FY2012

BLUE GRASS ARMY DEPOT

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 Installation Restoration Manager, the US Army Environmental Command (USAEC), Blue Grass Army Depot (BGAD), the executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules, and budgets for all major Army installation cleanup programs.

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

Acronyms

AEDB-R	Army Environmental Database-Restoration
AMC	Army Materiel Command
AOC	Area of Concern
BEHP	bis (2-ethylhexyl) phthalate
BGAD	Blue Grass Army Depot
BLGR	AEDB-R designation for Blue Grass Army Depot
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CLIN	Contract Line Item Number
CMS	Corrective Measures Study
CS	Confirmation Sampling
CTT	Closed, Transferring, and Transferred
CY	Calendar Year
DD	Decision Document
DERP	Defense Environmental Restoration Program
DMM	Discarded Military Munitions
DoD	Department of Defense
EM CX	Environmental and Munitions Center of Expertise
FRA	Final Remedial Action
FS	Feasibility Study
FY	Fiscal Year
GW	Groundwater
HRR	Historical Records Review
HTRW-CX	Hazardous, Toxic and Radioactive Waste Center of Expertise
IAP	Installation Action Plan
IR	Installation Restoration
IRA	Interim Remedial Action
IRP	Installation Restoration Program
JMC	Joint Munitions Command
K	thousand
KDEP	Commonwealth of Kentucky Department of Environmental Protection
LTM	Long-Term Management
LTMOM	Long-Term Monitoring Operation and Maintenance
LUC	Land Use Controls
MC	Munitions Constituents
MCL	Maximum Contaminant Levels
MEC	Munitions and Explosives of Concern
MMRP	Military Munitions Response Program
MRS	Munitions Response Site
MRSPP	Munition Response Site Prioritization Protocol
N/A	Not Applicable
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NFA	No Further Action
NPL	National Priorities List
OB	Open Burn
OE	Ordnance and Explosives

Acronyms

PA	Preliminary Assessment
PBA	Performance Based Acquisition
PCB	Polychlorinated Biphenyl
PLM	Professional Labor Management
PRG	Preliminary Remediation Goal
QD	Quantity Distance
RA	Remedial Action
RA(C)	Remedial Action (Construction)
RAB	Restoration Advisory Board
RAC	Risk Assessment Code
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RDX	Hexahydro-1,3,5-Trinito-1,3,5 Triazine
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SI	Site Inspection
SVE	Soil Vapor Extraction
SVOC	Semi-Volatile Organic Compound
SWMU	Solid Waste Management Unit
TAPP	Technical Assistance for Public Participation
TNT	Trinitrotoluene
TRC	Technical Review Committee
USACE	US Army Corps of Engineers
USAEC	US Army Environmental Command
USC	United States Code
USEPA	United States Environmental Protection Agency
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound
WP	White Phosphorous

Acronym Translation Table

CERCLA		RCRA
Preliminary Assessment(PA)	=	RCRA Facility Assessment(RFA)
Site Inspection(SI)	=	Confirmation Sampling(CS)
Remedial Investigation/Feasibility Study(RI/FS)	=	RCRA Facility Investigation/Corrective Measures Study(RFI/CMS)
Remedial Design(RD)	=	Design(DES)
Remedial Action (Construction)(RA(C))	=	Corrective Measures Implementation (Construction)(CMI(C))
Remedial Action (Operation)(RA(O))	=	Corrective Measures Implementation (Operation)(CMI(O))
Long Term Management(LTM)	=	Long Term Management(LTM)
Interim Remedial Action(IRA)	=	Interim Measure(IM)

Site Alias List

AEDB-R Site ID to Alias List

AEDB-R #	Alias
BLGR-001-R-01	
BLGR-003-R-01	
BLGR-006	SWMU 2
BLGR-012	SWMU 29
BLGR-013	SWMU 25
BLGR-020	SWMU 32
BLGR-024	SWMU 35/36
BLGR-029	SWMU 3
BLGR-059	SWMU 7
PBA@IR BLGR	PBA@IR
PBA@MR BLGR	PBA

Installation Information

Installation Locale

Installation Size (Acreage): 14500
City: Richmond
County: Madison
State: Kentucky
Other Locale Information

The BGAD covers approximately 14,500 acres in Madison County, Kentucky. The nearest municipality is Richmond with a population of approximately 32,827. Other key municipalities in the region include Berea (population 8,200), approximately eight miles south of BGAD, and Lexington (population 350,000) about 35 miles north.

