCFD-030G, CCFD-114)

### Most Widespread Contaminants of Concern

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

### Media of Concern

Groundwater, Soil

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

Site ID	Site Name	Action	Remedy	FY
CCFD10168	P-10168	IRA	REMOVAL	2010
CCFD10170	P-10170	IRA	FREE PRODUCT RECOVERY	2010
CCFD10470	P-10470 East	IRA	FREE PRODUCT RECOVERY	2010
E				
CCFD10580	P-10580	IRA	REMOVAL	2010
CCFD10660	P-10660	IRA	REMOVAL	2010
CCFD10660	P-10660 East	IRA	FREE PRODUCT RECOVERY	2010
E				
CCFD10680	P10680 West	IRA	FREE PRODUCT RECOVERY	2010
W				
CCFD4475E	4475 East	IRA	FREE PRODUCT RECOVERY	2010
CCFD4482	4482	IRA	REMOVAL	2010
CCFD4485E	4485 East	IRA	FREE PRODUCT RECOVERY	2010
CCFD10470	P-10470 West	IRA	FREE PRODUCT RECOVERY	2011
W				
CCFD-030H	Gasoline Alley Area 1700	IRA	REMOVAL	2015

### Duration of CR

**Date of CR Inception:** 199110

**Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC):** 201806/201806

**Date of CR completion including Long Term Management (LTM):** 201806

## CR Contamination Assessment

### Contamination Assessment Overview

Environmental restoration activities include the 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 Compliance-related Cleanup (CC) program eligible for the DERP. Sites that are now eligible for the MMRP have been migrated from Army Environmental Database-CC (AEDB-CC) and given the naming convention of other Munitions Response (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 Compliance Restoration (CR) in AEDB-R to distinguish them from the original IR sites and IR metrics.

In 2009 a total of 11 UST sites with POL contamination were migrated from the CC program to the CR program. Of these 11 sites, 10 were determined by NYSDEC to require NFA in late-2009. One of these UST sites (CCFD10470W) was actively remediated in-house by FTD, Environmental using vacuum pumping. All 11 UST sites are now NFA by NYSDEC.

In 2010 a new site (CCFD-030G) was added to the CR program when it was determined that solvent tetrachloroethylene (PCE) contamination, previously identified in conjunction with monitoring at the FTD-030F site, was significant and likely had a different source than the contamination at FTD-030F. This site is currently in the RI phase in order to determine the nature and extent of the PCE contamination. In late 2010 a new site (CCFD-030H) with POL contamination was identified while installing light poles and was added to the CR program. An RI and excavation of soils were carried out in 2013. Groundwater testing occurred in 2014 and site closure is expected in 2015.

### Cleanup Exit Strategy

Site CCFD-030G is currently in RI to determine the nature and extent of contamination. Following the RI, an FS will be completed to determine appropriate RAs. An RI/FS was initiated at a new site (CCFD-030H) in FY11 and an IRA (soil excavation) was approved by NYSDEC in 2012. Soil excavation was completed in 2013 and groundwater sampling completed 2014. Report was sent to NYSDEC 2015.

A new site CCFD-114 Well 9 contamination has been identified. The NYSDEC requested further investigation into low levels of contamination to ascertain the source. An RI is underway.



## CR Previous Studies

2007	Title	Author	Date
	Tank Closure Summary 10168	TDK Environmental	AUG-2007
	Tank Closure Summary 10170	TDK Environmental	AUG-2007
	Tank Closure Report 10470E	TDK Environmental	AUG-2007
	Tank Closure Summary 10470W	TDK Environmental	AUG-2007
	Tank Closure Summary 10580	TDK Environmental	AUG-2007
	Tank Closure Summary 10660	TDK Environmental	AUG-2007
	Tank Closure Summary 10660E	TDK Environmental	AUG-2007
	Tank Closure Summary 10680W	TDK Environmental	AUG-2007
	Tank Closure Summary 4475E	TDK Environmental	AUG-2007
	Tank Closure Summary 4482	TDK Environmental	AUG-2007
	Tank Closure Summary 4485E	TDK Environmental	AUG-2007
	Groundwater Investigation Report 10168	TDK Environmental	AUG-2007
	Groundwater Investigation Report 10170	TDK Environmental	AUG-2007
	Groundwater Investigation Report 10470E	TDK Environmental	AUG-2007
	Groundwater Investigation Report 10470W	TDK Environmental	AUG-2007
	Groundwater Investigation Report 10580	TDK Environmental	AUG-2007
	Groundwater Investigation Report 10660	TDK Environmental	AUG-2007
	Groundwater Investigation Report 10660E	TDK Environmental	AUG-2007
	Groundwater Investigation Report 10680W	TDK Environmental	AUG-2007
	Groundwater Investigation Report 4475E	TDK Environmental	AUG-2007
	Groundwater Investigation Report 4482	TDK Environmental	AUG-2007
	Groundwater Investigation Report 4485E	TDK Environmental	AUG-2007
2009	Sample Results Spreadsheet 10168, 10170, 10470E, 10470W, 10580, 10660, 10660E, 10680W, 4475E, 4482, 4485E	GOEL Services	AUG-2009
2010	Site Background Summary for the Fort Drum PCE Remedial Investigation for Solvent Contaminants	PARS	MAR-2010
	Final Work Plan for the Fort Drum PCE Remedial	PARS Environmental	NOV-2010
2011	Final Source Area Investigation Work Plan Addendum for the Fort Drum PCE Remedial Investigation for Solvent Contaminants	PARS Environmental Inc.	APR-2011
2012			
	Final Report Bench Scale Testing of Remedial Alternatives	PARS Environmental Inc.	MAR-2012
2015			

