

FY2016

JOINT BASE LEWIS-MCCHORD
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), Joint Base Lewis-McChord (JBLM), the executing agencies, the regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules, and tentative budgets for all major Army installation cleanup programs.

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

Acronyms

AEDB-CC	Army Environmental Database-Compliance-related Cleanup
AEDB-R	Army Environmental Database-Restoration
AFB	Air Force Base
ALGT	American Lake Garden Tract
AOC	Area of Concern
BRAC	Base Realignment and Closure
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CAP	Cleanup Action Plan
CC	Compliance-related Cleanup
CD	Consent Decree
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
cis-DCE	cis-dichloroethene
CMI(C)	Corrective Measures Implementation (Construction)
CMI(O)	Corrective Measures Implementation (Operations)
CMS	Corrective Measures Study
CR	Compliance Restoration
CSE	Comprehensive Site Evaluation
CTC	Cost-To-Complete
CTT	Closed, Transferred or Transferring
CY	calendar year
DD	Decision Document
DERP	Defense Environmental Restoration Program
DMM	Discarded Military Munitions
DoD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
EGDY	East Gate Disposal Yard (Landfill 2)
EP	extraction procedure
ER,A	Environmental Restoration, Army
ESD	Explanation of Significant Difference
FFA	Federal Facility Agreement
FLAO	Fort Lewis Agreed Order
FRA	Final Remedial Action
FS	Feasibility Study
FTLE-	AEDB-R site naming convention for former Fort Lewis IRP sites
FUDS	Formerly Used Defense Site
FY	fiscal year
GAAF	Gray Army Air Field
HRR	Historical Records Review
HVAC	heating, ventilation, and air conditioning
IAP	Installation Action Plan
IMCOM	Installation Management Command
IR	Installation Restoration
IRA	Interim Remedial Action
IRP	Installation Restoration Program
IWTP	Industrial Wastewater Treatment Plant

Acronyms

JBLM	Joint Base Lewis-McChord
JBLM North	The former North Fort Lewis
JBLM-Main	The former Fort Lewis Main Post
JP	Jet Propellant
K	thousand
LF	Landfill
LSI	Limited Site Investigation
LTM	Long-Term Management
LUC	Land Use Control
MAMC	Madigan Army Medical Center
MC	Munitions Constituents
MCA	Military Construction, Army
McChord Field	The former McChord Air Force Base
MCL	Maximum Contaminant Level
MEC	Munitions and Explosives of Concern
MF	McChord Field
mg/kg	milligrams per kilogram
MMRP	Military Munitions Response Program
MNA	Monitored Natural Attenuation
MOA	Memorandum of Agreement
MR	Munitions Response
MRS	Munitions Response Site
MTCA	Model Toxics Control Act
N/A	Not Applicable
NFA	No Further Action
NPL	National Priorities List
O&M	Operations and Maintenance
OMA	Operations and Maintenance, Army
P&T	Pump-and-Treat
PA	Preliminary Assessment
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PCOR	preliminary close out report
POL	Petroleum, Oil, and Lubricants
RA	Remedial Action
RA(C)	Remedial Action - Construction
RA(O)	Remedial Action - Operations
RAB	Restoration Advisory Board
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RIP	Remedy-in-Place

Acronyms

ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act
SI	Site Inspection
SLA	Sea Level Aquifer
SRCPP	Solvent Refined Coal Pilot Plant
SVE	Soil Vapor Extraction
SWMU	Solid Waste Management Unit
TAPP	Technical Assistance for Public Participation
TCE	Trichloroethene
TPH	total petroleum hydrocarbons
TPH-D	Total Petroleum Hydrocarbons - Diesel Range
TPH-G	Total Petroleum Hydrocarbons - Gasoline Range
TRC	Technical Review Committee
ug/l	microgram per liter
USACE	US Army Corps of Engineers
USAEC	US Army Environmental Command
USEPA	US Environmental Protection Agency
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound
WSDOE	Washington State Department of Ecology
WSDOT	Washington State Department of Transportation
WTA	Washrack Treatment Area
WWI	World War I
WWII	World War II

Site Alias List

AEDB-R Site ID to Alias List

AEDB-R #	Alias
CC FL04	
CC FL05	
CC FL08	
CC FL10	
CC FL22	
FTLE-16	SWMU 16
FTLE-28	FTLE-28
FTLE-31	FTLE-31
FTLE-32	SWMU 56
FTLE-33	FTLE-33
FTLE-46	FTLE-46
FTLE-51	FTLE-51
FTLE-54	FTLE-54
FTLE-57	FTLE-57
FTLE-62	FTLE-62
FTLE-73	FTLE-73
FTLEW-015-R-01	
MF-ALGT-LF-05	LF005
MF-DP-60	DP060
MF-LF-004	LF004
MF-LF-006	LF006
MF-LF-007	LF007
MF-OT-039	OT039
MF-SD-054	SD054
MF-SS-34	SS034
MF-SS-34N	SS034
MF-WP-44	WP044

Installation Information

Installation Locale

Installation Size (Acreage): 90837

City: Joint Base Lewis-McChord

County: Pierce and Thurston

State: Washington

Other Locale Information

JBLM includes the former Fort Lewis and McChord Air Force Base (AFB) as of Oct. 1, 2010. The joint base was part of the 2005 Base Realignment and Closure (BRAC). The base encompasses an area of 90,837 acres within Pierce County, Washington (72,311 acres) and Thurston County, Washington (18,526 acres). Approximately 36,000 personnel work at JBLM-Lewis, and 5,000 work at JBLM-McChord Field, not including civilian and contractor employees. Significant adjacent population centers include the city of Lakewood to the north (population 58,000), unincorporated Spanaway/Parkland to the east, Olympia, Lacey, and Tumwater to the south (population 86,000), and DuPont (population 7,500) to the west.

Installation Mission

The mission of JBLM-Lewis is to provide logistical support and maneuver areas, ranges, and facilities for I Corps and JBLM-Lewis supporting units.

The mission of JBLM-McChord Field is to provide worldwide military airlift capability.

Lead Organization

IMCOM

Lead Executing Agencies for Installation

Joint Base Lewis-McChord Environmental Restoration Program (within Public Works)

Regulator Participation

Federal

US Environmental Protection Agency (USEPA), Region 10

State

Washington State Department of Ecology (WSDOE), Hazardous Waste and Toxics Reduction Program, Southwest Regional Office

National Priorities List (NPL) Status

A score of 72 was recorded on 01-JUL-87.

Date for RA(C) Completion: 201709

Date for NPL Deletion: 199609

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 Information

Installation Program Summaries

IRP

Primary Contaminants of Concern: Metals, Petroleum, Oil and Lubricants (POL), Polychlorinated Biphenyls (PCB), Volatiles (VOC)

Affected Media of Concern: Groundwater, Soil

MMRP

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

Affected Media of Concern: Soil

CR

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

Affected Media of Concern: Groundwater, Soil

5-Year / Periodic Review Summary

5-Year / Periodic Review Summary

Status	Start Date	End Date	End FY
Complete	201201	201209	2012
Complete	199509	199709	1995
Complete	200209	200209	2002
Complete	200706	200709	2007
Planned	201610	201709	2017

Last Completed 5-Year / Periodic Review Details

Associated ROD/DD Name	Sites
American Lake Garden Tract	MF-ALGT-LF-05
Battery Acid Pit DD	FTLE-16
DRMO Yard DD	FTLE-31
IWTP ESD	FTLE-51
Illicit PCB Dump Site Decision Document	FTLE-46
Landfill 1 DD	FTLE-54
Landfill 4/SRCPP ROD	FTLE-32, FTLE-57
Landfill 5 ROD	FTLE-58
Landfill 6 ESD	FTLE-59
Logistics Center DD for Drum Removal	FTLE-33
Logistics Center DD for LF2 Soil	FTLE-33
Logistics Center DD for Thermal Treatment	FTLE-33
Logistics Center ESD (1998)	FTLE-33
Logistics Center ESD (SLA P&T)	FTLE-33
Logistics Center ROD	FTLE-16, FTLE-31, FTLE-33, FTLE-51, FTLE-59, FTLE-67
PRA, SW Outfalls, and FTP DD	FTLE-10, FTLE-16, FTLE-17, FTLE-28, FTLE-46

Results Remedies at JBLM are expected to be protective in the long term. Short term protectiveness is deferred. Further evaluation of vapor intrusion pathway at the Log Center is required. The Lower Vashon plume may not be contained by the I-5 P&T system.

Actions Implement a vapor intrusion study of Logistics Center. Evaluate the performance of the I-5 system.

Plans A vapor intrusion study is underway. Results expected in 2013. Conduct a capture analysis of the I-5 system in 2013 through 2014.

Recommendations and Implementation Plans:

Recommendations in addition to those listed above:

Landfill 4: Evaluate record of decision (ROD) cleanup levels to determine if they should be lowered due to improved analytical detection limits.

American Lake Garden Tract (ALGT): Continue to evaluate alternatives to reduce source groundwater discharges and evaluate cleanup goals to ensure monitoring is addressing cleanup goals.

Land Use Control (LUC) Summary

LUC Title: AOC 8-2

Site(s): CC FL08

ROD/DD Title: Bldg 4131 Leaking Tank Site (CC FL08)

Location of LUC

Site Boundary

Land Use Restriction: Media specific restriction - Prohibit groundwater extraction that interferes with Remedial Action system

Types of Engineering Controls: None

Types of Institutional Controls: Dig Permits, Restrictions on Groundwater Withdrawal

Date in Place: 201401

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 201401

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: PETROLEUM HYDROCARBON

Additional Information

N/A

LUC Title: Battery Acid Pit LUC

Site(s): FTLE-16

ROD/DD Title: Battery Acid Pit DD

Location of LUC

Site boundary

Land Use Restriction: Media specific restriction - Prohibit, or otherwise manage excavation, Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Dig Permits, Restrictions on land use

Date in Place: 200709

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200709

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: METALS

Additional Information

LUC Title: DRMO Yard LUC

Site(s): FTLE-31

Land Use Control (LUC) Summary

ROD/DD Title: DRMO Yard DD

Location of LUC

Site boundary

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Dig Permits, Restrictions on land use

Date in Place: 200709

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200709

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: METALS, PETROLEUM HYDROCARBON

Additional Information

N/A

LUC Title: IWTP LUC

Site(s): FTLE-51

ROD/DD Title: IWTP ESD

Location of LUC

Site boundary

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Dig Permits, Restrictions on land use

Date in Place: 200709

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200809

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: METALS, PETROLEUM HYDROCARBON

Additional Information

N/A

LUC Title: Illicit PCB Dump Site LUC

Site(s): FTLE-46

ROD/DD Title: Illicit PCB Dump Site Decision Document

Location of LUC

Site boundary

Land Use Control (LUC) Summary

Land Use Restriction: Landfill restriction - Restrict access to the site, Media specific restriction - Prohibit, or otherwise manage excavation, Restrict land use - No residential use

Types of Engineering Controls: Fences, Signs

Types of Institutional Controls: Dig Permits, Restrictions on land use

Date in Place: 199909

Modification Date: 200709

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200709

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: PCBs

Additional Information

N/A

LUC Title: LAND USE CONTROL PLAN Joi

Site(s): MF-ALGT-LF-05

ROD/DD Title: American Lake Garden Tract

Location of LUC

American Lake Garden Tract OU

Land Use Restriction: Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

Types of Engineering Controls: None

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

Date in Place: 201108

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: VOC

Additional Information

N/A

LUC Title: LF2 Soil LUC

Site(s): FTLE-33

ROD/DD Title: Logistics Center DD for LF2 Soil

Location of LUC

Landfill 2 boundary.

Land Use Restriction: Landfill restriction - Restrict access to the site, Media specific restriction - Prohibit, or otherwise manage excavation, Restrict land use - No residential use

Land Use Control (LUC) Summary

Types of Engineering Controls: Fences, Signs

Types of Institutional Controls: Dig Permits, Restrictions on land use

Date in Place: 200409

Modification Date: 200709

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200709

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: METALS, PETROLEUM HYDROCARBON, VOC

Additional Information

N/A

LUC Title: Land Use Control- B-Range

Site(s): FTLEW-015-R-01

ROD/DD Title: Action Memorandum - Land Use Control -

Location of LUC

Lewis-North portion of Joint Base Lewis-McChord

Land Use Restriction: Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

Types of Engineering Controls: None

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

Date in Place: 201210

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 201210

LUC Enforcement: Annual Inspections

Contaminants: Unexploded Ordnance(UXO)

Additional Information

N/A

LUC Title: Landfill 1 LUC

Site(s): FTLE-54

ROD/DD Title: Landfill 1 DD

Location of LUC

1000 feet around site boundary

Land Use Restriction: Media specific restriction - Prohibit, or otherwise manage excavation, Media specific restriction - restrict drinking water well installation, Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Dig Permits, Restrictions on Groundwater Withdrawal, Restrictions on land use

Land Use Control (LUC) Summary

Date in Place: 200709

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200709

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: VOC

Additional Information

N/A

LUC Title: Landfill 4 LUC

Site(s): FTLE-57

ROD/DD Title: Landfill 4/SRCPP ROD

Location of LUC

1000 feet around site boundary

Land Use Restriction: Landfill restriction - Prohibit activities that would impact the LF cap (or cover system) and drainage system, Media specific restriction - Prohibit, or otherwise manage excavation, Media specific restriction - restrict drinking water well installation, Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Dig Permits, Restrictions on Groundwater Withdrawal, Restrictions on land use

Date in Place: 200709

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200709

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: VOC

Additional Information

N/A

LUC Title: Logistics Center LUC

Site(s): FTLE-33

ROD/DD Title: Logistics Center ROD

Location of LUC

1000 feet around site boundary

Land Use Restriction: Landfill restriction - Restrict access to the site, Media specific restriction - Prohibit, or otherwise manage excavation, Media specific restriction - restrict drinking water well installation, Restrict land use - No residential use

Types of Engineering Controls: Fences, Signs

Types of Institutional Controls: Dig Permits, Restrictions on Groundwater Withdrawal, Restrictions on land use

Land Use Control (LUC) Summary

Date in Place: 200709

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200709

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: VOC

Additional Information

N/A

LUC Title: Miller Hill LUCs

Site(s): FTLE-73

ROD/DD Title: Miller Hill Lead Cleanup DD

Location of LUC

JBLM Miller Hill

Land Use Restriction: Media specific - Prohibit activities that results in contact with contaminated sediments

Types of Engineering Controls: Fences, Signs

Types of Institutional Controls: Dig Permits, Restrictions on land use

Date in Place: 201308

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 201308

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: METALS

Additional Information

N/A

LUC Title: Pesticide Rinse Area

Site(s): FTLE-28

ROD/DD Title: PRA, SW Outfalls, and FTP DD

Location of LUC

Site boundary.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Dig Permits, Restrictions on land use

Date in Place: 200012

Modification Date: 200709

Date Terminated: N/A

Land Use Control (LUC) Summary

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200709

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: PESTICIDES

Additional Information

N/A

LUC Title: SRCPP LUC

Site(s): FTLE-32

ROD/DD Title: Landfill 4/SRCPP ROD

Location of LUC

Site boundary

Land Use Restriction: Media specific restriction - restrict drinking water well installation

Types of Engineering Controls: None

Types of Institutional Controls: Restrictions on Groundwater Withdrawal

Date in Place: 199903

Modification Date: 200709

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200709

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: PAH

Additional Information

N/A

Cleanup Program Summary

Installation Historic Activity

JBLM consists of the former Fort Lewis and the former McChord AFB. These facilities were combined as a result of the 2005 Defense BRAC. The environmental cleanup program at JBLM-Lewis consists of the Installation Restoration Program (IRP), the Military Munitions Response Program (MMRP) and the Compliance Restoration (CR) program. The IRP at JBLM-McChord includes all of the sites in the non-munitions environmental program. All MMRP sites at JBLM-McChord are closed. For easy reference, the following description of the overall JBLM cleanup program is divided into JBLM-Lewis (Fort Lewis) and JBLM-McChord Field (McChord AFB).

JBLM-LEWIS IRP

JBLM- Lewis began operation as Camp Lewis in 1917 to serve the needs of World War I (WWI) and later World War II (WWII). In 1927 it became Fort Lewis, and it has been in continuous operation since. In 2010 it was combined with McChord Air Force Base to become JBLM.

In 1987, Landfill 5, located on the west edge of JBLM-Lewis, was listed on the National Priorities List (NPL) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The listing was the result of organics and metals concentrations in groundwater. In 1989 the Logistics Center on the north edge of JBLM-Lewis was also listed on the NPL. The reason for its listing was chlorinated hydrocarbons in groundwater in downgradient drinking water wells.

Later in 1990 a ROD issued for the Logistics Center (FTLE-33) included six specific sub-areas. One of the sub-areas, Landfill 2 (FTLE-67), was identified as the ultimate source of elevated concentrations of organic constituents, primarily trichloroethene (TCE). The remedy for the Logistics Center included groundwater treatment.

In 1992, a no further action (NFA) ROD was issued for Landfill 5. The site was delisted from the NPL in 1995.

In 1993, a ROD was issued for two other sites in the federal facilities agreement (FFA) including Landfill 4 (FTLE-51) and the former Solvent Refined Coal Pilot Plant (SRCPP) (FTLE-32). An RA at Landfill 4 included groundwater treatment by air sparging and long-term monitoring. An RA at the SRCCP included soil excavation and treatment and land use controls (LUC). The remedies for Landfill 4 and SRCCP are in place.

Also in 1993 Fort Lewis submitted a Resource Conservation and Recovery Act (RCRA) Part B permit application for a hazardous waste storage unit. In 1997 a RCRA facility assessment (RFA) was completed as a result of the permit application.

In 2001 an agreed order between Fort Lewis and the WSDOE was signed to address the sites listed in the 1997 RFA. Work included remedial investigations (RI), feasibility studies (FS), and a cleanup action plan (CAP) in accordance with the state Model Toxics Control Act (MTCA) regulations. Eleven solid waste management units (SWMUs) and nine AOCs were identified. These sites are being administered by the WSDOE outside of the NPL sites on JBLM-Lewis.

Over the years since the first listings, extensive investigations and RAs have been implemented. The RAs included soil removal and disposal, soil vapor extraction (SVE), air sparging, groundwater treatment, electrical resistive heating, biodegradation, long-term monitoring, and LUC.

In 2010 explanations of significant differences (ESDs) were prepared for five non-NPL sites in which NFA or LUC was proposed. As of August 2014, these are currently under review by the USEPA. The following sites, which were listed in the 1990 ROD, were not formally addressed in decision documents (DDs):

- Storm Water Outfalls (FTLE-10),
- Landfill 6 (FTLE-59),
- LC6 and Pit Area [no Army Environmental Database-Restoration (AEDB-R) designation]
- Industrial Wastewater Treatment Plant (FTLE-51), and
- Battery Acid Pit (FTLE-16).