Installation Mission

The mission of BGAD is to:
- Support the Joint Warfighter by safely providing a full range of high quality defense products and services at the right price, place, and time.
- Maximize Warfighter capability through Ammunition Standard Depot Operations (store, issue, receipt, inspect, maintain, and demilitarize) of conventional munitions, missiles, non-standard ammunition, and chemical defense equipment.
- Produce weapon system, combat vehicle and ammunition components to fill critical Warfighter requirements today and in the future.

Lead Organization

Army Materiel Command (AMC)

Lead Executing Agencies for Installation

Installation Restoration Program (IRP) - USAEC

Military Munitions Response Program (MMRP) - USAEC

Regulator Participation

State	Commonwealth of Kentucky, Department for Environmental Protection (KDEP), Division of Waste Management

National Priorities List (NPL) Status

BLUE GRASS ARMY DEPOT is not on the NPL

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

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

Installation Information

Installation Program Summaries

IRP

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

Affected Media of Concern: Groundwater, Surface Water

MMRP

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

Affected Media of Concern: Groundwater, Soil

5-Year / Periodic Review Summary

5-Year / Periodic Review Summary

Status	Start Date	End Date	End FY
Complete	200703	200710	2008
Complete	200206	200206	2002
Underway	201202	201306	2013

Last Completed 5-Year / Periodic Review Details

Associated ROD/DD Name	Sites
BLGR-006 MUSTARD BURN/TRENCHES	BLGR-001, BLGR-006
BLGR-012 FORMER TNT LAGOONS/HLD PONDS	BLGR-012
BLGR-020 NEW LANDFILL	BLGR-020, BLGR-023, BLGR-024, BLGR-047
BLGR-024 BATTERY BURIAL #2/OLD LANDFILL	BLGR-024
BLGR-029 PINK WATER POND	BLGR-006, BLGR-011, BLGR-021, BLGR-029
BLGR-059	BLGR-059

Results Based on a review of LTM data, protectiveness cannot be determined from the existing monitoring program due to data quality problems, which are primarily related to metals analysis in samples with high turbidity.

Actions Revise the sampling procedure to utilize passive sampling techniques.

Plans An revised sampling plan obtained regulatory approval in late 2007, and was implemented in March 2008.

Recommendations and Implementation Plans:
The Army and regulatory agencies agreed that performance of a formal five-year review of the long-term monitoring results was not possible for the current five-year period, because the data quality did not allow an assessment of remedy protectiveness; therefore, a memorandum describing the data quality issues and the successful resolution of the problems was prepared by the US Army Corps of Engineers (USACE) Environmental and Munitions Center of Expertise (EM CX) to meet requirements of a five-year review. This memorandum is the basis for the five-year review summary.

Land Use Control (LUC) Summary

LUC Title: Engineering Controls

Site(s): BLGR-020

ROD/DD Title: BLGR-020 NEW LANDFILL

Location of LUC

The engineer controls are located on and surrounding the landfill.

Land Use Restriction: Landfill restriction - Prohibit activities that would impact the LF cap (or cover system) and drainage system, Landfill restriction - Prohibit excavation on LF cap or cover system, Landfill restriction - Prohibit installation of utility system lines through the site, Landfill restriction - Restrict access to the site, Landfill restriction - Restrict construction of buildings that may interfere with LF cap or cover system, Landfill restriction - Restrict plantings that interfere LF cap or cover system (roots that penetrate the cap or cover system), Landfill restriction - Restrict vehicular traffic, Media specific - Prohibit activities that results in contact with contaminated sediments, Media specific restriction - Prohibit fishing except for recreational purposes (catch and release), Media specific restriction - Prohibit groundwater extraction that interferes with Remedial Action system, Media specific restriction - Prohibit swimming and/or wading, Media specific restriction - Prohibit, or otherwise manage excavation, Media specific restriction - Prohibit, or otherwise manage excavation below a specified depth, Media specific restriction - Restrict activities in surface water that result in contact with contaminated bottom sediments such as boating, diving, and swimming, Media specific restriction - restrict drinking water well installation, Media specific restriction - restrict withdrawal or use of groundwater for agricultural/irrigation purposes, Media specific restriction - restrict withdrawal or use of groundwater w/out treatment, Restrict land use - Mitigation area(s) protection, Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