## CR Previous Studies

2015	Title	Author	Date
	In Situ Chemical Oxidation Pilot Study and Groundwater Monitoring Work Plan - 3800 PCE site	PIKA-MP	FEB-2015
	Feasibility Study 3800 Area PCE Site, Fort Drum Installation Restoration Program, Fort Drum, New York	PIKA-MP	JUN-2015
	Field Activities Plan Well 9 Site Remedial Investigation, Fort Drum Installation Restoration Program, Fort Drum, New York	PIKA-MP	JUN-2015
	Injection Completion Report In-Situ Chemical Oxidation Pilot Study 3800 Area PCE Site	PIKA-MP	SEP-2015
	Feasibility Study 3800 Area PCE Site	PIKA-MP	SEP-2015
2016			
	Proposed Remedial Action Plan Fort Drum Waste Disposal Areas Operable Unit Number 02: 3800 PCE Site State Superfund Project Fort Drum, Jefferson County Site No.623008	NYSDEC	FEB-2016
	Record of Decision Fort Drum Waste Disposal Areas Operable Unit Number 02: 3800 PCE Site State Superfund Project Fort Drum, Jefferson County Site No.623008	NYSDEC	MAR-2016
	3800 PCE Site Operable Unit No. 2 Fort Drum, Jefferson County Proposed Remedial Action Plan (PRAP) Powerpoint Presentation	NYSDEC	MAR-2016

**FORT DRUM**  
**Compliance Restoration**  
**Site Descriptions**

Site ID: CCFD-030G

Site Name: Gasoline Alley - 1800, 1900 & 3800

## STATUS

Regulatory Driver: CERCLA

Contaminants of Concern: Semi-volatiles (SVOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	199110.....	200901
SI.....	199610.....	200910
RI/FS.....	201003.....	201806

RIP Date: N/A

RC Date: 201806

## SITE DESCRIPTION

CCFD-030G is located on and near Oneida/Ontario Avenues. There has been documented storage and use of hazardous materials, including solvents, both upgradient and crossgradient of the investigation area. An investigation of historical groundwater chemistry data associated with a BTEX plume at site FTD-030F has indicated the presence of dissolved-phase chlorinated solvents (specifically PCE) in the below the aquifer existing BTEX plume. The findings of the investigation also point to several potential upgradient sources of solvents associated with historical use and poor handling practices at buildings in the CCFD-030G area. In 2009, because the solvent contamination source is likely upgradient of the BTEX plume source and vertically separated from the BTEX plume and will require different remedial technologies, a new IRP site was established and in FY10 an SI to determine the nature and extent of the contamination was initiated and is ongoing.

The identified contaminant of concern is PCE; however, related solvents and relevant breakdown products may be present. It is suspected that releases from the site have contaminated soils and groundwater beneath the site and migrated northwesterly within FTD property. In addition, PCE contamination has been found at depth in the vicinity of the FTD-030F petroleum plume and FTD-007 OSL.

An RI funded in FY10 to determine the nature and extent of PCE contamination is ongoing. An ISCO pilot study was completed in 2013. Another round of ISCO was conducted in summer 2015 and a FS completed in the fall of 2015.

A proposed remedial action plan was completed by NYSDEC and released to the public for comment in February 2016. A public meeting took place on March 9, 2016.

A ROD was issued by NYSDEC in March 2016. The selected remedy includes ISCO as needed for hotspot treatment, institutional controls, and a site management plan.

A ROD was issued by NYSDEC in March 2016. The selected remedy includes ISCO as needed for hotspot treatment, institutional controls, and a site management plan.

A Record of Decision was issued by NYSDEC in March 2016. The selected remedy includes ISCO as needed for hotspot treatment, institutional controls, and a site management plan.

## CLEANUP/EXIT STRATEGY

ISCO 2015, FS 2015 with hot spot treatment as needed.

**Site ID: CCFD-114**  
**Site Name: Well 9 contamination**

**STATUS**

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

<b>Phases</b>	<b>Start</b>	<b>End</b>
PA.....	200904.....	201003
RI/FS.....	201004.....	201709
<b>RIP Date:</b>	N/A	
<b>RC Date:</b>	201709	

**SITE DESCRIPTION**

FTD noticed VOC contamination in samples taken from Well 9 of its potable well field. Subsequent investigation in 2011 using vertical profiling soil gas sampling and spring sampling did not find the source of the contamination.

NYSDEC requested further investigation into the source of contamination be conducted. A Field Activities Plan was completed in September 2015. Field activities consisting of installation of an additional monitoring well, a three month pumping of the well, and sampling of 7 wells were completed in February 2016.