Also in 2010, technical memoranda for five additional non-NPL sites were prepared and submitted to the USEPA. These sites were listed in the 1990 FFA but were not formally addressed in DDs. LUCs are proposed for these sites:

- Illicit PCB Dump Site (FTLE-46),
- Landfill 1 (FTLE-54),
- Park Marsh (FTLE-18),
- Fire Training Pit (FTLE-17), and
- Pesticide Rinse Area (FTLE-28).

Cleanup Program Summary

Installation Historic Activity

A five-year review was conducted in 2012 for sites listed in the FFAs for JBLM-Lewis and JBLM-McChord Field. Major sites reviewed were the Lewis Logistics Center, Lewis Landfill 4, and McChord ALGT. Findings and recommendations are described in individual site-specific sections.

As of 2014, all IRP sites are either remedy-in-place (RIP) or response complete (RC) except Landfill 9 (FTLE-62). A CAP for Landfill 9 is under review by the WSDOE. The proposed remedy is to cover the landfill with a soil cover. Remediation is expected to be completed by 2015. The RIP tasks include operation and maintenance of three groundwater pump-and-treat systems, long-term monitoring, and implementation of LUCs.

JBLM-LEWIS MILITARY MUNITIONS RESPONSE PROGRAM

The MMRP was established to investigate and clean up former ranges outside of the active ranges area. In 2002 and 2003 a range inventory and a historical records search were conducted at JBLM-Lewis. Two hundred and twenty-six ranges were identified. Of these, 15 were located outside of active ranges of JBLM-Lewis and were included in the AEDB-R database. An NFA was recommended for all but two of the sites in the April 2007 MMRP site inspection (SI) report. These are the Skeet Range (FTLEW-008- R-01) and the B Range (FTLEW-015-R-01).

The Skeet Range was remediated in 2012 under an agreed order with the WSDOE. In 2013, a feasibility study of B Range was completed. As of June 2014 a proposed plan is under the USEPA review.

JBLM-COMPLIANCE RESTORATION PROGRAM

The Compliance-related Cleanup (CC) program originally addressed sites on JBLM-Lewis that were not funded by the Defense Environmental Restoration Program (DERP). This included a number of RCRA sites; and in JBLM's case included most of the sites covered under the 2001 agreed order with the WSDOE. In fiscal year (FY) 09 sites CC FL04 through CC FL10 became eligible for DERP funding and were consequently transferred from the CC program to the CR program.

An RI was completed in 2003 for RCRA sites covered under the agreed order. NFA was determined for all but nine sites. An FS was prepared for the nine sites. LUC was determined for two of the sites. The remaining sites were:

- Landfill 9 (FTLE-62) (existing IRP site),
- Former Miller Hill Ranges (FTLE-73) (existing IRP site),
- Former Skeet Range (FTLEW-008-R-01) (existing MMRP site),
- Bldg A1033 Underground Storage Tank (UST) Site (CC FL04),
- Gray Army Airfield (GAAF) Fuel Facility (CCFL05),
- Bldg 04131 UST Site (CC FL08), and
- Bldg A0111 UST Site (CC FL10)

CC FL08 CAP was approved in October 2014, and LUCs have been implemented.

Sites listed above in the CR program reached RIP or RC by FY 15.

JBLM-McCHORD FIELD IRP

JBLM-McChord Field began operation in 1938 as McChord Field. It became McChord Air Force Base in 1947. In 2010 the facility was combined with Fort Lewis to become Joint Base Lewis-McChord. The real property and facility infrastructure of McChord Field are owned and maintained by the Army. The tenant Air Force 62nd Airlift Wing continues to operate and maintain mission equipment and flight operations. Environmental obligations for the facility were transferred from the Air Force to the Army on Oct. 1, 2010.

In August 1982, a phase I records search identified 62 sites at the installation, including fire training areas, spill areas, landfills, and waste pits. Three additional sites were identified in 1984, 1989 and 1991. Two sites were placed on the NPL: Area D/ALGT and the Washrack/Treatment Area (WTA). In 1989 an FFA was signed by McChord AFB, USEPA Region 10, and the WSDOE.

The installation completed an RI/FS for the ALGT NPL site in 1991. TCE was discovered in the groundwater that required remediation. A ROD was issued to install a groundwater pump-and-treat (P&T) system. The system was constructed and began

Cleanup Program Summary

Installation Historic Activity

operation in 1994. The treatment system consists of three groundwater extraction wells which pump TCE-contaminated water to a series of granular activated carbon treatment cells. After treatment, clean water is infiltrated. Operation of the system is ongoing.

An RI/FS and a ROD for the WTA NPL site were completed in FY92. The ROD specified cleanup of fuel-contaminated groundwater and soil, and groundwater monitoring of the leach pits. Further investigation and a pilot project field evaluation found limited contamination. The WTA was deleted from the NPL on Sept. 26, 1996.

In 1992 a consent decree was issued by the WSDOE to evaluate 29 sites that were not addressed by the USEPA in the 1982 records search. Of these 29 sites, 25 were deemed NFA. The remaining four sites plus two more sites were included in the Washington State Hazardous Sites List. From 1996 to 2010 six sites remained on the State Hazardous Sites List and were included in the installation's monitoring program. In 2010 sites LF-01, LF-02, DP-61 and WP-64 were removed from the state list.

In 2001, the installation initiated an RI/FS in response to TCE found in groundwater in the northern segment of site SS-34. TCE was also detected in monitoring wells in a residential neighborhood adjacent to the installation. The area was designated SS-34N and comprised approximately 350 acres. Private residential wells in the subdivision were decommissioned, and the residences were connected to the municipal water supply. The RI/FS was finalized in 2003, and a state CAP was issued in 2004. The selected RA was in situ chemical remediation. Injections and monitoring continue at this site.

As of August 2014 all sites at McChord Field are either RIP or RC. Two sites that are RIP include: MF-ALGT-LF-05 and MF-SS-34N. P&T operations continue at MF-ALGT-LF-05, and chemical oxidation treatment and monitoring of TCE continue at MF-SS-34N. The remaining four sites are RC with long-term monitoring of groundwater for fuels and VOCs. They include: MF-SD-054, MF-DP-60, MF-SS-34, and MF-WP-44.

McCHORD FIELD MMRP

In 2001 a comprehensive range inventory was initiated. The draft McChord Field range inventory report was issued in November 2001. A comprehensive site investigation for MMRP sites was conducted in 2008. Five sites that included three ordnance burn areas (AB-343, AB-350 and AB-351) and two lead-contaminated sites (SR-347 and TS-616) required ordnance clearing or cleanup. During the summer of 2010 all the identified munitions-related contamination was cleared and cleaned up. Consequently, no MMRP sites remain on McChord Field.

COMPLIANCE RESTORATION PROGRAM

JBLM-McChord Field does not have any CR sites. All sites are addressed by the IRP.

Installation Program Cleanup Progress

IRP

Prior Year Progress: IRP sites on JBLM were either RIP or RC.

RA was completed for site FTLE-62.

Operations and maintenance (O&M) continued at three groundwater P&T systems at JBLM-Lewis and one at JBLM-McChord.

Remedial actions-operations (RA(O)) was conducted at FTLE-33, FTLE-46, FTLE-54, FTLE-57, MF-ALGT-LF-05, MF-SS-34, MF- DP-60, and MF-WP-44.

LTM and LUCs continued to be implemented at JBLM.

Future Plan of Action: At Lewis, USEPA and JBLM will finalize closure documents for the 1990 ROD for sites listed in the JBLM-Lewis ROD or the FFA but not closed per CERCLA. A new state-agreed order and RCRA permit will be negotiated.

Cleanup Program Summary

RA(O) and LTM will continue at the McChord Field sites.

MMRP

Prior Year Progress: A ROD for B-Range was completed. It is currently under USAEC legal review.

Future Plan of Action: The ROD for B Range implementing permanent LUCs will be finalized and signed by the Army and regulators. RIP will be achieved.

CR

Prior Year Progress: RA for CCFL04 consisting of air sparging/vapor extraction continued. Monitored natural attenuation (MNA) is being implemented for the remaining sites (CCFL05, 08 and 10). Investigation of 40 additional UST sites was initiated. NFA for the majority of the sites is expected. A new agreed order and RCRA permit negotiations were initiated.

Future Plan of Action: MNA will continue at sites CCFL05, 08, and 10. RA at CCFL04 will be completed. The investigation for 40 UST sites will be completed. The agreed order and RCRA permit from the state will be completed.

JOINT BASE LEWIS-MCCHORD
Army Defense Environmental Restoration Program
Installation Restoration Program

IRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 118/97

Installation Site Types with Future and/or Underway Phases

1	Burn Area (MF-OT-039)
1	Contaminated Fill (FTLE-32)
5	Contaminated Ground Water (FTLE-33, MF-ALGT-LF-05, MF-DP-60, MF-SS-34, MF-SS-34N)
2	Disposal Pit/Dry Well (FTLE-16, MF-WP-44)
1	Firing Range (FTLE-73)
6	Landfill (FTLE-54, FTLE-57, FTLE-62, MF-LF-004, MF-LF-006, MF-LF-007)
3	Spill Site Area (FTLE-28, FTLE-31, FTLE-46)
1	Surface Disposal Area (MF-SD-054)
1	Waste Treatment Plant (FTLE-51)

Most Widespread Contaminants of Concern

Metals, Petroleum, Oil and Lubricants (POL), Polychlorinated Biphenyls (PCB), 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
FTLE-46	ILLICIT PCB DUMP SITE	IRA	WASTE REMOVAL - SOILS	1984
FTLE-46	ILLICIT PCB DUMP SITE	IRA	CAPPING	1985
FTLE-70	UNDERGROUND GAS SUPPLY PIPING	FRA	WASTE REMOVAL - SOILS	1993
FTLE-70	UNDERGROUND GAS SUPPLY PIPING	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1993
MF-SD-054	LEACH PITS AT WTA NPL SITE	FRA	NATURAL ATTENUATION	1993
MF-ALGT- LF-05	American Lake Garden Tract	FRA	CARBON ADSORPTION	1994
MF-DP-60	Floating Fuel at Washrack/Treatment	FRA	NATURAL ATTENUATION	1994
FTLE-32	SOLVENT REFINED COAL PILOT PLANT	FRA	INSTITUTIONAL CONTROLS	1995
MF-SS-34	Spill Site Beside POL Storage Area	FRA	NATURAL ATTENUATION	1995
FTLE-57	LANDFILL 4	FRA	AIR SPARGING	1996
FTLE-57	LANDFILL 4	FRA	SOIL VAPOR EXTRACTION	1996
FTLE-57	LANDFILL 4	FRA	NATURAL ATTENUATION	1996
FTLE-57	LANDFILL 4	FRA	INSTITUTIONAL CONTROLS	1996
FTLE-66	(2) UST (NEVADA & 41ST DIVISION)	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1997
FTLE-16	BATTERY ACID PIT	FRA	INSTITUTIONAL CONTROLS	1999
FTLE-16	BATTERY ACID PIT	FRA	CAPPING	1999

IRP Summary

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

Site ID	Site Name	Action	Remedy	FY
FTLE-32	SOLVENT REFINED COAL PILOT PLANT	FRA	THERMAL DESORPTION	1999
FTLE-32	SOLVENT REFINED COAL PILOT PLANT	FRA	WASTE REMOVAL - SOILS	1999
FTLE-32	SOLVENT REFINED COAL PILOT PLANT	FRA	CAPPING	1999
FTLE-40	MIXED WASTE STORAGE (BLDG. S9749)	FRA	REMOVAL	1999
FTLE-46	ILLICIT PCB DUMP SITE	FRA	FENCE OR OTHER SITE ACCESS CONTROL MEASURES	1999
FTLE-33	LOGISTICS CENTER	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	2001
FTLE-30	BUILDING 9507 (TRANSFORMER STORAGE)	FRA	WASTE REMOVAL - SOLIDS (NON-SOILS)	2002
FTLE-67	LANDFILL 2	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	2002
MF-DP-061	ACID DRY WELL BETWEEN BLDG745&CREEK	FRA	REMOVAL	2003
MF-SS-34N	TCE Cantonment Area Spill Site	IRA	ALTERNATE WATER SUPPLY/WATER SUPPLY TREATMENT	2003
MF-WP-44	Vehicle Maintenance Leach Pit	FRA	NATURAL ATTENUATION	2003
MF-WP-44	Vehicle Maintenance Leach Pit	IRA	WASTE REMOVAL - SOILS	2003
FTLE-33	LOGISTICS CENTER	IRA	THERMALLY ENHANCED SVE	2004
FTLE-33	LOGISTICS CENTER	IRA	INSTITUTIONAL CONTROLS	2004
FTLE-54	LANDFILL 1	FRA	NATURAL ATTENUATION	2004
FTLE-73	MILLER HILL	IRA	FENCE OR OTHER SITE ACCESS CONTROL MEASURES	2004
MF-SS-34N	TCE Cantonment Area Spill Site	FRA	CHEMICAL REDUCTION/OXIDATION	2004
FTLE-31	DRMO YARD	FRA	INSTITUTIONAL CONTROLS	2005
MF-RW-035	RADIOACTV DSPSL PIT, SITE 35	FRA	REMOVAL	2005
FTLE-33	LOGISTICS CENTER	FRA	GROUND WATER TREATMENT	2007
MF-WP-064	WASTE PIT AT ENTOMOLOGY SHOP	FRA	REMOVAL	2008
FTLE-73	MILLER HILL	IRA	REMOVAL	2009
FTLE-73	MILLER HILL	FRA	REMOVAL	2013
PBC@FortLe wis	PBC at Fort Lewis	FRA	OTHER	2013
FTLE-73	MILLER HILL	FRA	INSTITUTIONAL CONTROLS	2014
FTLE-62	LANDFILL 9	FRA	CAPPING	2016

Duration of IRP

Date of IRP Inception: 198008

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201610/204609

Date of IRP completion including Long Term Management (LTM): 204609

IRP Contamination Assessment

Contamination Assessment Overview

Contamination at both JBLM-Main and McChord Field consists primarily of chlorinated hydrocarbons in groundwater originating from disposed solvents, and fuel in soil and groundwater from former UST. Groundwater contamination affects principally the upper water table aquifer with TCE concentrations of up to 250 micrograms per liter (ug/L). Area effect of the plumes from all sources is about 2,000 acres; 1,800 acres of this is attributable to the Logistics Center on JBLM-Lewis.

In spite of this widespread contamination, all IRP sites at JBLM are RIP/RC except Landfill 9 (FTLE-62).

Landfill 9 is a 15-acre former landfill, which received some municipal solid waste and medical solid waste, in addition to its primary waste, which was vegetation. Maximum concentrations of metals and carcinogenic polycyclic aromatic hydrocarbons (PAH) are above MTCA cleanup levels for unrestricted use. An FS was conducted for soils in the landfill. Capping and LUCs are proposed for the site. As of 2015 capping is underway. RIP is scheduled for late FY15 or early 2016.

Cleanup Exit Strategy

See the individual site narrative pages for more specific details on the individual site exit strategies.

IRP Previous Studies

Year	Title	Author	Date
1982	Phase I Records Search Report - McChord AFB	CH2MHill	AUG-1982
1983	Installation Assessment for Fort Lewis, YTC, Camp Bonneville and Vancouver Barracks	Environmental Science & Engineering, Inc.	NOV-1983
1985	Final IRP Phase II Confirmation/Quantification Stage I Report for American Lakes Garden Tract	Science Applications International Corp	DEC-1985
1986	GW Contamination Investigation at Logistics Center	USACE	MAY-1986
	RCRA Facility Assessment - 1986 Fort Lewis	EPA	SEP-1986
1988	RI Report for Logistics Center	Envirosphere/Shannon & Wilson, Inc	NOV-1988
1990	Risk Assessment for Log Center	Ebasco Environmental, Inc	FEB-1990
	FS for Logistics Center	Shannon & Wilson	MAY-1990
	SI Report for Park Marsh Landfill	Shannon & Wilson	JUL-1990
	SI Report for Landfills 1 and 4 - Fort Lewis	Pacific Northwest National Laboratories	AUG-1990
1991	Feasibility Study Report, McChord Air Force Base	Ebasco Environmental, Inc.	MAR-1991
	Remedial Investigation Report, McChord Air Force Base	Ebasco, Environmental, Inc	MAR-1991
1992	Washrack/Treatment Area RI/FS	Ebasco Environmental	JUL-1992
	Final Design - Area D/ American Lake Garden Tract Groundwater Treatment, McChord AFB	US Corps of Engineers, Seattle District	OCT-1992
1993	RI Report for Landfill 4/SRCPP - Fort Lewis	AGI, Inc	FEB-1993
	FS for Landfill 4/SRCPP - Fort Lewis	AGI, Inc	MAY-1993
	Sea Level Aquifer Study Report	Ebasco/Shannon & Wilson	JUL-1993
1995	SI Report for Old EOD - Fort Lewis	Ecology & Environment	FEB-1995
	Revised Draft RI/FS Report, Site WP-44 - McChord AFB	Foster Wheeler Environmental Corp	JUN-1995
	Final Phase II Field Summary Report - McChord AFB	Ebasco Environmental	SEP-1995
1997	SI Report for EGDY Expanded SI: Site History and Conceptual Site Model	Woodward Clyde	OCT-1997
1999	SI Report for Expanded EGDY Investigation	URS	OCT-1999
2000			