Types of Engineering Controls: Fences, Markers, Signs

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

Date in Place: 199712

Modification Date: 200510

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: METALS

Additional Information

N/A

LUC Title: Engineering Controls

Site(s): BLGR-024

ROD/DD Title: BLGR-024 BATTERY BURIAL #2/OLD LANDFILL

Location of LUC

The engineer controls are located on and surrounding the site. The engineering controls at this site are:

1. A RCRA cap was approved, designed, and placed on the site, and the site was fenced in 1997.

2. In 2005, signs were posted around the landfill. The signs read:

Restricted Area
Unauthorized Personnel
Keep Out

Land Use Control (LUC) Summary

Land Use Restriction: Landfill restriction - Prohibit activities that would impact the LF cap (or cover system) and drainage system, Landfill restriction - Prohibit excavation on LF cap or cover system, Landfill restriction - Prohibit installation of utility system lines through the site, Landfill restriction - Restrict access to the site, Landfill restriction - Restrict construction of buildings that may interfere with LF cap or cover system, Landfill restriction - Restrict plantings that interfere LF cap or cover system (roots that penetrate the cap or cover system), Landfill restriction - Restrict vehicular traffic, Media specific - Prohibit activities that results in contact with contaminated sediments, Media specific restriction - Prohibit fishing except for recreational purposes (catch and release), Media specific restriction - Prohibit groundwater extraction that interferes with Remedial Action system, Media specific restriction - Prohibit swimming and/or wading, Media specific restriction - Prohibit, or otherwise manage excavation, Media specific restriction - Prohibit, or otherwise manage excavation below a specified depth, Media specific restriction - Restrict activities in surface water that result in contact with contaminated bottom sediments such as boating, diving, and swimming, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict withdrawal or use of groundwater for agricultural/irrigation purposes, Media specific restriction - restrict withdrawal or use of groundwater w/out treatment, Restrict land use - Mitigation area(s) protection, Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

Types of Engineering Controls: Fences, Signs

Types of Institutional Controls: Dig Permits, Notations in Master Plan

Date in Place: 199712

Modification Date: 200509

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: METALS, RADIOACTIVE

Additional Information

N/A

Cleanup Program Summary

Installation Historic Activity

The BGAD was originally established in April 1942 for the receipt, issuance, storage, maintenance, and disposal of ammunition. Construction of BGAD was a product of the War Department's expansion of ordnance supply depots during World War II (WWII). The installation was operated by the federal government until October 1943, at which time the operation was assumed by a corporation under the name of Blue Grass Ordnance Depot, Inc., a subsidiary of the Firestone Tire and Rubber Company. The corporation operated the installation until October 1945 when the federal government again assumed control.

The depot is an active federal government-owned, government-operated facility. The current mission of BGAD is to provide munitions, chemical defense equipment and special operations support to the Department of Defense (DoD).

Land use within the facility is comprised of areas dedicated to the demolition of ordnance and munitions, storage of ordnance and munitions, grazing land for cattle, and depot facilities. Storage of ordnance and munitions is primarily accomplished through subsurface igloos and aboveground warehouses. Disposal of ordnance and munitions is accomplished through an open burning (OB) of propellant and detonation. Approximately 30 percent of the open land not used by depot operations is leased by the government to cattle ranchers for livestock grazing.

There are several tenant activities on the depot. The largest tenants are Lockheed Martin which overhauls helicopters, Blue Grass Chemical Activity that oversees the storage of chemical agents, and the Blue Grass Chemical Agent Destruction Pilot Plant currently under construction.