**CLEANUP/EXIT STRATEGY**

The cleanup/exit strategy will be determined when the investigation is complete.

## Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
CCFD-030H	Gasoline Alley Area 1700	201506	
CCFD10168	P-10168	200911	NYSDEC Spill Closure Letter dated 10 November 2009
CCFD10170	P-10170	200912	NYSDEC Spill Closure Letter dated 14 December 2009
CCFD10470E	P-10470 East	200911	NYSDEC Spill Closure Letter dated 10 November 2009
CCFD10470W	P-10470 West	201106	NYSDEC Spill Report Form dated 1 February 2011
CCFD10580	P-10580	200911	NYSDEC Spill Closure Letter dated 10 November 2009
CCFD10660	P-10660	200912	NYSDEC Spill Closure Letter dated 14 December 2009
CCFD10660E	P-10660 East	200911	NYSDEC Spill Closure Letter dated 10 November 2009
CCFD10680W	P10680 West	200911	NYSDEC Spill Closure Letter dated 10 November 2009
CCFD4475E	4475 East	200911	NYSDEC Spill Closure Letter dated 10 November 2009
CCFD4482	4482	200911	NYSDEC Spill Closure Letter dated 10 November 2009
CCFD4485E	4485 East	200911	NYSDEC Spill Closure Letter dated 10 November 2009

## CR Schedule

**Date of CR Inception:** 199110

### Past Phase Completion Milestones

#### 2006

ISC (CCFD10168 - P-10168, CCFD10170 - P-10170, CCFD10470E - P-10470 East, CCFD10470W - P-10470 West, CCFD10580 - P-10580, CCFD10660 - P-10660, CCFD10660E - P-10660 East, CCFD10680W - P10680 West, CCFD4475E - 4475 East, CCFD4482 - 4482, CCFD4485E - 4485 East )

#### 2009

PA (CCFD-030G - Gasoline Alley - 1800, 1900 & 3800)

#### 2010

IRA (CCFD10168 - P-10168, CCFD10170 - P-10170, CCFD10470E - P-10470 East, CCFD10580 - P-10580, CCFD10660 - P-10660, CCFD10660E - P-10660 East, CCFD10680W - P10680 West, CCFD4475E - 4475 East, CCFD4482 - 4482, CCFD4485E - 4485 East )

PA (CCFD-030H - Gasoline Alley Area 1700, CCFD-114 - Well 9 contamination)

SI (CCFD-030G - Gasoline Alley - 1800, 1900 & 3800)

INV (CCFD10168 - P-10168, CCFD10170 - P-10170, CCFD10470E - P-10470 East, CCFD10580 - P-10580, CCFD10660 - P-10660, CCFD10660E - P-10660 East, CCFD10680W - P10680 West, CCFD4475E - 4475 East, CCFD4482 - 4482, CCFD4485E - 4485 East )

#### 2011

IRA (CCFD10470W - P-10470 West)

INV (CCFD10470W - P-10470 West)

#### 2015

SI (CCFD-030H - Gasoline Alley Area 1700)

IRA (CCFD-030H - Gasoline Alley Area 1700)

### Projected Phase Completion Milestones

See attached schedule

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

To Be Determined

### Final RA(C) Completion Date:

Schedule for Next Five-Year Review: N/A

Estimated Completion Date of CR at Installation (including LTM phase): 201806

## FORT DRUM CR Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
CCFD-030G	Gasoline Alley - 1800, 1900 & 3800	RI/FS						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
CCFD-114	Well 9 contamination	RI/FS						



## Community Involvement

**Technical Review Committee (TRC):** None

**Community Involvement Plan (Date Published):** 200604

**Restoration Advisory Board (RAB):** No

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

**Community Interest Solicited on:** 200601

### **Efforts Taken to Determine Interest**

The US Army has developed a community involvement plan for the FTD IRP (2006) to facilitate local community involvement in accordance with USEPA guidance, including the Superfund Community Involvement Handbook (USEPA 2002) and the Resource Conservation and Recovery Act (RCRA) Public Participation Manual (USEPA 1996). Interviews with local elected officials, agency personnel, and local residents were conducted to determine interest in establishing a RAB.

### **Results**

A determination was made that a RAB was not needed at this time due to a lack of community interest.

### **Follow-up Procedures**

The community relations plan recommended continued surveys of community interest in forming a RAB as long as there were sites without remedies-in-place. Two new CR sites that do not have remedies-in-place were recently added to the program. In 2014, when information about the nature and extent of contamination of these sites under investigation is available, FTD will again solicit the public's interest in forming a RAB.

### **Additional Community Involvement Information**

A community relations plan has been drafted and will be finalized and implemented in 2016.

### **Administrative Record is located at**

Environmental Division  
Public Works  
Building T-4894  
Fort Drum, NY 13602-5097  
315-772-4211

### **Information Repository is located at**

Environmental Division  
Public Works  
Building T-4838  
Fort Drum, NY 13602-5097  
315-772-4211

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

**TAPP Title:** N/A

**Potential TAPP:** N/A