IRP Previous Studies

Year	Title	Author	Date
2000	SI Report for DRMO Yard - Fort Lewis	Shannon & Wilson	MAR-2000
2001	EE/CA for Log Center (EGDY)	URS	JAN-2001
	EDGY Interim Action Report (Drum Removal)	Gary Struthers & Associates	DEC-2001
2002	RI Report for Logistics Center - Phase II	URS	JUN-2002
2003	Final Site SS-34N RI/FS	Foster Wheeler Environmental Corp	SEP-2003
2005	RA Completion Report for Thermal Remediation Fort Lewis	Thermal Remediation Services	APR-2005
	SI Report for Landfill 6	Fort Lewis	AUG-2005
2006	Sea Level Aquifer FS	Pacific Northwest National Laboratories	FEB-2006
	MAMC Condenser Water System Study Report	TN & Associates, Inc	APR-2006
	FY06 EGDY Thermal Remediation Performance Assessment Data Summary Report	US Army Corps of Engineers, Seattle District	SEP-2006
2007	EGDY NAPL Area 1 Flux Test Report - Fort Lewis	ESTCP	SEP-2007
	SI Report for Madigan Housing Indoor Air	KTA/TEC	SEP-2007
	SI Report for IWTP	Fort Lewis	DEC-2007
2008	Performance Assessment After Action Report	Fort Lewis et al	APR-2008
	Sea Level Aquifer Pump & Treat System Extraction Well Installation Report	Pacific Northwest National Laboratories	JUN-2008
	Sea Level Aquifer Pump & Treat System Design - Fort Lewis	J&J Maintenance, Inc.	OCT-2008
2009	Fort Lewis Agreed Order, Feasibility Study, Former Miller Hill and Skeet Ranges	Kemron, Inc.	DEC-2009
2010	Draft Final Interim Remedial Action Report, Sea Level Aquifer Pump and Treat System	JBLM- Public Works Environmental Division	JUL-2010
	Interim Action Plan, Former Miller Hill and Skeet Ranges	Kemron, Inc	NOV-2010
2011	Bioenhancement Pilot Study Summary Report, Area D/American Lake Garden Tract (Draft)	Tetra Tech EC, Inc.	APR-2011
2012	Interim Action Work Plan, Former Miller Hill and Skeet Ranges	Kemron, Inc.	FEB-2012
	First Installation Wide Five-Year Review Report, Joint	US Army Corps of	SEP-2012

IRP Previous Studies

	Title	Author	Date
2012	Base Lewis-McChord	Engineers	
	Final Remedial Investigation Report - B Range	AMEC/Kemron, Inc	OCT-2012
2013	Additional Soil Investigation, Landfill 9 -Final	Versar, Inc.	JAN-2013
	Final Land Use Control Plan - B-Range	Versar, Inc	APR-2013
	I-5 Pump and Treat Performance Assessment	Pacific Northwest National Laboratory	APR-2013
	JBLM Agreed Order Interim Action Completion Report - Miller Hill and Skeet Ranges	Kemron, Inc	MAY-2013
	Building A0111 UST Site (AOC 8-4) Summary Report	Versar, Inc	MAY-2013
	Interim Action Work Plan - Air Sparge/Soil Vapor Extraction System - AOC 9-2	Versar, Inc	JUL-2013
	Use of Compound Specific Stable Isotope to Distinguish Between Vapor Intrusion and Indoor Sources of VOCs	ESTCP	NOV-2013
	Use of On-site GC/MS Analysis to Distinguish Between Vapor Intrusion and Indoor Sources of VOCs	ESTCP project ER-201119	NOV-2013
2014	Fort Lewis Agreed Order Final Interim Action Plan Landfill 9	Versar, Inc	FEB-2014

JOINT BASE LEWIS-MCCHORD
Installation Restoration Program
Site Descriptions

Site ID: FTLE-16
Site Name: BATTERY ACID PIT
Alias: SWMU 16

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Other (lead-acid electrolyte)

Media of Concern: Soil

Phases	Start	End
PA.....	198205.....	198309
SI.....	198205.....	199909
RI/FS.....	198601.....	199909
RA(C).....	199905.....	199909
LTM.....	200604.....	204603

RIP Date: N/A

RC Date: 200604

SITE DESCRIPTION

The Battery Acid Pit is located in the North Uses Area of the Logistics Center and was used from 1971 to 1976 for discarding electrolyte solutions from vehicle batteries. The pit contained crushed limestone which was used to neutralize battery acid. While it is not known how many varieties of batteries were drained at the Battery Acid Pit, it is known that the majority were vehicle batteries containing lead-acid electrolyte. Remediation of the site included construction of an asphalt cap. A 2006 DD determined NFA was required. LUCs were implemented to maintain the asphalt cap and prevent residential use. LUC costs are minimal and are captured under FTLE-33. Five-year review costs are also captured under FTLE-33.

A 2010 ESD memorializing the DD in relation to the Logistics Center ROD was never approved by USEPA Region 10. Instead, the USEPA wrote a Preliminary Close Out Report (PCOR) in September 2015 for all sites captured under the logistics Center NPL and 14 other sites covered under the FFA between USEPA and JBLM.

CLEANUP/EXIT STRATEGY

Maintain LUCs.

Site ID: FTLE-28

Site Name: PESTICIDE RINSE AREA - BUILDING 2054

Alias: FTLE-28

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Phases	Start	End
PA.....	198205.....	198309
SI.....	199302.....	199909
LTM.....	200709.....	204603

RIP Date: N/A

RC Date: 200101

SITE DESCRIPTION

The Pesticide Rinse Area is an unbermed, 34-feet by 34-feet, concrete pad outside a pesticide storage area. It is located between North 3rd and North 5th Streets on Crary Avenue on the south side of Building No. 2054. The pad was used for at least 24 years as a rinse site for applicator equipment and empty chemical containers. The pad is dissected by many cracks, some of which extend to the base of the concrete. In 1993/1994 exploratory borings demonstrated that this site did not pose a threat to human health or the environment. Chlordane was the only analyte detected that exceeded industrial screening criteria at the time of analysis. Natural degradation of chlordane prior to reaching groundwater would occur.

The USEPA concurred with a December 2000 SI report that NFA under CERCLA is needed. In September 2007 LUCs were implemented to restrict residential housing at the site. LUCs are managed through the JBLM CERCLA LUC program and are captured under FTLE-33. Five-year review costs are also captured under FTLE-33.

A 2010 ESD memorializing the DD in relation to the Logistics Center ROD was never approved by USEPA Region 10. Instead, the USEPA wrote a PCOR in September 2015 for all sites captured under the logistics Center NPL and 14 other sites covered under the FFA between the USEPA and JBLM.

CLEANUP/EXIT STRATEGY

Maintain LUCs.

Site ID: FTLE-31
Site Name: DRMO YARD
Alias: FTLE-31

STATUS

Regulatory Driver: CERCLA
RRSE: LOW

Phases	Start	End
PA.....	198205.....	198309
SI.....	198205.....	198309
RI/FS.....	198702.....	199610
RA(C).....	199909.....	200501
LTM.....	200710.....	204603

RIP Date: N/A
RC Date: 200604

SITE DESCRIPTION

The approximately 33-acre Defense Reutilization and Marketing Office (DRMO) Yard site is located within a secured area in the southeast portion of the Logistics Center immediately northwest of the East Gate Disposal Yard (also known as Landfill 2). The site is currently used as an active industrial laydown yard for storage of surplus materials to be recycled. Future land use and future site operations are expected to remain the same.

In 2000, a removal action was initiated to remove soil with PCBs. However, sampling of excavated material during the removal indicated that PCB levels were below industrial cleanup levels. No material was removed from the site.

In April 2006, a DD selecting LUCs as the remedy for the site received concurrence from the USEPA. A LUC plan was approved by the USEPA in September 2007. LUCs are managed through the JBLM CERCLA LUC program. Costs are captured in site FTLE-33. Five-year review costs are also captured under FTLE-33.

A 2010 ESD memorializing the DD in relation to the Logistics Center ROD was never approved by USEPA Region 10. Instead, the USEPA wrote a PCOR in September 2015 for all sites captured under the logistics Center NPL and 14 other sites covered under the FFA between USEPA and JBLM.

CLEANUP/EXIT STRATEGY

Maintain LUCs.

Site ID: FTLE-32
Site Name: SOLVENT REFINED COAL PILOT PLANT
Alias: SWMU 56

STATUS

Regulatory Driver: CERCLA
RRSE: HIGH

Phases	Start	End
PA.....	198205.....	198309
SI.....	199109.....	199210
RI/FS.....	199111.....	199310
RD.....	199311.....	199506
RA(C).....	199506.....	199903
LTM.....	199903.....	204603
RIP Date:	N/A	
RC Date:	199903	

SITE DESCRIPTION

The SRCPP was a Department of Energy production and research facility designed to develop a solvent extraction technology for deriving petroleum hydrocarbon-like products from coal. The SRCPP was initially designed to convert coal into a low-sulfur, low-ash solid product. The process was later modified to distill the volatile fractions and produce fuel products. It was in operation from 1974-1981.

Studies conducted in the 1980s indicated a number of sites where releases to the environment had occurred. A ROD was issued in September 1993. Cleanup methodology was determined from a treatability study conducted in 1994. Low-temperature thermal desorption was selected and approximately 44,600 cubic yards of material were treated and returned to the excavations from 1996 through 1997. The cleanup level was 1 milligrams per kilogram (mg/kg) of chlorinated PAH. Groundwater monitoring was conducted for two years following the cleanup. No further action for soil remediation is required.

In September 2007 in accordance with the ROD, a LUC was implemented to prevent new drinking water wells without USEPA approval. LUCs are managed through the JBLM CERCLA LUC program. Costs are captured under site FTLE-33.

The USEPA wrote a PCOR in September 2015 for all sites captured under the logistics Center NPL and 14 other sites, which includes this site, covered under the FFA between the USEPA and JBLM.

CLEANUP/EXIT STRATEGY

Maintain LUCs.

Site ID: FTLE-33
Site Name: LOGISTICS CENTER
Alias: FTLE-33

STATUS

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

Phases	Start	End
PA.....	198205.....	198309
SI.....	198205.....	198309
RI/FS.....	198702.....	200409
RD.....	199201.....	200608
IRA.....	200010.....	200409
RA(C).....	199505.....	200709
RA(O).....	199508.....	204403
RIP Date:	200709	
RC Date:	204403	

SITE DESCRIPTION

FTLE 33 has groundwater contamination resulting from the disposal of solvents from the 1940s to the 1970s at Landfill 2, formerly known as East Gate Disposal Yard. The primary contaminant of concern is TCE. It is present in both the Vashon and Sea Level Aquifers (SLA).

In the late-1980s impacted domestic water wells in the community of Tillicum were shut down. In 1990 a ROD was signed. The selected remedy was groundwater extraction and treatment of water in the Vashon aquifer for 30 to 50 years. Cost-to-complete (CTC) total costs are based on running the systems for 50 years.

In 1995, in accordance with the 1990 ROD, two groundwater P&T systems in the Vashon Aquifer, one at the Landfill 2 source area and one downgradient system near the installation boundary began operation.

Significant events conducted between 1998 and 2015 are:

- 1) ESD to the 1990 ROD signed in 1998: The ESD focused on accelerated cleanup of the source area, and completion of additional contaminant transport studies;
- 2) Removal of over 400 waste drums containing 29,000 pounds of TCE from Landfill 2 subsurface in 2001;
- 3) Treating three nonaqueous phase liquid sources areas, approximately one acre each, with electrical resistivity heating between 2003 and 2007;
- 4) Completing reconfiguration of the Landfill 2 P&T System with eight new extraction wells and new infiltration gallery locations. In November 2004 the USAEC granted RIP status.
- 5) Implementing LUCs in 2007. The controls include fencing, restrictions on training access, residential land use and new water wells without USEPA approval.
- 6) Installing the SLA P&T system near Madigan Army Medical Center (MAMC) in 2009. Full operation was achieved in March 2010. Following groundwater treatment, the system pumps water to Madigan Hospital, where it is re-used as cooling water for their heating, ventilation, and air conditioning (HVAC) system.

In 2010 JBLM submitted draft ESDs and technical memoranda to the USEPA. The documents will close out 11 NFA sites that were listed in the original 1990 ROD and/or FFA but do not have specific closure documents. NFA beyond the long-term maintenance is proposed. Instead of approving individual ESDs the USEPA wrote a PCOR in September 2015 for all sites captured under the logistics Center NPL and 14 other sites covered under the FFA between the USEPA and JBLM.

In 2010 a pilot bioremediation test was conducted at Landfill 2. The purpose was to determine the viability of reducing contaminant concentrations biologically in areas that were not thermally treated. Objective: reduce time required for P&T operations. The pilot test was effective in treating TCE. However, the high permeability of the Vashon Aquifer in the landfill area limits the effectiveness of bioremediation.

Site ID: FTLE-33
Site Name: LOGISTICS CENTER
Alias: FTLE-33

A five-year review was conducted in FY12. Issues and recommendations addressed were:

- 1) In 2013 a vapor intrusion study was conducted. Results of the study indicate that there may be a potential risk to human health from the TCE plume. Another study was conducted in March 2016. Six buildings were sampled for TCE vapors. TCE vapors were detected in one building at 1.6 micrograms per meter squared. The USEPA screening level for TCE vapor is 3 micrograms per meter squared. A draft report is currently being written.
- 2) Interstate-5 system capture zone in the Lower Vashon Aquifer was evaluated. Computer modeling shows that the Lower Aquifer is contained by the P&T system.
- 3) Cleanup goals and other risk based comparison values for groundwater were evaluated. Groundwater monitoring program was optimized.

Five-year review costs for 10 sites on Lewis and five sites on McChord Field are captured under FTLE 33: FTLE 16, 28, 31, 32, 33, 46, 51, 54, 57, 62, MF-ALGT-LF-05, MF-SS-34, MF-SS-34N, MF-WP-44 and MF-DP-60. LUC management costs for 19 sites located on Lewis are captured under FTLE 33. These include the sites mentioned above as well as CR sites: CCFL-04, CCFL-05, CCFL-08, CCFL-10.

CLEANUP/EXIT STRATEGY

In addition to implementing the five-year review recommendations, the ROD-required remedy will be maintained as follows:

- Operate and maintain the Landfill 2 and Interstate 5 P&T systems;
- Conduct groundwater monitoring including the Sea Level Aquifer P&T system;
- Maintain LUCs, the administrative record, and the community involvement program;
- Complete five-year reviews in FY17 and FY22; and
- Decommission unnecessary monitoring wells.

Site ID: FTLE-46
Site Name: ILLICIT PCB DUMP SITE
Alias: FTLE-46

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Polychlorinated Biphenyls (PCB)

Media of Concern: Soil

Phases	Start	End
PA.....	198311.....	198411
SI.....	199302.....	199909
IRA.....	198311.....	198410
RA(C).....	199903.....	199909
LTM.....	199909.....	204603

RIP Date: N/A

RC Date: 199909

SITE DESCRIPTION

As a result of an illicit dump of PCBs and trichlorobenzenes in November 1983, the Illicit PCB Dump Site SWMU 43 was included in the 1990 FFA as a non-NPL 1980 CERCLA site. The approximately 1.4-acre site is located within an active training area in the eastern portion of JBLM-Lewis.

In 1983, an emergency response action included removal and off-site disposal of 1,869 tons of contaminated soil. In 1984 a low-permeability clay cap and a perimeter fence were installed. The November 1994 Woodward-Clyde limited field investigation report concluded that there are no complete exposure pathways now, or in the future, because of the soil removal, clay cap, and perimeter fence.

In an April 2006 DD, the selected remedy for the site was long-term management (LTM) of the cap, fence, and LUC. Cap upkeep is performed by base personnel as part of normal roads and grounds maintenance at no cost to the restoration program. LUCs for the site are managed under the JBLM CERCLA LUC program. Costs are captured under site FLTE-33.

A 2010 ESD memorializing the DD in relation to the Logistics Center ROD was never approved by USEPA Region 10. Instead, the USEPA wrote a PCOR in September 2015 for all sites captured under the logistics Center NPL and 14 other sites, which includes this site, covered under the FFA between the USEPA and JBLM.

CLEANUP/EXIT STRATEGY

Continue maintenance and annual inspections of the cap, and fence. Maintain LUCs.

Site ID: FTLE-51

Site Name: OUTFALL #7/ SETTLING BASIN (BLDG. 9586)

Alias: FTLE-51

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

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

Media of Concern: Soil

Phases	Start	End
PA.....	198205.....	198309
SI.....	198205.....	198309
RI/FS.....	198702.....	200809
LTM.....	200810.....	204603

RIP Date: N/A

RC Date: 200810

SITE DESCRIPTION

The Industrial Wastewater Treatment Plant (IWTP) (SWMU 55) is Building 9586 in the north uses area of the Logistics Center. From 1954 until the early-1990s the IWTP treated both wastewater and storm water from the northern portion of the Logistics Center. The IWTP was included in the 1990 FFA (as a non-NPL CERCLA site), based on potential releases to the no-outlet evaporation/percolation lagoon (i.e., "blind ditch"). The recommended RCRA corrective action in the 1986 RFA was to sample soil, from the surface of the "blind ditch," at the point where effluent from the IWTP flows over the ground. In October 1986 four soil samples from the "blind ditch," an effluent sample, and a sludge sample from the IWTP were collected and analyzed for priority pollutants and extraction procedure (EP)-toxicity. As described in the July 1990 hazardous waste evaluation report, detected concentrations of potential contaminants of concern were relatively insignificant. [NOTE: In the 1988 RI, the entire north uses area (including the area around the no-outlet evaporation/percolation lagoon) was also investigated for sources of TCE groundwater contamination.]

No further investigations of the site were conducted between 1988 and 2002 because:

- there was no data or evidence to potentially contradict the 1986 analytical results and suggest that additional corrective action might be necessary
- the site is within the larger Logistics Center NPL site;
- the original Outfall 7 location was active until 2002; and
- the 1988 Logistics Center RI confirmed that the entire north uses area was not a significant contributor to the Logistics Center TCE plume.

In FY02, a more robust storm water treatment system was installed for Outfall 7 (to include a sedimentation basin and an infiltration basin in addition to an oil/water separator). As part of this FY02 project, Outfall 7 was moved from its original location, southwest of the IWTP, to a new location, southeast of the IWTP. Approximately 80 cubic yards of contaminated soil was removed from the original location of Outfall 7 as part of this Military Construction, Army (MCA) funded project. In FY07 additional confirmation sampling was conducted.

A 2010 ESD memorializing the DD in relation to the Logistics Center ROD was never approved by USEPA Region 10. Instead, the USEPA wrote a PCOR in September 2015 for all sites captured under the logistics Center NPL and 14 other sites covered under the FFA between the USEPA and JBLM.

CLEANUP/EXIT STRATEGY

Maintain LUCs.

Site ID: FTLE-54
Site Name: LANDFILL 1
Alias: FTLE-54

STATUS

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

Phases	Start	End
PA.....	198205.....	198309
SI.....	198309.....	199909
RA(C).....	200404.....	200404
RA(O).....	200404.....	204603
RIP Date:	200404	
RC Date:	204603	

SITE DESCRIPTION

Landfill 1 (SWMU 32), consisting of approximately 15 acres, was reportedly used for disposal of solid waste between 1946 and the early-1970s. The site, which is included in the 1990 FFA (as a non-NPL CERCLA site), is located in the southern portion of the cantonment area, approximately one-half mile southwest of Gray Army Airfield. The site is a concern because of the presence of a former solid waste landfill and the elevated concentrations of VOCs, particularly trichloroethylene (TCE), in shallow groundwater around the site. The cleanup level for TCE is 5 ug/L.