Installation Program Cleanup Progress

IRP

Prior Year Progress: A performance-based acquisition (PBA) was put in place for long-term management (LTM) and exit/ramp-down implementation at sites BLGR-006, -012, 020, -024, -029, and -059.

Future Plan of Action: Monitoring and ramp/down implementation is expected to continue.

MMRP

Prior Year Progress: A Resource Conservation and Recovery Act (RCRA) facility investigation (RFI) was started at sites BLGR-001-R-01 and BLGR-003-R-01.

Future Plan of Action: Further activities at BLGR-001-R-01 and BLGR-003-R-01 will be no further action (NFA).

BLUE GRASS ARMY DEPOT

Army Defense Environmental Restoration Program
Installation Restoration Program

IRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 55/47

Installation Site Types with Future and/or Underway Phases

1 Burn Area
(BLGR-006)
1 Contaminated Ground Water
(PBA@IR BLGR)
1 Disposal Pit/Dry Well
(BLGR-012)
1 Explosive Ordnance Disposal Area
(BLGR-059)
2 Landfill
(BLGR-020, BLGR-024)
2 Surface Impoundment/Lagoon
(BLGR-013, BLGR-029)

Most Widespread Contaminants of Concern

Explosives, Metals, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern

Groundwater, Surface Water

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

Site ID	Site Name	Action	Remedy	FY
BLGR-042	DRMO STORAGE AREA	IRA	WASTE REMOVAL - SOILS	1994
BLGR-023	BATTERY BURIAL #1 (DEMO GROUNDS)	IRA	WASTE REMOVAL - SOILS	1996
BLGR-047	DRY ACID POND AREA (2)	IRA	WASTE REMOVAL - SOILS	1997
BLGR-047	DRY ACID POND AREA (2)	FRA	WASTE REMOVAL - SOILS	2000
BLGR-016	OLD TRANSFORMER STORAGE AREA	FRA	REMOVAL	2001
BLGR-024	BATTERY BURIAL #2/OLD LANDFILL/(WEST)	FRA	CAPPING	2002
BLGR-005	PROJECT CHASE AREA	FRA	REMOVAL	2003
BLGR-010	FORMER SHELL WASHOUT FAC, BLDG 1155	FRA	WASTE REMOVAL - SOILS	2003
BLGR-043	BLDG #T-252, GENERAL REFUSE INC/STO AREA	IRA	REMOVAL	2003
BLGR-044	BLDG #1178-TRANSFORMER STORAGE	FRA	WASTE REMOVAL - SOILS	2003
BLGR-002	BLDG #1161, MUSTARD SHELL DMIL AREA	FRA	REMOVAL	2004
BLGR-012	FORMER TNT LAGOONS/HOLDING PONDS (4)	FRA	WASTE REMOVAL - SOILS	2004

Duration of IRP

Date of IRP Inception: 198603

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201402/201402

Date of IRP completion including Long Term Management (LTM): 201712

IRP Contamination Assessment

Contamination Assessment Overview

The majority of hazardous waste generated at BGAD, both past and present, is the result of the demilitarization, renovation, maintenance, storage and disposal of munitions. Contamination consists mainly of metals, explosives, and volatile organic compounds (VOC) and non-VOCs. Groundwater contamination has been identified, but there is no evidence that any contamination has left the boundary of the installation.

In 1982, BGAD began proactive voluntary investigations and cleanup with surface water and groundwater quality investigations and soil investigations. Initial sampling data indicated the presence of metals and explosives.

In April 1992, the RCRA facility assessment (RFA) report was completed. As a result of the RFA and required follow-up investigations, a number of monitoring wells were installed and surface water and groundwater samples were collected and analyzed. Between 1997 and 1999 surface water and groundwater data was collected on a quarterly basis. Since then, monitoring has been conducted annually. A conceptual groundwater model has been developed.

In 2002, the monitoring network was revised following the installation of additional monitoring wells and the identification of springs associated with several solid waste management units (SWMU).

From 2005 to 2007, BGAD followed the 2004 site-wide long-term monitoring operations and maintenance plan (LTMOM) which was approved by the KDEP in a letter dated Aug. 27, 2004.