Investigation activities at the site include the installation of four monitoring wells in 1984, a limited site investigation (LSI) by Pacific Northwest National Laboratories in 1988 (which included installation of four monitoring wells), another LSI by Woodward-Clyde Group Inc. in 1994, installation of seven monitoring wells in 1995, and various groundwater monitoring events between 1997 and 2003. Additional site background information is included in the April 2004 Landfill 1 groundwater monitoring plan. In April 2004 JBLM-Lewis IRP began conducting annual groundwater monitoring at Landfill 1, in accordance with the April 2004 groundwater monitoring plan. The highest concentration of TCE detected in samples collected during the June 2014 sampling event was 11 ug/L.

An April 2006 DD selected LUCs and long-term groundwater monitoring as the remedy for the site. Costs for LUCs and five-year reviews for this site are tracked under site FTLE-33.

In September 2015 JBLM received a PCOR for site FTLE-33 and 14 other sites (FTLE-54 included) from USEPA Region 10 memorializing the DD in relation to the FFA.

LUC management and site review costs for FTLE 54 are captured under site FTLE 33's CTC.

CLEANUP/EXIT STRATEGY

Continue RA(O) including annual groundwater monitoring through FY45 or until all VOC concentrations are below maximum contaminant levels (MCL) for three consecutive years. Maintain LUCs restricting residential use and unauthorized excavations.

STATUS

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

Phases	Start	End
PA.....	198205.....	198309
SI.....	198805.....	199008
RI/FS.....	199009.....	199310
RD.....	199311.....	199605
RA(C).....	199402.....	199609
RA(O).....	199610.....	204603
RIP Date:	199610	
RC Date:	204603	

SITE DESCRIPTION

Landfill 4 (SWMU 35), consisting of approximately 52 acres, was reportedly used for the disposal of municipal solid waste between 1951 and 1967. The landfill consists of three cells, all located north of Sequelitchew Lake on JBLM-North. The site (along with an SRCPP) was added as an operable unit to the Logistics Center NPL site, and is, therefore, a CERCLA site on the NPL. The site is a concern because of the presence of a former solid waste landfill and elevated concentrations of TCE and vinyl chloride in the Vashon Aquifer.

Investigation and assessment activities, prior to the October 1993 ROD, include installation of five monitoring wells in 1981, an SI in 1990, an RI, a risk assessment, and an FS in 1993. The pre-ROD investigations concluded that the source of groundwater contamination does not appear to be the landfill itself, but rather a discrete hot spot adjacent to the landfill, where other activities, such as vehicle maintenance, likely occurred. Additional site background information is included in the 1993 RI report, the 1993 ROD, and a September 2004 groundwater monitoring plan.

The selected remedy specified in the October 1993 ROD was to complete three years of air sparging and SVE in the discrete hot spot, implement and maintain LUCs, and conduct long-term groundwater monitoring.

Between October 1996 and October 1999, in accordance with the ROD, an air sparging and SVE system was operated in the hot spot. The JBLM IRP has implemented LUCs for the site that were memorialized in the 2007 Fort Lewis LUC plan. Costs for LUCs and five-year reviews for this site are tracked under site FTLE-33.

Post-ROD (RA(O)) groundwater monitoring has included events conducted between 1994 and the present. The most recent monitoring optimization occurred in 2007. The October 2007 monitoring plan is current as of January 2015. The highest concentration of TCE detected in any samples collected during the June 2014 sampling event was 9.3 ug/L. The cleanup level for TCE is 5 ug/L.

LUCs are in effect at the site. The site was evaluated in the 2012 five-year review. Conclusion was that the ROD cleanup levels may require adjustment based on improved analytical detection limits. This will be evaluated during the next five-year review. LUC management and site review costs for FTLE 57 are captured under site FTLE 33's CTC.

CLEANUP/EXIT STRATEGY

Continue annual groundwater monitoring until cleanup levels are reached or through FY45 if required cleanup levels are not attained. Maintain LUCs preventing unauthorized excavation, residential land use, and construction of water supply wells on the site unless approved by the USEPA.

Site ID: FTLE-62
Site Name: LANDFILL 9
Alias: FTLE-62

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Soil

Phases	Start	End
RFA.....	198609.....	198609
CS.....	199501.....	199510
RFI/CMS.....	200004.....	201406
DES.....	201306.....	201406
CMI(C).....	201406.....	201609

RIP Date: N/A

RC Date: 201610

SITE DESCRIPTION

Landfill 9 (SWMU 40), consisting of approximately 15 acres, was apparently used for disposal of vegetation, municipal waste, and medical waste from about 1932 to the 1950s. Approximately five acres in the northwest portion of the landfill is located within an Interstate 5 easement and has already been remediated. Approximately 10 acres in the southeast portion of the landfill is located in an active JBLM training area just south of the Interstate 5 Exit 118 interchange. The southeast portion of the landfill is a Fort Lewis Agreed Order (FLAO) site as a result of RCRA corrective action, recommended in a 1997 RFA.

Although no further RCRA corrective action was recommended for the landfill following the 1986 RFA, some municipal and medical waste was discovered by the Washington State Department of Transportation (WSDOT) in the mid-1990s in the northwest portion of the landfill during construction of an interchange. Between 1995 and 1996 the WSDOT conducted an SI of the landfill. The SI included collection and analysis of soil samples from test pits and within the landfill boundary. The monitoring wells were also installed and sampled. Low concentrations of landfill constituents were detected in soils, and low concentrations of manganese were found in the groundwater. The remedy selected by the WSDOT and approved by the WSDOE for the northwest portion of the landfill included a two-foot gravel cover in locations where interchange construction had already occurred or was to occur, planting grasses and/or shrubs in locations where the cover was applied, implementing LUCs on groundwater use, and decommissioning the four monitoring wells installed during the WSDOT SI. The selected remedy was implemented in 1996.

An SI was conducted in 2002 for the remaining portion of the site. Soil samples were collected and analyzed to complement the data collected during the 1995 to 1996 SI. An FS was conducted for the site in 2010-2011 during which additional soil sampling was conducted at the landfill and the area northeast of the site.

In March 2014 an interim action plan called for a six foot cover of clean soil over the remaining area of Landfill 9. The plan was approved by WSDOE in August 2015. Clean material was hauled from three separate construction sites between 2012 and May 2015. A calculated average of approximately seven feet of material was spread over the remaining areas of Landfill 9. A draft completion report was submitted to Ecology in September 2015. As of March 2016 JBLM has not received concurrence from WSDOE to close out Landfill 9.

Based on the risk to ecological receptors, the proposed remedy is capping (completed in 2015) and LUCs. Costs for LUCs and five-year reviews for this site are captured under FTLE-33's CTC. It is anticipated that WSDOE will accept JBLM's completion report for Landfill 9, therefore FTLE-62 is a zero-cost site for FY17.

CLEANUP/EXIT STRATEGY

Complete the site cap and implement LUCs preventing future residential land use and unauthorized excavations.

Site ID: FTLE-73
Site Name: MILLER HILL
Alias: FTLE-73

STATUS

Regulatory Driver: RCRA
RRSE: MEDIUM
Contaminants of Concern: Metals
Media of Concern: Soil

Phases	Start	End
RFA.....	199601.....	199706
CS.....	200001.....	200006
RFI/CMS.....	200010.....	201011
IRA.....	200305.....	200810
CMI(C).....	200803.....	201406
LTM.....	201406.....	204603
RIP Date:	N/A	
RC Date:	201406	

SITE DESCRIPTION

The Miller Hill Site (AOC 4-2) is a former small arms range complex located on the south side of Miller Hill. The site was used for range activity from about 1917 until the 1960s. Former ranges identified at the site are Pistol Range 62, Pistol Range 67, Subcaliber Tank Range 54, Machine Gun Range 42, and another unnumbered pistol range. At each former range, small arms were fired from firing lines on flat ground at targets placed in front of the undisturbed hillside (which served as the backstop). The impact area (i.e., south-facing hillside) is approximately 0.5 miles long.

Miller Hill is located within the cantonment area in an area currently zoned for mixed use/open space in the JBLM master plan. In addition, a residential housing area is located west of the site. As a result of RCRA corrective action recommended in a 1997 RFA, this is a FLAO site.

Investigation and assessment activities at the site include a June 2000 preliminary investigation, a SI in June 2001, a draft April 2002 risk assessment, a draft November 2002 limited FS, a February 2004 treatability study, additional soil sampling for delineation purposes between 2005 and 2007, a 2008 RI, and a 2010 FS. The investigation activities detected a maximum lead concentration over 100,000 mg/kg in surface soil along the hillside.

In accordance with an April 2004 DD, a four-strand wire perimeter fence was installed as an interim remedial action (IRA) in FY04 to limit potential human direct contact with surface soil.

In October 2008 another interim action was conducted at the Hillside Housing area just west of the Miller Hill ranges. Soil with lead in residential yards was removed to state residential cleanup levels.

Lead remediation of the rest of the site was conducted under a state CAP in 2012. Soil was cleaned up to commercial levels on the flatlands and shallow slopes of the site. The plan includes LUCs to restrict access to steep slopes of the site. LUC costs are captured under FTLE-33. This is a zero cost site for FY17.

CLEANUP/EXIT STRATEGY

Implement and maintain LUCs to prevent residential housing on the site and restrict use of the steep hillside portion of the site.

Site ID: MF-ALGT-LF-05
Site Name: American Lake Garden Tract
Alias: LF005

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA.....	198205.....	198208
SI.....	198705.....	198708
RI/FS.....	199003.....	199103
RD.....	199109.....	199212
RA(C).....	199302.....	199402
RA(O).....	199402.....	204403

RIP Date: 199402

RC Date: 204403

SITE DESCRIPTION

MF-ALGT-LF-05 was placed on the USEPA NPL in 1984. The Air Force, the USEPA and the WSDOE entered into a FFA, effective Oct. 23, 1989 and a ROD, effective Sept. 19, 1991. The NPL included AEDB-R sites: MF-LF-004, MF-LF-005, MF-LF-006, MF-LF-007, MF-OT-026, MF-RW-035, and MF-OT-039. During the subsequent RI, site MF-LF-005 was determined to be the principal contributor to groundwater contamination with MF-LF-007 and MF-OT-039 being potential contributors. Contaminants included TCE and cis-1,2-dichloroethene (cis-DCE) concentrations in the groundwater that were found to exceed allowable limits. A groundwater P&T system was installed and has been under continuous operation since February 1994. It was estimated that the system will run for 50 years per the ROD. The system utilizes granular activated carbon to remove the organic contaminants from the groundwater emanating from sites MF-LF-005 and MF-OT-039, which are now located under the base golf course.

Landfill 5 (MF-LF-005) was a major base landfill from 1951 until 1961. A waste oil burn pit was operated at the site from 1952 to 1964. The landfill also had a concrete trench used for burning liquid wastes, reportedly including POL, solvents and fuels. Open burning was conducted until the landfill was closed. A TCE plume extended approximately 1,500 feet downgradient and was approximately 400 feet wide as of September 2002. The plume has been steadily shrinking as a result of groundwater treatment. In 2010 a pilot project was conducted to determine if bioremediation is a viable alternative to reduce remaining TCE concentrations to cleanup levels. Results were favorable.

In 2011 a LUC plan was implemented that restricts excavation in site landfills and construction of water wells without state or USEPA approval. LUCs for all of McChord Field are tracked under MF-ALGT-LF-05 and include: MF-SS-34, MF-SS-34N, MF-DP-60, MF-OT-039, MF-LF-004, MF-LF-006, MF-LF-007, MF-WP-44, and MF-SD-054.

A five-year review was conducted for MF-ALGT-LF-05 in 2012. Recommendations of the review are:

- 1) Continue to evaluate alternatives to reduce source term and enhance dissolved plume remediation, including verifying that the source area conceptual model is correct.
- 2) Examine cleanup goals and other risk based comparison values for groundwater to be sure monitoring is addressing appropriate contaminants and monitoring goals.

Five-year review costs for the site are captured under FTLE-33.

In 2013, an Army funded research pilot test was initiated that will evaluate the feasibility of using reactive barrier technology at the site.

CLEANUP/EXIT STRATEGY

In addition to implementing the five-year review recommendations, JBLM will conduct O&M, groundwater sampling at the P&T system, and implement LUCs.

Site ID: MF-DP-60

Site Name: Floating Fuel at Washrack/Treatment

Alias: DP060

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

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

Media of Concern: Groundwater

Phases	Start	End
PA.....	198008.....	198208
SI.....	198505.....	198708
RI/FS.....	199206.....	199207
RA(C).....	199409.....	199409
RA(O).....	199409.....	204603

RIP Date: 199409

RC Date: 204603

SITE DESCRIPTION

Site MF-DP-60 is part of the WTA NPL site, which is located in the northern industrial and operational portion of McChord Field along the western edge of the runway. Site MF-DP-60 includes the storm drainage infiltration ditches (now backfilled) and fuel floating on the shallow groundwater just north of Building 1197, the jet engine test facility.

Floating fuel underlying about 300,000 square feet of the WTA was identified in the RI and previous studies. However, the FS indicated the fuel was not migrating off-site and was prevented from impacting drinking water sources by the Vashon Till aquitard. Results from the RI and the baseline risk assessment indicated that no CERCLA RA was necessary for soil, surface water or sediments.

A remedial design (RD) pilot study was completed in 1994 to evaluate the selected alternative in the ROD, which was passive skimming of the floating fuel. The pilot study concluded that passive removal of the floating fuel was not feasible because of the limited amount of fuel present. The original investigations had overestimated the volume of fuel present. The pilot study also concluded that the site will biodegrade without additional RA.

An ESD was issued on Sept. 9, 1994 that implemented changes to the ROD remedy. The ESD indicated that natural bioremediation of the floating fuel was occurring and would be allowed to continue, i.e., natural attenuation was the selected remedy. Long-term monitoring [RA(O)] was implemented in 1994.

On Sept. 26, 1996 the WTA (including MF-DP-060) was deleted from the NPL; however, it was included in the Washington State Hazardous Site List. Under the terms of the ESD, MF-DP-060 site continues to be monitored. Monitoring costs for nearby MF-SD-054 are also included with DP-60.

The highest concentration of TPH-D detected in samples collected during the June 2015 sampling event was 1,900 ug/L. The TPH-D cleanup level at the site is 1,000 ug/L.

LUCs are in effect at this site, and include residential and groundwater use restrictions. Costs for LUC management are captured in site MF-ALGT-LF-05's CTC. Costs for five-year reviews are captured in site FTLE-33's CTC.

CLEANUP/EXIT STRATEGY

Continue groundwater sampling to monitor natural attenuation until state cleanup levels are met.

Site ID: MF-LF-004
Site Name: LANDFILL D-4
Alias: LF004

STATUS

Regulatory Driver: CERCLA

RRSE:

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA.....	198008.....	198208
SI.....	198705.....	198708
RI/FS.....	198801.....	199109
LTM.....	199109.....	204603

RIP Date: N/A

RC Date: 199109

SITE DESCRIPTION

MF-LF-004 is a former landfill that was used as a burial site for domestic and industrial or construction wastes from 1958 to 1978. The site is situated west of Porter Hills near base housing. The site was reported to have been the location of a gravel pit used sporadically from 1941 to 1958. Site MF-LF-004 is one of seven sites included in the ALGT/Area D NPL. A ROD for the ALGT/Area D sites was issued in September 1991. The ROD states that the "levels of contamination in the soil, surface water, and sediment will not result in unacceptable exposure to hazardous substances."

The WSDOE maintains this site on the Hazardous Sites List. Because this site is a former landfill, LUCs restricting use have been implemented. Cost for LUCs are captured under MF-ALGT-LF-05.

CLEANUP/EXIT STRATEGY

Maintain LUCs. Evaluate whether site should be removed from the NPL.

Site ID: MF-LF-006
Site Name: BASE LANDFILL, D6
Alias: LF006

STATUS

Regulatory Driver: OTHER

RRSE:

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA.....	198205.....	198208
SI.....	198705.....	198708
RI/FS.....	199012.....	199109
LTM.....	199401.....	204503

RIP Date: N/A

RC Date: 199401

SITE DESCRIPTION

MF-LF-006 is a closed construction debris landfill and borrow pit opened in the early-1960s. Between 1986 and 2009 the landfill operated under a Solid Waste Permit issued by the Tacoma-Pierce County Department of Public Health. The complete extent of the landfill is not known. The site is one of seven sites included in the ALGT/Area D NPL site. Quarterly groundwater sampling rounds were conducted at the site wells over a one-year period. No organics were detected which exceed current MCLs or state cleanup levels. The ROD states that the "levels of contamination in the soil, surface water, and sediment will not result in unacceptable exposure to hazardous substances."

The WSDOE lists this site as part of the Area D/ALGT NPL Site. Post landfill closure monitoring for the county solid waste permit ended in 2010. However, because this site is a former landfill, LUCs restricting use have been formally implemented. Costs for LUCs are captured under MF-ALGT-LF-05.

CLEANUP/EXIT STRATEGY

Maintain LUCs. Evaluate whether site should be removed from the NPL.

Site ID: MF-LF-007
Site Name: BASE LANDFILL, D7
Alias: LF007

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA.....	198205.....	198208
SI.....	198705.....	198708
RI/FS.....	199012.....	199112
RA(C).....	199303.....	199403
RA(O).....	199403.....	204603

RIP Date: 199403

RC Date: 204603

SITE DESCRIPTION

MF-LF-007 is one of seven sites included in the ALGT NPL. The site is located under the 17th fairway of the Base Whispering Firs Golf Course at the eastern end of the ALGT/Area D NPL site. Landfill activities were reported to have occurred from 1967 until 1972. Numerous types of wastes were reported to have been disposed of at the site including industrial, domestic, and construction wastes. Open burning occurred at this site until 1972. Sample results indicate some concentrations of vinyl chloride, methylene chloride and 1,1-DCE analytes exceeded state MTCA Method B cleanup standards. Because of its proximity to Landfill 5, the site may be a contributor to the ALGT plume emanating from MF-ALGT-LF-005.

In addition to the NPL, the WSDOE maintains this site on the Hazardous Sites List and includes it in the Area D/ALGT NPL. Because this site is a former landfill, LUCs restricting use have been formally implemented through the ALGT LUC plan. LUC costs are captured in MF-ALGT-LF-05.

CLEANUP/EXIT STRATEGY

Maintain LUCs.

Site ID: MF-OT-039
Site Name: CONCRETE BURN TRENCH
Alias: OT039

STATUS

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

Phases	Start	End
PA.....	198008.....	198208
SI.....	198705.....	198708
RI/FS.....	198903.....	199103
RA(C).....	199303.....	199403
RA(O).....	199403.....	204603
RIP Date:	199403	
RC Date:	204603	

SITE DESCRIPTION

MF-OT-039 Old Burn Trench, is one of seven sites listed on the ALGT NPL. The site is located beneath the 10th fairway of the base golf course in the center of Area D. The site is immediately southeast of the golf course driving range which covers the adjacent site MF-LF-005 Landfill with its waste oil burn pit. Reports indicated that this site was a concrete trench where waste fuels, solvents, and POL were burned for four years during the 10-year period site MF-LF-005 operated. Waste oil burn pit activities occurred from the mid-1950s until 1960. Approximately 50 to 100 gallons per week of potentially hazardous materials were burned during this period. RI activities began in February 1989. The final round of groundwater sampling occurred in August 1990. Quarterly groundwater sampling rounds were conducted at the site wells over a one-year period. No organic analytes were detected which exceeded MCLs. An exceedance of MTCA Method B cleanup standards was reported for methylene chloride, but the result was not verified in other sampling rounds for that well.

MF-OT-039 is also listed on the WSDOE Hazardous Sites List as a component of the Area D/ALGT NPL. LUCs have been implemented at this site to restrict residential use. The LUCs are administered through the McChord Field LUC plan. Costs are captured under site MF-ALGT-LF-05.

CLEANUP/EXIT STRATEGY

Maintain LUCs.

Site ID: MF-SD-054
Site Name: LEACH PITS AT WTA NPL SITE
Alias: SD054

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

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

Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	198008.....	198208
SI.....	198508.....	198708
RI/FS.....	199107.....	199207
RA(C).....	199209.....	199309
RA(O).....	199309.....	204609

RIP Date: 199309

RC Date: 204609

SITE DESCRIPTION

MF-SD-054, WTA is located within the north industrial portion of the base along the western portion of the instrument runway. The site includes a former washrack (now inactive), two leach pits (now backfilled), oil/water separator (skimmer), and storm drainage infiltration ditches (now backfilled). The WTA was listed on the NPL in 1987 under CERCLA as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986. The USEPA, WSDOE and the Air Force have executed an FFA under Section 120 of CERCLA. A ROD was signed on Sept. 30, 1992. Contaminants in the leach pit soil were not found to present a risk to human health and the environment according to CERCLA guidance, but are at levels of concern according to the state MTCA. At the time the ROD was written, an agreement was reached between USEPA, the WSDOE and the Air Force that site MF-SD-054 would be included in LTM and no further active remedial action would be required. This decision is detailed in the McChord Field WTA ROD.

An ESD to the ROD was issued by the USEPA on Sept. 9, 1994 which identified natural attenuation as the selected remedy. The site is currently being sampled on an annual basis as part of the base-wide LTM. The site is on the WSDOE hazardous sites list.

Monitoring costs for this site are being captured under MF-DP-60.

[See MF-DP-60.]

CLEANUP/EXIT STRATEGY

Continue monitoring until state cleanup levels are achieved.

Site ID: MF-SS-34
Site Name: Spill Site Beside POL Storage Area
Alias: SS034

STATUS

Regulatory Driver: OTHER

RRSE: LOW

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

Media of Concern: Groundwater

Phases	Start	End
PA.....	198008.....	198208
SI.....	199301.....	199401
RI/FS.....	199301.....	199401
RA(C).....	199406.....	199509
RA(O).....	199509.....	204603

RIP Date: 199509

RC Date: 204603

SITE DESCRIPTION

MF-SS-34 is a one-acre bulk fuel storage area located on the northwest side of McChord Field near the western base boundary. The site was reportedly used from 1956 to 1982 for disposal of fuel tank sludge, jet propellant (JP)-4 and leaded fuel. Spills (approximately 300 to 500 gallons each) were reported to have occurred in the past. It was first identified in 1992 and has been monitored continuously since that time. Contaminants include total petroleum hydrocarbons (TPH) gasoline, and diesel range (TPH-G and TPH-D) and benzene, toluene, ethylbenzene and xylenes (BTEX) in groundwater. Evaluation of MNA parameters in 1995 indicated that fuel in groundwater at the site is actively being degraded by biological processes. The site is being monitored on an annual basis as part of the base-wide long-term monitoring program. During the March 2015 sampling event the highest concentrations of site contaminants of concern were: TPH-G at 190 ug/L, TPH-D at 280 ug/L, and TPH-O at 150 ug/L. Benzene, toluene, ethylbenzene and xylenes were not detected in any samples.

LUCs are in effect at this site, and include residential and groundwater use restrictions. Costs for LUC management are captured in site MF-ALGT-LF-05's CTC. Costs for five-year reviews are captured in site FTLE-33's CTC.

CLEANUP/EXIT STRATEGY

Conduct MNA until state cleanup levels are achieved.

Site ID: MF-SS-34N
Site Name: TCE Cantonment Area Spill Site
Alias: SS034

STATUS

Regulatory Driver: OTHER

RRSE: LOW

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA.....	198008.....	198208
SI.....	199301.....	200101
RI/FS.....	200010.....	200309
RD.....	200309.....	200403
IRA.....	200206.....	200306
RA(C).....	200404.....	200404
RA(O).....	200404.....	201909
LTM.....	201910.....	202209

RIP Date: 200404

RC Date: 201909

SITE DESCRIPTION

Site 34N is a three-acre TCE spill site located on the northwestern boundary of JBLM-McChord Field near Building 1104. The site is a non-NPL CERCLA site discovered in 1999. Currently the WSDOE is the regulatory agency for the site, and has included it on the state's Hazardous Sites List. Historic maps show more than 20 dormitories/dining facilities were located in the area. TCE was first detected in 1993, but a discrete source of TCE contamination was not identified. Presumably the contamination resulted from multiple, small volume surface spills. The plume extends approximately 1500 feet in length with an average width of 350 to 400 feet.

Full-scale potassium permanganate treatment began in 2004 with injection into the shallow aquifer via a network of 32 injection wells. Five injections at the base boundary have reduced TCE concentrations to the cleanup levels in most of the wells. Two injections have been completed for the Springbrook area. One injection is scheduled to take place in the base boundary wells during 2015. Based on the response of the base boundary system it is assumed that two more injections will be required in Springbrook to take place in 2017 and 2019. Based on WSDOE's guidance for determining compliance with groundwater cleanup standards, monitoring wells will be sampled for three more years following the last injection event in 2019. Monitoring will continue through calendar year (CY)22.

LUCs are in effect for this site and include restrictions on groundwater use. LUC costs for MF-SS-34N are included in site MF-ALGT-LF-05. Five-year review costs are tracked under site FTLE-33.

CLEANUP/EXIT STRATEGY

Conduct up to three additional chemical oxidation injections to reduce TCE concentrations to meet state cleanup levels; continue groundwater monitoring until cleanup levels are achieved.

Site ID: MF-WP-44
Site Name: Vehicle Maintenance Leach Pit
Alias: WP044

STATUS

Regulatory Driver: OTHER

RRSE: LOW

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

Media of Concern: Groundwater

Phases	Start	End
PA.....	198008.....	198208
SI.....	199301.....	199401
RI/FS.....	199401.....	199405
IRA.....	200002.....	200212
RA(C).....	200212.....	200212
RA(O).....	200212.....	204603

RIP Date: 200212

RC Date: 204603

SITE DESCRIPTION

MF-WP-44 site occupies approximately 11-acres and is used as the vehicle maintenance and repair facility for Air Force vehicles. The site is bounded on the north by Battery Drive, on the south by 5th Street, on the west by A Street, and on the east by 4th Street. It consists of 13 buildings used for vehicle maintenance/repair and washing. The site is almost entirely paved.

In February 2000, McChord AFB excavated and recycled 427 tons of petroleum-contaminated soils associated with an inactive dry well near Building 779. Excavation, dry well removal, and soil sampling were completed on Dec. 18, 2002.

Examination of historic information and inspection of the site indicates no further remediation is necessary except for groundwater monitoring. The site is included in the basewide long-term monitoring program (RA(O)). An Air Force DD recommending NFA was issued in February 1996. The WSDOE is the regulating agency for MF-WP-44. The site is listed on the WSDOE Hazardous Sites List.

The site contaminants of concern are TPH-G and TPH-D, and BTEX. During the March 2015 sampling event the highest concentrations of these compounds detected in samples were: TPH-G at 110 ug/L, TPH-D at 2,700 ug/L, benzene at 0.1 ug/L, and toluene at 0.01 ug/L. Ethylbenzene and xylenes weren't detected.

Costs for LUC management are captured in site MF-ALGT-LF-05's CTC. Five-year review costs are captured in site FTLE-33's CTC.

CLEANUP/EXIT STRATEGY

Continue natural attenuation monitoring until state cleanup levels are achieved.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FTLE-01	BUILDING 9580 (MAINTENANCE)	198309	Active RCRA facility; not eligible for ER,A funding
FTLE-02	HANGAR 3039 (MAINTENANCE)	198309	Active RCRA facility; not eligible for ER,A funding
FTLE-03	PHOTO SECT (BLDG. 5208)	199706	Active RCRA facility; not eligible for ER,A funding
FTLE-10	STORM WATER OUTFALLS	199909	Covered under a NPDES MS4 permit, not eligible for ER,A funding
FTLE-11	MAMC HEALTH PHYSICS OFFICE (BLDG 9909C)	198309	Active RCRA facility; not eligible for ER,A funding
FTLE-12	MAMC INCINERATOR (BLDG. 3152)	199703	Site closed under RCRA; not eligible for ER,A funding
FTLE-13	HOBBY PHOTO LAB (BLDG. 5308)	198309	Active RCRA facility; not eligible for ER,A funding
FTLE-15	BUILDING 9500	198309	Active RCRA facility; not eligible for ER,A funding
FTLE-17	OLD FIRE FIGHTING TRAINING PIT	200212	DEC 2000 Decision Document
FTLE-18	PARK MARSH LANDFILL	200604	APR 2006 Decision Document
FTLE-19	SMALL ARMS FIRING RANGES	198309	Located in operational range area; not eligible for ER,A funding
FTLE-20	ARTILLERY IMPACT AREA	198309	Located in operational range area; not eligible for ER,A funding
FTLE-21	MORTAR RANGES	198309	Located in operational range area; not eligible for ER,A funding
FTLE-26	OLD RECYCLING SEPARATION BUILDING #1214	199606	No evidence of a release. Building was deconstructed.
FTLE-29	BLDG 9570 (WEAPONS REPAIR/ INDOOR)RANGE	199706	Active test-fire range. Not eligible for ER,A funding.
FTLE-30	BUILDING 9507 (TRANSFORMER STORAGE)	200112	1997 RFA. Bldg 9507 was deconstructed.
FTLE-34	BUILDING 9556 (HAZ MAT STORAGE)	199703	MAR 1997 TSDF clean closure verification by WSDOE
FTLE-35	BUILDING 9557 (HAZ MAT STORAGE)	199703	MAR 1997 TSDF clean closure verification by WSDOE
FTLE-36	BUILDING 9558 (HAZ MAT STORAGE)	199703	MAR 1997 TSDF clean closure verification by WSDOE
FTLE-38	MOBILITY FUEL TANKS - (BLDG. 4176)	198309	Not eligible for ER,A funding
FTLE-40	MIXED WASTE STORAGE (BLDG. S9749)	199812	Certified clean closed by WSDOE in 2011; no funding required.
FTLE-41	WASTEWATER TREATMENT PLANT (BLDG 7500)	198309	Operates under an active NPDES permit; not eligible for ER,A funding
FTLE-44	BUILDING 9513 (RAD STORAGE)	198309	Regulated by Nuclear Regulatory Commission; not eligible for ER,A funding
FTLE-47	BUILDING 3034 (UST)	198309	Not eligible for ER,A funding
FTLE-49	BUILDING 9589 (BATTERY SHOP)	198309	Active RCRA site;not eligible for ER,A funding
FTLE-53	OLD VEHICLE WASHRACK(S)	198309	Covered under NPDES permit; not eligible for ER,A funding
FTLE-56	LANDFILL 3	200406	1986 RFA
FTLE-58	LANDFILL 5	200308	NFA ROD in 1992. Delisted from NPL in 1995. Currently in post-closure monitoring as Compliance Restoration site CC-FL23.
FTLE-59	LANDFILL 6	200609	FEB 2007 Decision Document

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FTLE-60	LANDFILL 7 (CONSTRUCTION RUBBLE)	198309	1986 RFA
FTLE-61	LANDFILL 8 (CONSTRUCTION RUBBLE)	198309	1986 RFA
FTLE-63	LANDFILL 10 (CONSTRUCTION DEBRIS)	198309	1986 RFA
FTLE-66	(2) UST (NEVADA & 41ST DIVISION)	200112	1986 RFA
FTLE-67	LANDFILL 2	200206	Administratively combined with FTLE-33
FTLE-69	OLD EXPLOSIVE ORDNANCE DEMOLITION SITE	200506	09 JUN 05 Memo from Rich Wilson. Located in the operational range area.
FTLE-70	UNDERGROUND GAS SUPPLY PIPING	199211	Removal action was completed with OMA funds; no further action required.
FTLE-71	VEHICLE WASHRACKS	200109	Not eligible for ER,A funding
FTLE-72	EMERGENCY FUEL USTS	198309	Not eligible for ER,A funding
FTLE-74	ENGINEER BLUFF	200711	OCt 2007 letter from Fort Lewis to WSDOE and NOV 2007 response letter from WSDOE
FTLE-75	UNDERGROUND GASOLINE PIPELINE	200610	AUG 2006 Cleanup Action Report
MF-DP-008	ASH BURIAL SITE	199012	Air Force issued a NFA DD on 10 JUL 90. State Department of Ecology concurred on 12 DEC 90.
MF-DP-009	BRICK & FLOOR BURIAL SITE	199012	NFA DD issued JUL 1990. State Department of Ecology concurred on 12 DEC 90
MF-DP-018	CAUSTIC SODA PIT	199012	NFA DD issued JUL 1990. State Department of Ecology concurred on 12 DEC 90
MF-DP-036	CIVIL ENGINEERING YARD DRAINAGE DIT	199501	NFA DD issued in AUG 1994. State Department of Ecology concurred on 28 JUN 95.
MF-DP-061	ACID DRY WELL BETWEEN BLDG745&CREEK	200212	Ari Force issued a NFA DD in AUG 1993. State Department of Ecology concurred on 10 MAY 10.
MF-FT-027	FIRE TRAINING, H27	199308	Air Force NFA DD issued in AUG 1993. State Department of Ecology concurred on 28 JUN 95.
MF-FT-028	OLD FIRE TRAINING SITE, FT-28	199308	Air Force issued NFA DD in AUG 1993. State Department of Ecology concurred on 28 JUN 95.
MF-FT-029	OLD FIRE TRAINING AREA	199012	Air Force issued NFA DD in JUL 1990. State Department of Ecology concurred on 12 DEC 90.
MF-FT-030	FIRE TRAINING, F30	199308	Air Force issued NFA DD in AUG 1993. State Department of Ecology concurred on 28 JUN 95.
MF-FT-031	FIRE TRAINING, F31	199310	Air Force issued NFA DD in AUG 1993. State Department of Ecology concurred on 28 JUN 95.
MF-FT-032	FUEL SPILL FTA, SITE 32	199401	Air Force issued a NFA DD in AUG 1993. State Department of Ecology concurred on 27 JAN 94.
MF-FT-033	FUEL SPILL FTA, SITE 33	199401	Air Force issued a NFA DD in AUG 1993. State Department of Ecology concurred on 27 JAN 94 and 28 JUN 95.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
MF-LF-001	LANDFILL 1, CONSTRUCTION DEBRIS.	201005	Air Force issued a NFA DD on 1 FEB 96. Ecology concurred on 10 MAY 10. Site removed from state hazardous sites list in JUN 2010.
MF-LF-002	BASE LANDFILL, A02	199308	Air Force issued a NFA DD on 25 AUG 93. Ecology concurred on 10 MAY 10. Site removed from state hazardous sites list in JUN 2010.
MF-LF-010	BASE LANDFILL, E10	199401	Air Force issued a NFA DD on 25 AUG 93. Ecology concurred on 27 JAN 94 and 28 JUN 95.
MF-LF-011	NON-INDUSTRIAL LANDFILL	199012	Air Force issued a NFA DD in JUL 1990. State Department of Ecology concurred on 12 DEC 90.
MF-LF-012	BASE LANDFILL 12	199401	Air Force issued a NFA DD on 25 AUG 93. Ecology concurred on 27 JAN 94 and 28 JUN 95.
MF-LF-013	BASE LANDFILL SITE #13	199401	Air Force issued a NFA DD on 25 AUG 93. Ecology concurred on 27 JAN 94 and 28 JUN 95.
MF-LF-014	NON-INDUSTRIAL LANDFILL	199012	Air Force issued a NFA DD on 10 JUL 90. Ecology concurred on 12 DEC 90.
MF-LF-015	DEMOLITION DUMP	199012	Air Force issued a NFA DD on 10 JUL 90. Ecology concurred on 12 DEC 90.
MF-LF-016	EQUIPMENT BURIAL SITE	199012	Air Force issued a NFA DD on 10 JUL 90. Ecology concurred on 12 DEC 90.
MF-LF-017	NON-INDUSTRIAL LANDFILL	199012	Air Force issued a NFA DD on 10 JUL 90. Ecology concurred on 12 DEC 90.
MF-LF-019	NON-INDUSTRIAL LANDFILL	199012	Air Force issued a NFA DD on 10 JUL 90. Ecology concurred on 12 DEC 90.
MF-LF-020	NON-INDUSTRIAL LANDFILL	199012	Air Force issued a NFA DD in JUL 90. State Department of Ecology concurred on 12 DEC 90.
MF-LF-021	NON-INDUSTRIAL LANDFILL	199012	Air Force issued a NFA DD on 10 JUL 90. Ecology concurred on 12 DEC 90.
MF-LF-022	VEHICLE MAINTENANCE, 122	199310	Air Force issued a NFA DD on 02 APR 91. Ecology concurred on 12 DEC 90.
MF-LF-023	NON-INDUSTRIAL LANDFILL	199007	Air Force issued a NFA DD in JUL 90. State Department of Ecology concurred on 12 DEC 90.
MF-LF-024	PAVEMENT SWEEPINGS DUMP	199007	Air Force issued a NFA DD in JUL 1990. State Department of Ecology concurred on 12 DEC 90.
MF-LF-025	PAVEMENT SWEEPINGS DUMP	199007	Air Force issued a NFA DD in JUL 1990. State Department of Ecology concurred on 12 DEC 90.
MF-OT-026	ORDNANCE DISPOSAL - BURN KETTLES	199110	Air Force Issued NFA DD 25 SEP 91. Site is still listed by USEPA in ALGT ROD. Site cleared under MMRP see site MF-004-R-01.
MF-RW-003	RADIOACTIVE BURIAL PIT	199012	Air Force issued a NFA DD in JUL 1990. State Department of Ecology concurred on 12 DEC 90.
MF-RW-035	RADIOACTV DSPSL PIT, SITE 35	200501	Air Force issued a NFA DD with respect to Nuclear Regulatory Commission on 12