In 2007, the Hazardous, Toxic and Radioactive Waste Center of Expertise (HTRW-CX) did a five-year review of BGADs LTM program. During the review, HTRW-CX stopped reviewing the groundwater monitoring well data and recommended that BGAD modify the monitoring program. The depot began using the new HTRW-CX recommended passive sampling techniques in the 2008 sampling events at sites BLGR-006, -012, -029, and -059.

An NFA has been issued for all sites, but the six sites currently in LTM became final when the KDEP approved BGADs hazardous waste storage permit modification 1 dated September 2005. In January 2006, the KDEP issued conditional NFAs on SWMUs 2, 3, 6A, 7, 12, and 29. These NFAs were identified in permit modification 3 issued by the KDEP and dated Aug. 10,2007.

Cleanup Exit Strategy

In December 2009, a PBA contract was awarded for LTM at all six sites. The LTM will continue and exit/ramp-down strategies will be developed throughout the life of the PBA. In fiscal year (FY)12, a five-year review was started for all six sites and will be completed in FY13. If deficiencies are found during the five-year review, the deficiencies will be corrected and a report prepared documenting the deficiency corrections.

IRP Previous Studies

	Title	Author	Date
1980			
	Installation Assessment of Lexington-Blue Grass Depot Activity, USATHAMA Report No. 151	USATHAMA	APR-1980
1982			
	USATHAMA Rapid Response Environmental Surveys, Blue Grass Army Depot	ESE, Inc.	NOV-1982
1983			
	USAEHA Hazardous Waste Management Survey No. 37-26-049-84 of the Lexington-Blue Grass Depot Activity	USAEHA	MAY-1983
1986			
	Preliminary Assessment (PA)/SI for BLGR-008	Law Environmental, Inc.	JAN-1986
	RCRA Facility Assessment Report	A.T. Kearney	AUG-1986
1987			
	Law Site Investigation Report BLGR-058	Law Environmental, Inc.	JAN-1987
1989			
	Old TNT Lagoons (RFA)	Law Environmental, Inc.	JAN-1989
	New Landfill, Temporary H Storage Site (RFI)	Law Environmental, Inc.	JAN-1989
	BLGR-042 RFA	Law Environmental, Inc.	JAN-1989
	New TNT Washout & Lagoons (RFA)	Law Environmental, Inc.	JAN-1989
	RCRA Facility Investigation of the Dry Acid Pond Area, Fire Training Area, New Landfill Area, Old Landfill Area, Open Detonation Area, Pink Water Pond Area, Propellant Burn Area, and TNT Lagoon Area	Law Environmental, Inc.	JAN-1989
	Monitoring Wells Installation Report	Law Environmental, Inc.	JAN-1989
1990			
	Corrective Measures Study (CMS) for the Dry Acid Pond Area, New Landfill Area, Old Landfill Area, Open Detonation Area, Pink Water Pond, and the TNT Lagoon Area	Law Environmental, Inc.	JAN-1990
	Corrective Action Report for the Deactivation Furnace area, DRMO Storage Area, Electrolyte Storage Area, and the General Refuse Incinerator Area	Law Environmental, Inc.	JAN-1990
	BLGR-041 RFA	Law Environmental, Inc.	JAN-1990
	General Refuse Incinerator Report (RFI/CMS)	Law Environmental, Inc.	JAN-1990
	Pink Water Ponds (RFI/CMS)	Law Environmental, Inc.	JAN-1990
	Open Detonation Area (RFI/CMS)	Law Environmental, Inc.	JAN-1990
1991			
	Preliminary site inspection and file review for BLGR-001, 002, 003, 005, 006, 007, 008, 009, 010, 011, 012, 013, 014, 015, 016, 017, 018, 020, 021, 022, 023, 024, 027, 028, 030, 031, 032, 033, 034, 035, 037, 038, 039, 040, 042, 043, 044, 045, 047, 048, 049, 050, 051, 052, 053, 054, 055, 056, 057, 058, and 059	Advanced Sciences Inc.	JAN-1991
1992			