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			MAY 08.
MF-SD-053	DRAINAGE DITCH, SD53	199401	Air Force issued a NFA DD in AUG 1993. State Department of Ecology concurred on 27 JAN 94 and 28 JUN 95.
MF-SS-037	POL/SPILL DISPOSAL, C37	199401	Air Force issued a NFA DD in AUG 1993. State Department of Ecology concurred on 27 JAN 94 and 28 JUN 95.
MF-SS-038	POL SPILL/DISPOSAL, B38	199401	Air Force issued a NFA DD in AUG 1993. State Department of Ecology concurred on 27 JAN 94 and 28 JUN 95.
MF-SS-040	MOTOR POOL SPILL SITE	199401	Air Force issued a NFA DD in AUG 1993. State Department of Ecology concurred on 27 JAN 94 and 28 JUN 95.
MF-SS-042	FUEL SPILL, C42	199308	Air Force issued a NFA DD in AUG 1993. State Department of Ecology concurred on 27 JAN 94 and 28 JUN 95.
MF-SS-043	POL DISPOSAL SITE	199012	Air Force issued a NFA DD JUL 90. State Department of Ecology concurred on 12 DEC 90.
MF-SS-045	OLD FUEL SPILL SITE	199104	State Department of Ecology issued a NFA letter on 12 DEC 90.
MF-SS-046	JP-4 SPILL, A46	199401	Air Force issued a NFA DD in AUG 1993. State Department of Ecology concurred on 27 JAN 94 and 28 JUN 95.
MF-SS-049	SPILL SITE AT SOUTH END OF BLDG 342	199401	Air Force issued a NFA DD in AUG 1993. State Department of Ecology concurred on 27 JAN 94 and 28 JUN 95.
MF-SS-050	FUEL SPILL, E50	199401	Air Force issued a NFA DD in AUG 1993. State Department of Ecology concurred on 27 JAN 94 and 28 JUN 95.
MF-SS-051	FUEL SPILL, E51	199401	Air Force issued a NFA DD in AUG 1993. State Department of Ecology concurred on 27 JAN 94 and 28 JUN 95.
MF-SS-052	POL SPILL, B52	199401	Air Force issued a NFA DD in AUG 1993. State Department of Ecology concurred on 27 JAN 94 and 28 JUN 95.
MF-SS-055	SURFACE SPILL AREA, SS-55	199401	Air Force issued a NFA DD in AUG 1993. State Department of Ecology concurred 27 JAN 94.
MF-SS-059	FUEL SPILL, SITE 59	199012	Air Force issued a NFA DD in JUL 1990. State Department of Ecology concurred on 12 DEC 90.
MF-SS-063	BLDG 792/1173 SPILL SITE	199012	Air Force issued a NFA DD in JUL 1990. State Department of Ecology concurred on 12 DEC 90.
MF-ST-041	FUEL SPILL, B41	199401	Air Force issued a NFA DD in AUG 1993. State Department of Ecology concurred on 27 JAN 94 and 28 JUN 95.
MF-ST-047	FUEL SPILL, B47	199401	Air Force issued a NFA DD in AUG 1993. State Department of Ecology concurred on 27 JAN 94 and 28 JUN 95.
MF-ST-048	PCP TANK SPILL, J48	199310	Air Force issued a NFA DD in AUG 1993. State Department of Ecology concurred on 28 JUN 95.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
MF-ST-056	SEPTIC TANK, 56	199012	Air Force issued a NFA DD on 10 JUL 90. State Department of Ecology concurred on 12 DEC 90.
MF-ST-065	22 TANKS IN 7 LOCATIONS	199308	Air Force issued a NFA DD on 25 AUG 93.
MF-WP-057	LEACH PIT, C57	199401	Air Force issued a NFA DD in AUG 1993. State Department of Ecology concurred on 27 JAN 94 and 28 JUN 95.
MF-WP-058	WASTE DISPOSAL PIT, 58	199401	Air Force issued a NFA DD in AUG 1993. State Department of Ecology concurred on 27 JAN 94 and 28 JUN 95.
MF-WP-062	LEACHING AREA, C62	199401	Air Force issued a NFA DD in AUG 1993. State Department of Ecology concurred on 27 JAN 94 and 28 JUN 95.
MF-WP-064	WASTE PIT AT ENTOMOLOGY SHOP	200806	State Department of Ecology issued a NFA determination on 10 MAY 10.
PBC@FortLewis	PBC at Fort Lewis	201303	All contracts have been completed.

IRP Schedule

Date of IRP Inception: 198008

Past Phase Completion Milestones

1982

PA (MF-ALGT-LF-05 - American Lake Garden Tract, MF-DP-008 - ASH BURIAL SITE, MF-DP-009 - BRICK & FLOOR BURIAL SITE, MF-DP-018 - CAUSTIC SODA PIT, MF-DP-036 - CIVIL ENGINEERING YARD DRAINAGE DIT, MF-DP-061 - ACID DRY WELL BETWEEN BLDG745&CREEK, MF-DP-60 - Floating Fuel at Washrack/Treatment, MF-FT-027 - FIRE TRAINING, H27, MF-FT-028 - OLD FIRE TRAINING SITE, FT-28, MF-FT-029 - OLD FIRE TRAINING AREA, MF-FT-030 - FIRE TRAINING, F30, MF-FT-031 - FIRE TRAINING, F31, MF-FT-032 - FUEL SPILL FTA, SITE 32, MF-FT-033 - FUEL SPILL FTA, SITE 33, MF-LF-001 - LANDFILL 1, CONSTRUCTION DEBRIS., MF-LF-002 - BASE LANDFILL, A02, MF-LF-004 - LANDFILL D-4, MF-LF-006 - BASE LANDFILL, D6, MF-LF-007 - BASE LANDFILL, D7, MF-LF-010 - BASE LANDFILL, E10, MF-LF-011 - NON-INDUSTRIAL LANDFILL, MF-LF-012 - BASE LANDFILL 12, MF-LF-013 - BASE LANDFILL SITE #13, MF-LF-014 - NON-INDUSTRIAL LANDFILL, MF-LF-015 - DEMOLITION DUMP, MF-LF-016 - EQUIPMENT BURIAL SITE, MF-LF-017 - NON-INDUSTRIAL LANDFILL, MF-LF-019 - NON-INDUSTRIAL LANDFILL, MF-LF-020 - NON-INDUSTRIAL LANDFILL, MF-LF-021 - NON-INDUSTRIAL LANDFILL, MF-LF-022 - VEHICLE MAINTENANCE, 122, MF-LF-023 - NON-INDUSTRIAL LANDFILL, MF-LF-024 - PAVEMENT SWEEPINGS DUMP, MF-LF-025 - PAVEMENT SWEEPINGS DUMP, MF-OT-026 - ORDNANCE DISPOSAL - BURN KETTLES, MF-OT-039 - CONCRETE BURN TRENCH, MF-RW-003 - RADIOACTIVE BURIAL PIT, MF-RW-035 - RADIOACTV DSPSL PIT, SITE 35, MF-SD-053 - DRAINAGE DITCH, SD53, MF-SD-054 - LEACH PITS AT WTA NPL SITE, MF-SS-037 - POL/SPILL DISPOSAL, C37, MF-SS-038 - POL SPILL/DISPOSAL, B38, MF-SS-040 - MOTOR POOL SPILL SITE, MF-SS-042 - FUEL SPILL, C42, MF-SS-043 - POL DISPOSAL SITE, MF-SS-045 - OLD FUEL SPILL SITE, MF-SS-046 - JP-4 SPILL, A46, MF-SS-049 - SPILL SITE AT SOUTH END OF BLDG 342, MF-SS-050 - FUEL SPILL, E50, MF-SS-051 - FUEL SPILL, E51, MF-SS-052 - POL SPILL, B52, MF-SS-055 - SURFACE SPILL AREA, SS-55, MF-SS-059 - FUEL SPILL, SITE 59, MF-SS-063 - BLDG 792/1173 SPILL SITE, MF-SS-34 - Spill Site Beside POL Storage Area , MF-SS-34N - TCE Cantonment Area Spill Site, MF-ST-041 - FUEL SPILL, B41, MF-ST-047 - FUEL SPILL, B47, MF-ST-048 - PCP TANK SPILL, J48, MF-ST-056 - SEPTIC TANK, 56, MF-ST-065 - 22 TANKS IN 7 LOCATIONS, MF-WP-057 - LEACH PIT, C57, MF-WP-062 - LEACHING AREA, C62, MF-WP-064 - WASTE PIT AT ENTOMOLOGY SHOP, MF-WP-44 - Vehicle Maintenance Leach Pit)

1983

PA (FTLE-10 - STORM WATER OUTFALLS, FTLE-11 - MAMC HEALTH PHYSICS OFFICE (BLDG 9909C), FTLE-16 - BATTERY ACID PIT, FTLE-28 - PESTICIDE RINSE AREA - BUILDING 2054, FTLE-31 - DRMO YARD, FTLE-32 - SOLVENT REFINED COAL PILOT PLANT, FTLE-33 - LOGISTICS CENTER, FTLE-40 - MIXED WASTE STORAGE (BLDG. S9749), FTLE-41 - WASTEWATER TREATMENT PLANT (BLDG 7500), FTLE-44 - BUILDING 9513 (RAD STORAGE), FTLE-51 - OUTFALL #7/ SETTLING BASIN (BLDG. 9586), FTLE-53 - OLD VEHICLE WASHRACK(S), FTLE-54 - LANDFILL 1, FTLE-56 - LANDFILL 3, FTLE-57 - LANDFILL 4, FTLE-58 - LANDFILL 5, FTLE-59 - LANDFILL 6, FTLE-60 - LANDFILL 7 (CONSTRUCTION RUBBLE), FTLE-61 - LANDFILL 8 (CONSTRUCTION RUBBLE), FTLE-63 - LANDFILL 10 (CONSTRUCTION DEBRIS), FTLE-67 - LANDFILL 2)

ISC (FTLE-38 - MOBILITY FUEL TANKS - (BLDG. 4176), FTLE-47 - BUILDING 3034 (UST), FTLE-72 - EMERGENCY FUEL USTS)

RFA (FTLE-01 - BUILDING 9580 (MAINTENANCE), FTLE-02 - HANGAR 3039 (MAINTENANCE), FTLE-13 - HOBBY PHOTO LAB (BLDG. 5308), FTLE-15 - BUILDING 9500, FTLE-19 - SMALL ARMS FIRING RANGES, FTLE-20 - ARTILLERY IMPACT AREA, FTLE-21 - MORTAR RANGES, FTLE-30 - BUILDING 9507 (TRANSFORMER STORAGE), FTLE-34 - BUILDING 9556 (HAZ MAT STORAGE), FTLE-35 - BUILDING 9557 (HAZ MAT STORAGE), FTLE-36 - BUILDING 9558 (HAZ MAT STORAGE), FTLE-49 - BUILDING 9589 (BATTERY SHOP))

SI (FTLE-31 - DRMO YARD, FTLE-33 - LOGISTICS CENTER, FTLE-51 - OUTFALL #7/ SETTLING BASIN (BLDG. 9586), FTLE-59 - LANDFILL 6, FTLE-67 - LANDFILL 2)

1985

PA (FTLE-46 - ILLICIT PCB DUMP SITE)

IRA (FTLE-46 - ILLICIT PCB DUMP SITE)

1986

RFA (FTLE-62 - LANDFILL 9)

IRP Schedule

1987

SI (MF-ALGT-LF-05 - American Lake Garden Tract, MF-DP-60 - Floating Fuel at Washrack/Treatment, MF-LF-004 - LANDFILL D-4, MF-LF-006 - BASE LANDFILL, D6, MF-LF-007 - BASE LANDFILL, D7, MF-OT-039 - CONCRETE BURN TRENCH, MF-RW-035 - RADIOACTV DSPSL PIT, SITE 35, MF-SD-054 - LEACH PITS AT WTA NPL SITE)

1988

SI (FTLE-58 - LANDFILL 5)
RFA (FTLE-70 - UNDERGROUND GAS SUPPLY PIPING)

1989

PA (FTLE-18 - PARK MARSH LANDFILL)

1990

SI (FTLE-57 - LANDFILL 4)

1991

RI/FS (MF-ALGT-LF-05 - American Lake Garden Tract, MF-LF-004 - LANDFILL D-4, MF-LF-006 - BASE LANDFILL, D6, MF-OT-039 - CONCRETE BURN TRENCH, MF-RW-035 - RADIOACTV DSPSL PIT, SITE 35)

1992

RI/FS (FTLE-58 - LANDFILL 5, MF-DP-60 - Floating Fuel at Washrack/Treatment, MF-LF-007 - BASE LANDFILL, D7, MF-SD-054 - LEACH PITS AT WTA NPL SITE)

1993

RA(C) (MF-SD-054 - LEACH PITS AT WTA NPL SITE)

SI (FTLE-32 - SOLVENT REFINED COAL PILOT PLANT, MF-DP-061 - ACID DRY WELL BETWEEN BLDG745&CREEK, MF-FT-027 - FIRE TRAINING, H27, MF-FT-028 - OLD FIRE TRAINING SITE, FT-28, MF-FT-030 - FIRE TRAINING, F30, MF-FT-031 - FIRE TRAINING, F31, MF-FT-032 - FUEL SPILL FTA, SITE 32, MF-FT-033 - FUEL SPILL FTA, SITE 33, MF-LF-001 - LANDFILL 1, CONSTRUCTION DEBRIS., MF-LF-002 - BASE LANDFILL, A02, MF-LF-010 - BASE LANDFILL, E10, MF-LF-012 - BASE LANDFILL 12, MF-LF-013 - BASE LANDFILL SITE #13, MF-SD-053 - DRAINAGE DITCH, SD53, MF-SS-037 - POL/SPILL DISPOSAL, C37, MF-SS-038 - POL SPILL/DISPOSAL, B38, MF-SS-040 - MOTOR POOL SPILL SITE, MF-SS-042 - FUEL SPILL, C42, MF-SS-046 - JP-4 SPILL, A46, MF-SS-049 - SPILL SITE AT SOUTH END OF BLDG 342, MF-SS-050 - FUEL SPILL, E50, MF-SS-051 - FUEL SPILL, E51, MF-SS-052 - POL SPILL, B52, MF-ST-041 - FUEL SPILL, B41, MF-ST-047 - FUEL SPILL, B47, MF-ST-048 - PCP TANK SPILL, J48, MF-WP-057 - LEACH PIT, C57, MF-WP-058 - WASTE DISPOSAL PIT, 58, MF-WP-062 - LEACHING AREA, C62)

PA (MF-WP-058 - WASTE DISPOSAL PIT, 58)

RD (MF-ALGT-LF-05 - American Lake Garden Tract)

CMI(C) (FTLE-70 - UNDERGROUND GAS SUPPLY PIPING)

ISC (FTLE-66 - (2) UST (NEVADA & 41ST DIVISION))

1994

RI/FS (FTLE-32 - SOLVENT REFINED COAL PILOT PLANT, FTLE-57 - LANDFILL 4, MF-SS-34 - Spill Site Beside POL Storage Area , MF-WP-44 - Vehicle Maintenance Leach Pit)

PA (FTLE-69 - OLD EXPLOSIVE ORDNANCE DEMOLITION SITE)

RA(C) (MF-ALGT-LF-05 - American Lake Garden Tract, MF-DP-60 - Floating Fuel at Washrack/Treatment, MF-LF-007 - BASE LANDFILL, D7, MF-OT-039 - CONCRETE BURN TRENCH)

SI (MF-DP-036 - CIVIL ENGINEERING YARD DRAINAGE DIT, MF-SS-055 - SURFACE SPILL AREA, SS-55, MF-SS-34 - Spill Site Beside POL Storage Area , MF-WP-064 - WASTE PIT AT ENTOMOLOGY SHOP, MF-WP-44 - Vehicle Maintenance Leach Pit)

1995

CS (FTLE-34 - BUILDING 9556 (HAZ MAT STORAGE), FTLE-35 - BUILDING 9557 (HAZ MAT STORAGE), FTLE-36 - BUILDING 9558 (HAZ MAT STORAGE))

RD (FTLE-32 - SOLVENT REFINED COAL PILOT PLANT)

IRP Schedule

RA(C)	(MF-SS-34 - Spill Site Beside POL Storage Area)
SI	(FTLE-69 - OLD EXPLOSIVE ORDNANCE DEMOLITION SITE)
1996	
RD	(FTLE-57 - LANDFILL 4)
RFA	(FTLE-26 - OLD RECYCLING SEPARATION BUILDING #1214)
RA(C)	(FTLE-57 - LANDFILL 4)
CS	(FTLE-62 - LANDFILL 9)
1997	
PA	(FTLE-17 - OLD FIRE FIGHTING TRAINING PIT)
IMP(C)	(FTLE-66 - (2) UST (NEVADA & 41ST DIVISION))
RI/FS	(FTLE-31 - DRMO YARD)
RFA	(FTLE-03 - PHOTO SECT (BLDG. 5208), FTLE-12 - MAMC INCINERATOR (BLDG. 3152) , FTLE-29 - BLDG 9570 (WEAPONS REPAIR/ INDOOR)RANGE, FTLE-71 - VEHICLE WASHRACKS, FTLE-73 - MILLER HILL, FTLE-74 - ENGINEER BLUFF)
1999	
CS	(FTLE-30 - BUILDING 9507 (TRANSFORMER STORAGE))
RI/FS	(FTLE-16 - BATTERY ACID PIT)
RA(C)	(FTLE-16 - BATTERY ACID PIT, FTLE-32 - SOLVENT REFINED COAL PILOT PLANT, FTLE-40 - MIXED WASTE STORAGE (BLDG. S9749), FTLE-46 - ILLICIT PCB DUMP SITE)
SI	(FTLE-10 - STORM WATER OUTFALLS, FTLE-16 - BATTERY ACID PIT, FTLE-28 - PESTICIDE RINSE AREA - BUILDING 2054, FTLE-46 - ILLICIT PCB DUMP SITE, FTLE-54 - LANDFILL 1)
RFI/CMS	(FTLE-30 - BUILDING 9507 (TRANSFORMER STORAGE))
2000	
CS	(FTLE-73 - MILLER HILL, FTLE-74 - ENGINEER BLUFF, FTLE-75 - UNDERGROUND GASOLINE PIPELINE)
RFA	(FTLE-75 - UNDERGROUND GASOLINE PIPELINE)
2001	
DES	(FTLE-30 - BUILDING 9507 (TRANSFORMER STORAGE))
RFI/CMS	(FTLE-71 - VEHICLE WASHRACKS)
SI	(FTLE-17 - OLD FIRE FIGHTING TRAINING PIT, MF-SS-34N - TCE Cantonment Area Spill Site)
2002	
CMI(C)	(FTLE-30 - BUILDING 9507 (TRANSFORMER STORAGE))
LTM	(FTLE-66 - (2) UST (NEVADA & 41ST DIVISION))
RA(C)	(FTLE-67 - LANDFILL 2)
2003	
SI	(FTLE-18 - PARK MARSH LANDFILL)
RA(C)	(MF-DP-061 - ACID DRY WELL BETWEEN BLDG745&CREEK, MF-WP-44 - Vehicle Maintenance Leach Pit)
IRA	(MF-SS-34N - TCE Cantonment Area Spill Site, MF-WP-44 - Vehicle Maintenance Leach Pit)
LTM	(FTLE-58 - LANDFILL 5)
RI/FS	(MF-SS-34N - TCE Cantonment Area Spill Site)
2004	
RA(C)	(FTLE-54 - LANDFILL 1, MF-SS-34N - TCE Cantonment Area Spill Site)
RFA	(PBC@FortLewis - PBC at Fort Lewis)
RD	(MF-SS-34N - TCE Cantonment Area Spill Site)
SI	(FTLE-56 - LANDFILL 3)

IRA	(FTLE-33 - LOGISTICS CENTER)
RI/FS	(FTLE-33 - LOGISTICS CENTER)
2005	
RI/FS	(FTLE-18 - PARK MARSH LANDFILL, FTLE-59 - LANDFILL 6, FTLE-69 - OLD EXPLOSIVE ORDNANCE DEMOLITION SITE)
RA(C)	(FTLE-31 - DRMO YARD, MF-RW-035 - RADIOACTV DSPSL PIT, SITE 35)
2006	
RD	(FTLE-33 - LOGISTICS CENTER)
2007	
RFI/CMS	(FTLE-75 - UNDERGROUND GASOLINE PIPELINE)
RA(C)	(FTLE-33 - LOGISTICS CENTER)
2008	
RA(C)	(MF-WP-064 - WASTE PIT AT ENTOMOLOGY SHOP)
RFI/CMS	(FTLE-74 - ENGINEER BLUFF)
RI/FS	(FTLE-51 - OUTFALL #7/ SETTLING BASIN (BLDG. 9586))
2009	
IRA	(FTLE-73 - MILLER HILL)
2011	
RFI/CMS	(FTLE-73 - MILLER HILL)
CS	(PBC@FortLewis - PBC at Fort Lewis)
2012	
RFI/CMS	(PBC@FortLewis - PBC at Fort Lewis)
2013	
CMI(C)	(PBC@FortLewis - PBC at Fort Lewis)
2014	
CMI(C)	(FTLE-73 - MILLER HILL)
DES	(FTLE-62 - LANDFILL 9)
RFI/CMS	(FTLE-62 - LANDFILL 9)

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
FTLE-59	LANDFILL 6	Landfill 6 ESD	20160831
FTLE-46	ILLICIT PCB DUMP SITE	Illicit PCB Dump Site Decision Document	20160831
FTLE-51	OUTFALL #7/ SETTLING BASIN (BLDG. 9586)	IWTP ESD	20160831

Final RA(C) Completion Date: 201609

Schedule for Next Five-Year Review: 2017

Estimated Completion Date of IRP at Installation (including LTM phase): 204609

JOINT BASE LEWIS-MCCHORD IRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
FTLE-16	BATTERY ACID PIT	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
FTLE-28	PESTICIDE RINSE AREA - BUILDING 2054	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
FTLE-31	DRMO YARD	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
FTLE-32	SOLVENT REFINED COAL PILOT PLANT	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
FTLE-33	LOGISTICS CENTER	RA(O)						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
FTLE-46	ILLICIT PCB DUMP SITE	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
FTLE-51	OUTFALL #7/ SETTLING BASIN (BLDG. 9586)	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
FTLE-54	LANDFILL 1	RA(O)						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
FTLE-57	LANDFILL 4	RA(O)						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
FTLE-73	MILLER HILL	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MF-ALGT-LF-05	American Lake Garden Tract	RA(O)						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MF-DP-60	Floating Fuel at Washrack/Treatment	RA(O)						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MF-LF-004	LANDFILL D-4	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MF-LF-006	BASE LANDFILL, D6	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MF-LF-007	BASE LANDFILL, D7	RA(O)						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MF-OT-039	CONCRETE BURN TRENCH	RA(O)						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MF-SD-054	LEACH PITS AT WTA NPL SITE	RA(O)						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MF-SS-34	Spill Site Beside POL Storage Area	RA(O)						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MF-SS-34N	TCE Cantonment Area Spill Site	RA(O)						
		LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
MF-WP-44	Vehicle Maintenance Leach Pit	RA(O)						

JOINT BASE LEWIS-MCCHORD
Army Defense Environmental Restoration Program
Military Munitions Response Program

MMRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 23/22

Installation Site Types with Future and/or Underway Phases

1 Firing Range
(FTLEW-015-R-01)

Most Widespread Contaminants of Concern

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

Media of Concern

Soil

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

Site ID	Site Name	Action	Remedy	FY
FTLEW-008-R-01	FORMER SKEET RANGE	IRA	FENCE OR OTHER SITE ACCESS CONTROL MEASURES	2004
MF-004-R-01	Ordnance Disposal - Burn Kettles	FRA	REMOVAL	2011
MF-005-R-01	Old Skeet Range	IRA	REMOVAL	2011
MF-005-R-01	Old Skeet Range	FRA	GROUND WATER TREATMENT	2011
FTLEW-008-R-01	FORMER SKEET RANGE	FRA	WASTE REMOVAL - SOILS	2013
FTLEW-015-R-01	B Range	IRA	INSTITUTIONAL CONTROLS	2015

Duration of MMRP

Date of MMRP Inception 200212

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201612/201612

Date of MMRP completion including Long Term Management (LTM): 201612

MMRP Contamination Assessment

Contamination Assessment Overview

The FY02 Defense Authorization Act required an inventory of all defense sites known or suspected to contain unexploded ordnance (UXO), discarded military munitions (DMM), or MC at all active and BRAC properties, and Formerly Used Defense Sites (FUDS).

Military munitions include all ammunition products and components produced for or used by the armed forces for national defense and security, including confined gaseous, liquid, and solid propellants, explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries, including bulk explosives and chemical warfare agents, chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges, and devices and components thereof. The term does not include wholly inert items, improvised explosive devices, and nuclear weapons, nuclear devices, and nuclear components, except that the term does include non-nuclear components of nuclear devices that are managed under the nuclear weapons program of the Department of Energy after all required sanitization operations under the Atomic Energy Act of 1954 (42 USC. 2011 et seq.) have been completed.

At Lewis-Main and Lewis-North, the Army range inventory identified 14 MMRP-eligible sites. The Phase III closed, transferred or transferring (CTT) range inventory report, which was completed in FY03, is considered the preliminary assessment (PA). SI fieldwork was completed in summer 2006. The final SI report was approved in FY07. All sites were considered low hazard.

Construction work in 2005 and early 2011 in B Range (FTLEW-015-R-01) excavated a few munitions and MEC. Subsequent to that, an RI for the range was completed in 2011 and an FS was completed in 2013. Except for a former mortar training area, it recommended a low probability of encountering MEC. The former mortar area was 100 percent investigated; all MEC were removed. In 2012 an action memorandum implemented LUCs for B Range, which includes MEC awareness training and UXO construction support during excavation activities. It is expected that the action memorandum will be the basis for the final action.

The former Skeet Range (FTLEW-008-R-01) was remediated for lead concentrations in 2012. No military munitions were identified on the site.

At McChord Field, a Phase I comprehensive site evaluation (CSE) identified seven munitions sites. The CSE Phase I is analogous to a CERCLA PA. A CSE Phase II evaluation (comparable to a CERCLA SI) was conducted in 2008. The Phase II work concluded that two sites required NFA, three sites required further evaluation for potential MEC, and two sites contained lead concentrations exceeding state limits for unrestricted use. In 2010, a munitions clearance was conducted for the three MEC sites, and lead remediation was effected at the remaining two sites. As of 2011, no further MMRP response actions are required.

Cleanup Exit Strategy

At Lewis-Main in FY12, a PBC for lead removal was completed at the Skeet Range (FTLEW-008-R-01). JBLM is awaiting final WSDEOE approval for this cleanup. An FS for the B-Range (FTLEW-015-R-01) has been completed and a proposed plan was drafted in FY14. LUCs will continue to be implemented beyond September 2014.

In 2011, McChord Field completed all MMRP-related cleanups; future MMRP responses are not anticipated unless new sites are identified.

MMRP Previous Studies

Year	Title	Author	Date
2001	McChord Air Force Base Range Inventory Report	Air Mobility Command	NOV-2001
2002	US Army Active/Inactive Range Inventory - Fort Lewis	Forces Command	FEB-2002
	Historical Records Report, Munitions, Fort Lewis	Tetra Tech EM	AUG-2002
2003	Closed, Transferring, and Transferred Ranges, Fort Lewis and Vancouver Barracks	ERM, Inc	DEC-2003
2006	Work Plan SI Fort Lewis Military Munitions Response Program	URS	SEP-2006
2007	SI Report Fort Lewis Military Munitions Response Program	URS	APR-2007
	Final McChord AFB Comprehensive Site Evaluation, Phase I	URS Corp	SEP-2007
2009	Final Comprehensive Site Evaluation Phase II Report, McChord AFB	US Army Corps of Engineers	NOV-2009
2010	Final Qualitative Assessment Report Munitions Constituent Migration at AMC Operational Ranges, McChord AFB	Weston Solutions, Inc	MAR-2010
	McChord Soil and Anomaly Investigation Completion Report	Versar/ Jacobs Engineering	AUG-2010
2012	B Range Remedial Investigation	Kemron, Inc	JAN-2012
2014	B-Range Feasibility Study	Versar, Inc	FEB-2014
2015	B-Range Proposed Plan	JBLM	JAN-2015

JOINT BASE LEWIS-MCCHORD
Military Munitions Response Program
Site Descriptions

Site ID: FTLEW-015-R-01

Site Name: B Range

Alias: None

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 04

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

Media of Concern: Soil

Phases	Start	End
PA.....	200212.....	200312
SI.....	200506.....	200704
RI/FS.....	201002.....	201501
IRA.....	201009.....	201503
RA(C).....	201509.....	201612

RIP Date: N/A

RC Date: 201612

SITE DESCRIPTION

In 2006, during MMRP SI activities, the B Range was discovered as an MRS. The boundary of the approximately 2,208-acre site encompasses all of Lewis North (former North Fort Lewis), excluding the land within the operational range area. The site boundary was conservatively estimated based on a pamphlet from about 1925 containing a rudimentary sketch of the area. Current and anticipated future land use within Lewis North is a mix of residential, commercial, and industrial. The southern portion (about 1,000 acres) of Lewis North was heavily developed during WWII and is in the process of being completely redeveloped.

According to the April 2007 MMRP SI Report for Fort Lewis, 37mm projectiles, machine guns, and light mortars may have been used at the B Range. The SI report also documents the discovery of six sand-filled, three-inch Stokes mortars during construction activities on North Fort Lewis between February 2006 and June 2006.

Subsequent to the April 2007 MMRP SI report, additional MEC was encountered during construction activities on Lewis-North. Munitions included three-inch Stokes mortars and other inert MEC items, such as fragments from rifle grenades, as well as training items not associated with the B Range (e.g., practice land mines). A few unused Stokes containing high explosives were excavated and removed by the installation's explosive ordnance detachment.

In 2011, regulatory authority changed from RCRA to CERCLA.

An RI was conducted in 2010-2011 to characterize B Range. During the RI the site was divided into two MRSs. The northern undeveloped portion of B Range was designated munitions response site (MRS)-1, and the southern cantonment area of Lewis North was designated as MRS-2. Based on the findings of the RI, both areas have a low probability of encountering MEC.

In FY11 an interim response action consisting of LUCs was initiated. In addition to land use controls, the response action provides UXO construction support for MRS-2 if exposure potential for UXO is determined to be high.

Proposed remedy will permanently implement the interim action. The proposed plan was reviewed by the public in January 2015. In November 2015 a ROD was completed and as of March 2016 is under USAEC legal review.

If needed, UXO construction support will utilize non-IRP funding. LUCs will be implemented using in-house installation staff at no cost to the IRP. This is a zero cost site for FY17.

CLEANUP/EXIT STRATEGY

LUCs are implemented for this site and are non-IRP funded.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FTLEW-001-R-01	110-B DAWN ATTACK COURSE	200705	APR 2007 Final Site Inspection Report
FTLEW-002-R-01	222 DEMOLITIONS AREA	200705	APR 2007 Final Site Inspection Report
FTLEW-003-R-01	DUD AREA	200705	APR 2007 Final Site Inspection Report
FTLEW-004-R-01	EVERGREEN FIRING RANGE COMPLEX	200705	APR 2007 Final Site Inspection Report
FTLEW-005-R-01	EVERGREEN INFILTRATION RANGE	200409	Cleanup complete using OMA funds. No Further Action obtained from WSDOE in accordance with FLAO.
FTLEW-006-R-01	FORMER MINES AREA	200705	APR 2007 Final Site Inspection Report
FTLEW-007-R-01	FORMER MUSTARD GAS AREA	200409	SEP 2004 Final FLAO Remedial Investigation Work Plan
FTLEW-008-R-01	FORMER SKEET RANGE	201306	Ecology approved Interim action completion report.
FTLEW-009-R-01	MACHINE GUN RANGE	200705	APR 2007 Final Site Inspection Report
FTLEW-010-R-01	MILLER HILL FIRING RANGE COMPLEX	200312	Being addressed under IRP Program
FTLEW-011-R-01	MORTAR RANGE	200705	APR 2007 Final Site Inspection Report
FTLEW-012-R-01	POPPING KETTLE	200409	SEP 2004 Final FLAO Remedial Investigation Work Plan
FTLEW-013-R-01	PRACTICE GRENADE RANGE	200705	APR 2007 Final Site Inspection Report
FTLEW-014-R-01	SMALL ARMS IMPACT AREA	200705	APR 2007 Final Site Inspection Report
MF-001-R-01	Mukilteo Tank Farm - Marine Transfe	200408	This site was not transferred to JBLM in 2005 BRAC. It is currently under jurisdiction of Fairchild AFB.
MF-002-R-01	Gas Chamber Area	200812	Per the SEP 2007 Comprehensive Site Evaluation Phase I Report, this site does not qualify for the MMRP. Site administratively closed 15 DEC 08 by W. Myers.
MF-003-R-01	Aircraft Target Butt & 1000 Inch Ra	201105	Action Memorandum for cleanup issued 09 JUL 10. Remediation complete per Final After Action Report published AUG 2011. Accepted by DDESB without comment 18 AUG 11.
MF-003-R-02	Aircraft Target Butt & 1000 Inch Ra	201109	Action Memorandum for cleanup issued 9 Jul 2010. Remediation complete per Final After Action Report published Aug 2011. Accepted by DDESB without comment 18 Aug 2011.
MF-004-R-01	Ordnance Disposal - Burn Kettles	201109	Action Memorandum for cleanup issued 09 JUL 10. Remediation complete per Final After Action Report published AUG 2011. Accepted by DDESB without comment 18 AUG11.
MF-005-R-01	Old Skeet Range	201103	Action Memorandum for cleanup issued 09 JUL 10. Remediation complete per Final After Action Report published AUG

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			2011. Accepted by DDESB without comment 18 AUG 11.
MF-005-R-02	Old Skeet Range No Further Action A	201109	Action Memorandum for cleanup issued 09 JUL 10. Remediation complete per Final After Action Report published AUG 2011. Accepted by DDESB without comment 18 AUG11.
MF-006-R-01	Old Small Arms Area	201109	Action Memorandum for cleanup issued 09 JUL 10. Remediation complete per Final After Action Report published AUG 2011. Accepted by DDESB without comment 18 AUG 11.