IRP Previous Studies

	Title	Author	Date
1992			
	Preliminary Site Inspection for Lexington-Blue Grass Army Depot	Advanced Sciences, Inc.	JAN-1992
	Revised RFA	USEPA and Kentucky Division of Waste Management, April 1992	APR-1992
1994			
	BLGR-021, 059 SI	Sverdrup Environmental, Inc.	JAN-1994
	Combined Sites BLGR-033, 056 (RFA Phase II sampling, SVE)	Sverdrup Environmental, Inc.	JAN-1994
	DRMO SVE Report	Sverdrup Environmental, Inc.	JAN-1994
	Mustard Burn/Mustard Trenches RFI	Sverdrup Environmental, Inc.	JAN-1994
1995			
	Dry Acid Pond RFI Phase II Report, SVE (Chase Environmental Remedial Action Work and Additional Sampling)	Chase Environmental	JAN-1995
1996			
	IRA Plan for the Mustard Burn/Mustard Trenches Area	Sverdrup Environmental, Inc.	JAN-1996
	Site Investigation Reports for the Holding Ponds (New TNT Lagoons), Temporary H Storage Area, Former Waste Ammo Detn Site, Former Shell Washout Facility, Shell	Sverdrup Environmental, Inc.	JAN-1996
	RFI Reports for the Old Landfill, New Landfill, Dry Acid Ponds Area	Sverdrup Environmental, Inc.	JAN-1996
	Old TNT Lagoons Risk Assessment	Sverdrup Environmental, Inc.	JAN-1996
	New Landfill RFA Phase II, Remedial Design	Sverdrup Environmental, Inc.	JAN-1996
	RFA Phase II sampling - Combined Sites BLGR-041 Report, SVE	Sverdrup Environmental, Inc.	JAN-1996
	Remedial Design Investigation Report for the New Landfill and the North Battery Burial Area (Old Landfill)	Sverdrup Environmental, Inc.	JAN-1996
	Old Landfill RFA Phase II, Remedial Design	Sverdrup Environmental, Inc.	JAN-1996
	Old TNT Washout Lagoons Report (RFI Phase II)	Sverdrup Environmental, Inc.	JAN-1996
	New TNT Washout & Lagoons Report (SI)	Sverdrup Environmental, Inc.	JAN-1996
1997			
	Relative Risk Site Evaluation (RRSE) for the Blue Grass Army Depot, Richmond Facility	United States Army Center for Health Promotion and Preventative Medicine (USACHPPM)	JAN-1997
	RFA Phase II/ Remedial Action BLGR-051	Sverdrup Environmental, Inc./ Chase	JAN-1997
	LTM Groundwater Sampling at BLGR-050	Sverdrup Environmental, Inc.	JAN-1997
1998			
	Site Characterization Report Demo Grounds Area	Radian, Inc.	JAN-1998

IRP Previous Studies

	Title	Author	Date
2000			
	(Phase 1) Final Conceptual Sitewide Groundwater (GW) Flow Model Developed	URS, Dames & Moore.	JAN-2000
	Depot-Wide Background Soil Investigation	Jacobs Envn., Inc.	JAN-2000
	Annual Report - Long-Term Sampling and Analysis Progress Reports	IT Corporation	JAN-2000
2001			
	Submitted the Final Report for the Phase II Site-Wide GW Assessment Monitoring System	Jacobs Engineering, Inc.	JAN-2001
	Human Health Evaluation, Risk Characterization and Development of Preliminary Remediation Goals (PRGs) for Old TNT Lagoon Area (SWMU 29) submitted to KDEP	Jacobs Engineering, Inc.	JAN-2001
	Final Report for the Depot-Wide Background Soil Investigation	Jacobs/Stratum Engineering	JUN-2001
	Annual Report - Long-term Sampling and Analysis Progress Reports	IT Corporation	SEP-2001
2002			
	Pristine Background Report, Addendum to the Final Depot-wide Background Soil Investigation Report submitted KDEP	Jacobs/Stratum Engineering	JAN-2002
	Final Report (Addendum to the Draft Report) for the Facility-Wide Screening Level Ecological Risk Assessment submitted to KDEP	Jacobs/Stratum Engineering	JAN-2002
	Final Report of the Corrective Measure Study at the Old TNT