MMRP Schedule

Date of MMRP Inception 200212

Past Phase Completion Milestones

2004

IRA (FTLEW-008-R-01 - FORMER SKEET RANGE)
 RFA (FTLEW-001-R-01 - 110-B DAWN ATTACK COURSE, FTLEW-002-R-01 - 222 DEMOLITIONS AREA, FTLEW-003-R-01 - DUD AREA, FTLEW-004-R-01 - EVERGREEN FIRING RANGE COMPLEX, FTLEW-005-R-01 - EVERGREEN INFILTRATION RANGE, FTLEW-006-R-01 - FORMER MINES AREA, FTLEW-007-R-01 - FORMER MUSTARD GAS AREA, FTLEW-008-R-01 - FORMER SKEET RANGE, FTLEW-009-R-01 - MACHINE GUN RANGE, FTLEW-010-R-01 - MILLER HILL FIRING RANGE COMPLEX, FTLEW-011-R-01 - MORTAR RANGE, FTLEW-012-R-01 - POPPING KETTLE, FTLEW-013-R-01 - PRACTICE GRENADE RANGE, FTLEW-014-R-01 - SMALL ARMS IMPACT AREA)
 PA (FTLEW-015-R-01 - B Range, MF-001-R-01 - Mukilteo Tank Farm - Marine Transfe)

2007

PA (MF-002-R-01 - Gas Chamber Area, MF-003-R-01 - Aircraft Target Butt & 1000 Inch Ra, MF-004-R-01 - Ordnance Disposal - Burn Kettles, MF-005-R-01 - Old Skeet Range, MF-006-R-01 - Old Small Arms Area)
 CS (FTLEW-001-R-01 - 110-B DAWN ATTACK COURSE, FTLEW-002-R-01 - 222 DEMOLITIONS AREA, FTLEW-003-R-01 - DUD AREA, FTLEW-004-R-01 - EVERGREEN FIRING RANGE COMPLEX, FTLEW-006-R-01 - FORMER MINES AREA, FTLEW-008-R-01 - FORMER SKEET RANGE, FTLEW-009-R-01 - MACHINE GUN RANGE, FTLEW-011-R-01 - MORTAR RANGE, FTLEW-013-R-01 - PRACTICE GRENADE RANGE, FTLEW-014-R-01 - SMALL ARMS IMPACT AREA)
 SI (FTLEW-015-R-01 - B Range, MF-002-R-01 - Gas Chamber Area)

2009

LTM (MF-002-R-01 - Gas Chamber Area)

2010

SI (MF-003-R-01 - Aircraft Target Butt & 1000 Inch Ra, MF-003-R-02 - Aircraft Target Butt & 1000 Inch Ra, MF-004-R-01 - Ordnance Disposal - Burn Kettles, MF-005-R-01 - Old Skeet Range, MF-005-R-02 - Old Skeet Range No Further Action A, MF-006-R-01 - Old Small Arms Area)
 RFI/CMS (FTLEW-008-R-01 - FORMER SKEET RANGE)
 PA (MF-003-R-02 - Aircraft Target Butt & 1000 Inch Ra, MF-005-R-02 - Old Skeet Range No Further Action A)

2011

IRA (MF-005-R-01 - Old Skeet Range)
 RA(O) (MF-004-R-01 - Ordnance Disposal - Burn Kettles)
 RI/FS (MF-003-R-01 - Aircraft Target Butt & 1000 Inch Ra, MF-005-R-01 - Old Skeet Range)
 RD (MF-003-R-01 - Aircraft Target Butt & 1000 Inch Ra, MF-005-R-01 - Old Skeet Range)
 RA(C) (MF-003-R-01 - Aircraft Target Butt & 1000 Inch Ra, MF-004-R-01 - Ordnance Disposal - Burn Kettles, MF-005-R-01 - Old Skeet Range)

2013

CMI(C) (FTLEW-008-R-01 - FORMER SKEET RANGE)

2015

RI/FS (FTLEW-015-R-01 - B Range)
 IRA (FTLEW-015-R-01 - B Range)

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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MMRP Schedule

Final RA(C) Completion Date: 201612

Schedule for Next Five-Year Review: 2017

Estimated Completion Date of MMRP at Installation (including LTM phase): 201612

JOINT BASE LEWIS-MCCHORD MMRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
FTLEW-015-R-01	B Range	RA(C)						

JOINT BASE LEWIS-MCCHORD
Army Defense Environmental Restoration Program
Compliance Restoration

CR Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 5/0

Installation Site Types with Future and/or Underway Phases

5 Underground Storage Tank
(CC FL04, CC FL05, CC FL08, CC FL10, CC FL22)

Most Widespread Contaminants of Concern

Petroleum, Oil and Lubricants (POL)

Media of Concern

Groundwater, Soil

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

Site ID	Site Name	Action	Remedy	FY
CC FL04	Former Gas Station A1033 (AOC 9-2)	IRA	SOIL VAPOR EXTRACTION	2014
CC FL05	GAAF Fuel Facility (AOC 10-8)	FRA	NATURAL ATTENUATION	2014
CC FL08	Bldg 4131 Leaking Tank Site (AOC 8-2)	FRA	NATURAL ATTENUATION	2015
CC FL10	Bldg A0111 Leaking Tank Site (AOC 8-4)	FRA	NATURAL ATTENUATION	2015

Duration of CR

Date of CR Inception: 199601

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201802/204709

Date of CR completion including Long Term Management (LTM): 204709

CR Contamination Assessment

Contamination Assessment Overview

The CC program originally addressed sites on JBLM-Lewis that were not funded by the DERP. The sites primarily include soil and groundwater contamination from former USTs. On Dec. 29, 2008, the Office of the Deputy Under Secretary of Defense for Installations and Environment, [ODUSD(I&E)], issued an internal policy for DERP eligibility date for the MMRP. This made many sites previously addressed in the Army's CC program eligible for the DERP. Sites that are now eligible for the Munitions Response (MR) program have been migrated from AEDB-CC and given the naming convention of other MR sites. The newly eligible non-MR type sites are considered to be Installation Restoration (IR) sites; however, the newly eligible sites are being coded CR in AEDB-R to distinguish them from the original IR sites and metrics.

Sites included in the transfer were CC FL04, CC FL05, CC FL08, CC FL10, and CC FL22. All sites were former USTs which contained either gasoline, diesel, or waste oil. The tanks were removed, and cleanup was conducted to the extent practicable. Because of physical constraints, however, some soil with petroleum hydrocarbons was left in place.

Sites were originally identified and investigated under the WSDOE RCRA program, but in FY11 were transferred to the voluntary cleanup program.

Investigation is complete at all sites. As of September 2014, four sites are awaiting WSDOE approval of JBLM MNA recommendation.

Cleanup Exit Strategy

RA will consist of MNA of groundwater. At one site, cleanup consists of air sparging and SVE. Where remaining soil concentrations are above residential cleanup levels, LUCs will be implemented. See individual site descriptions for details.

CR Previous Studies

	Title	Author	Date
2008	Fort Lewis Agreed Order Remedial Investigation	Hart Crowser/US Army Corps of Engineers	FEB-2008
2009	Fort Lewis Agreed Order Design Report, Air Sparge and Soil Vapor Extraction System, Area of Concern 9-2, (CCFL04)	Versar, Inc	MAY-2009
	Fort Lewis Agreed Order Feasibility Study for Seven Sites	Versar, Inc.	NOV-2009
2011	Initial Investigation Report, Non-FLAO Leaking Tank Sites, Joint Base Lewis-McChord, Washington	Kemron, Inc/Pioneer Technologies	DEC-2011
2013	Sub-slab Depressurization, Air Sparge and Soil Vapor Extraction System, Pilot Test Startup and Vapor Intrusion Monitoring Report, JBLM, North Fort Credit Union	Versar, Inc	FEB-2013
2014	Building 5101 UST Site (AOC 9-4) Summary Report	Versar, Inc	MAY-2014
	Building 5115 UST Site (AOC 8-3) Summary Report	Versar, Inc.	MAY-2014
	Building 4131 UST Site (AOC 8-2) Summary Report	Versar, Inc	MAY-2014
	Gray Army Airfield Refueling Facility (AOC 10-8) Summary Report	Versar, Inc	MAY-2014

JOINT BASE LEWIS-MCCHORD
Compliance Restoration
Site Descriptions

Site ID: CC FL04

Site Name: Former Gas Station A1033 (AOC 9-2)

Alias: None

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Groundwater

Phases	Start	End
RFA.....	199601.....	199706
RFI/CMS.....	200103.....	201405
IRA.....	201001.....	201405
CMI(C).....	201405.....	201709
CMI(O).....	201710.....	204709

RIP Date: 201710

RC Date: 204709

SITE DESCRIPTION

The site is a former gasoline station. Two 4,000-gallon gasoline USTs were removed in 1990, two in 1994, one 10,000-gallon UST in 1998, and two 1,000-gallon heating oil tanks in 2009 from Building A1033, a former gas station (AOC 9-2). Approximately 1,138 cubic yards of soil was removed from an excavation that extended to a depth of 35 feet during the 1994 UST removal. The 1998 tank pull was clean closed. In 2010 a credit union was constructed over the former gas station site and a soil vapor extraction system was installed. Operation began in February 2011. This is an FLAO site as a result of RCRA corrective action recommended in a 1997 RFA.

Previous investigations included the 1994 tank pull activities, installation of six monitoring wells between 1995 and 1996, a direct-push groundwater investigation in 2001, and semiannual groundwater monitoring between 1995 and present. BTEX and TPH concentrations in groundwater immediately downgradient of the former USTs is the only contaminant of concern at the site. Potentially complete and significant pathways include future drinking water use and vapor intrusion. Concentrations of benzene and TPH in the gasoline range in the most impacted monitoring well during the March 2014 groundwater monitoring event were 36 ug/L and 14,000 ug/L respectively.

JBLM conducted a pilot study consisting of SVE and air sparging in 2011-2012. A remedial action plan using vapor extraction and air sparging was approved by the WSDOE in 2013. Startup of the air sparge system occurred in the spring of 2014. The air sparge system is expected to operate for up to three years. Following air sparging, groundwater will be monitored until concentrations of gasoline achieve state cleanup levels.

LUCs have been implemented at the site to restrict residential land use and future excavations. LUC management costs are captured in site FTLE 33.

CLEANUP/EXIT STRATEGY

Continue combined air sparging and SVE for two more years. Conduct groundwater monitoring and implement LUCs to prevent residential use.

Site ID: CC FL05
Site Name: GAAF Fuel Facility (AOC 10-8)
Alias: None

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Groundwater

Phases	Start	End
RFA.....	199601.....	199706
RFI/CMS.....	200103.....	201406
CMI(C).....	201310.....	201409
CMI(O).....	201501.....	204609

RIP Date: 201501

RC Date: 204609

SITE DESCRIPTION

Releases from the four former JP-4 USTs at the GAAF Fuel Facility (AOC 10-8) include a reported spill in 1990 and a suspected spill in 1991. The contaminants of concern at this former UST site are petroleum-related compounds.

Investigation activities at the site have included a 1990 SI, a 1991 soil gas survey, installation of four monitoring wells in 1993, quarterly groundwater monitoring between 1993 and 1995, removal of the four USTs in 1998, removal of a heating oil UST in 2002, a FLAO SI (which included installation and sampling of a fifth monitoring well) in 2004, and ongoing semiannual groundwater monitoring. The only potential state cleanup level exceedances were the detections of TPH in the tank pull excavations and TPH concentrations in the fifth monitoring well installed immediately adjacent to the UST excavation. Potentially complete and significant pathways include human direct contact and future drinking water use. In 2008 the entire former tank area was paved. Diesel range TPH were detected at 1,700 ug/L in the only impacted monitoring well during the September 2014 groundwater monitoring event.

JBLM submitted a summary report in May 2014 to the WSDOE, who approved the document in September 2014. The WDOE letter accepted MNA as the remedy.

LUC management and site review costs for CC FL05 are captured under site FTLE 33's CTC.

CLEANUP/EXIT STRATEGY

Monitor natural attenuation of groundwater until state cleanup levels are reached. Maintain LUCs to prevent residential land use.

Site ID: CC FL08

Site Name: Bldg 4131 Leaking Tank Site (AOC 8-2)

Alias: None

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Groundwater

Phases	Start	End
RFA.....	199601.....	199706
RFI/CMS.....	200103.....	201410
CMI(C).....	201410.....	201501
CMI(O).....	201501.....	204609

RIP Date: 201501

RC Date: 204609

SITE DESCRIPTION

A 500-gallon heating oil UST (AOC 8-2) was removed in August 1996. Clean closure was not obtained with the first excavation [TPH-D] at 9,285 mg/kg in bottom sample at eight feet]. Clean closure was not obtained with the second excavation (TPH-D at 7,866 mg/kg in bottom sample underneath water main at 22 feet). Additional excavation was not conducted because of the proximity of the water main. No groundwater was encountered. Clean closure was achieved within the excavation to at least 15 feet.

This is a former UST site. The only potentially complete pathway is future drinking water use. The six existing monitoring wells have delineated the extent of the limited TPH-D impact in shallow groundwater. Semiannual groundwater monitoring is ongoing. Groundwater monitoring indicates biodegradation of the fuel is sufficient to clean up the site. The highest concentration of TPH-D detected in a monitoring well during the September 2014 sampling event was 8,100 ug/L.

In May of 2014 a summary report was sent to the WSDOE, which proposed MNA as the remedy. The WSDOE concurred with the proposal in a letter dated Oct. 6, 2014.

LUCs are in effect at the site. LUC management costs for the site are captured under FTLE 33's CTC.

CLEANUP/EXIT STRATEGY

Monitor natural attenuation of groundwater until state cleanup levels are reached. Maintain LUCs to prevent residential land use.

Site ID: CC FL10

Site Name: Bldg A0111 Leaking Tank Site (AOC 8-4)

Alias: None

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Groundwater

Phases	Start	End
RFA.....	199601.....	199706
RFI/CMS.....	200103.....	201306
CMI(C).....	200101.....	201501
CMI(O).....	201502.....	204609

RIP Date: 201502

RC Date: 204609

SITE DESCRIPTION

A 300-gallon heating oil UST (AOC 8-4) was removed from this site in May 1996. Clean closure was not obtained with first excavation (TPH-D at a concentration of 3,700 mg/kg in bottom sample at 11 ft). The second excavation was stopped because groundwater was encountered at 20 feet. Clean closure was not obtained with the second excavation (TPH-D at concentrations of 4,638 mg/kg and 8,403 mg/kg in 15-foot-deep north and southeast sidewall samples, respectively). No groundwater samples were collected. The third excavation was conducted in August 1996 after groundwater elevation decreased, but was stopped because of groundwater (depth not given). There were no potential MTCA Standard Method B exceedances in samples collected following the third excavation; however, the north sidewall (where a 4,638 mg/kg sample was collected following the second excavation) was not fully excavated, and additional north sidewall confirmation samples were not collected because of the presence of a water main. Clean closure was achieved within the excavation to at least 15 feet.

The only potentially complete pathway is future drinking water use. The five existing monitoring wells have delineated the extent of the limited TPH-D impact in shallow groundwater. Semiannual groundwater monitoring is ongoing. In 2010 a battalion headquarters was constructed on the site. Three existing monitoring wells in the building footprint were abandoned and replaced at locations adjacent to the new building. Only one of the monitoring wells has concentration of TPH-D above the state cleanup level of 500 ug/L. The highest concentration of TPH-D detected in samples collected during the September 2014 sampling event was 1,100 ug/L.

In 2010 a FS was submitted to the WSDOE. In 2013, an amendment was resubmitted with the recommendation of MNA as the remedy. The WSDOE accepted MNA as the remedy in a letter dated June 4, 2013.

LUCs are in effect at the site. LUC management costs are captured in site FTLE 33's CTC.

CLEANUP/EXIT STRATEGY

Monitor natural attenuation of groundwater until state cleanup levels are reached. Maintain LUCs to prevent residential land use.

Site ID: CC FL22
Site Name: Non-FLAO Leaking Tank Sites
Alias: None

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Groundwater, Soil

Phases	Start	End
ISC.....	199601.....	199706
CAP.....	201110.....	201802

RIP Date: N/A

RC Date: 201802

SITE DESCRIPTION

This site consists of former UST sites at which the tanks have been removed but soil and/or groundwater contamination remains. Sites with residual soil contamination were not completely remediated due to presence of structures that prevented soil excavation (e.g. utilities or buildings with foundations that would be structurally compromised by further excavation) or which encountered groundwater and prevented additional excavation. These sites are being addressed under the Washington State's Voluntary Cleanup Program. In FY11-12 an SI investigated 40 of these former tank and spill sites. NFA or LUCs were proposed for all but two of the sites. In November 2013, 46 additional USTs and spill sites were identified as needing further site investigation. As with the FY11-12 sites, the USTs typically were not cleaned up because groundwater was encountered during excavation or building structures were endangered. Sites have similar geology, size, and spill characteristics. As of March 2016 an SI work plan has been submitted to WSDOE. WSDOE submitted comments back to JBLM which are currently being addressed.

Evaluation of the sites for further investigation or remediation will be conducted following the SI. Since the results of the investigation are not known at this time, this is a zero cost site for FY17.

CLEANUP/EXIT STRATEGY

Evaluation of the sites for further investigation or remediation will be conducted following the SI.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
There are no NFA sites			

CR Schedule

Date of CR Inception: 199601

Past Phase Completion Milestones

1997

RFA (CC FL04 - Former Gas Station A1033 (AOC 9-2), CC FL05 - GAAF Fuel Facility (AOC 10-8), CC FL08 - Bldg 4131 Leaking Tank Site (AOC 8-2), CC FL10 - Bldg A0111 Leaking Tank Site (AOC 8-4))
ISC (CC FL22 - Non-FLAO Leaking Tank Sites)

2013

RFI/CMS (CC FL10 - Bldg A0111 Leaking Tank Site (AOC 8-4))

2014

IRA (CC FL04 - Former Gas Station A1033 (AOC 9-2))

CMI(C) (CC FL05 - GAAF Fuel Facility (AOC 10-8))

RFI/CMS (CC FL04 - Former Gas Station A1033 (AOC 9-2), CC FL05 - GAAF Fuel Facility (AOC 10-8))

2015

RFI/CMS (CC FL08 - Bldg 4131 Leaking Tank Site (AOC 8-2))

CMI(C) (CC FL08 - Bldg 4131 Leaking Tank Site (AOC 8-2), CC FL10 - Bldg A0111 Leaking Tank Site (AOC 8-4))

Projected Phase Completion Milestones

See attached schedule

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

Site ID	Site Name	ROD/DD Title	ROD/DD Date
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Final RA(C) Completion Date: 201709

Schedule for Next Five-Year Review: 2017

Estimated Completion Date of CR at Installation (including LTM phase): 204709

JOINT BASE LEWIS-MCCHORD CR Schedule

 = phase underway

SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
CC FL04	Former Gas Station A1033 (AOC 9-2)	CMI(C)						
		CMI(O)						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
CC FL05	GAAF Fuel Facility (AOC 10-8)	CMI(O)						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
CC FL08	Bldg 4131 Leaking Tank Site (AOC 8-2)	CMI(O)						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
CC FL10	Bldg A0111 Leaking Tank Site (AOC 8-4)	CMI(O)						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
CC FL22	Non-FLAO Leaking Tank Sites	CAP						

Community Involvement

Technical Review Committee (TRC): None

Community Involvement Plan (Date Published): 201201

Restoration Advisory Board (RAB): No

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

Community Interest Solicited on: 201404

Efforts Taken to Determine Interest

Typically, an open house is held every other year at JBLM-Lewis to update the public on the status of the investigations and cleanup of various sites. Advertisements announcing the meeting and how to get more information on this project are published in the Tacoma News Tribune and the JBLM Northwest Guardian. A JBLM community newsletter describing cleanup activities is published and placed at the Lakewood and Grandstaff libraries. The newsletter also includes a community information form requesting comments and questions, interest in future meetings and interest in a RAB.

Results

Attendance at the open house at JBLM-Lewis has been minimal and little feedback or interest has resulted from the newsletter. The community information forms that have been sent back reveal that there is limited interest in future open houses and updated cleanup information.

Follow-up Procedures

An open house was performed on April 22, 2014 with a future open house to be scheduled in FY16. In January 2012 the community involvement plan was updated.

Additional Community Involvement Information

N/A

Administrative Record is located at

Public Works-ED, IMWE-PWE, MS 17 (W. Myers),
Box 339500, Joint Base Lewis-McChord,
WA 98433-9500, (253) 477-3742

Information Repository is located at

Grandstaff Library, Building 2109 Pendleton Avenue,
Joint Base Lewis-McChord, WA 98433, and

Pierce County Library, Lakewood Branch
633 Wildaire Rd SE
Lakewood, WA 98499 (253) 582-6040

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

TAPP Title: N/A

Potential TAPP: N/A

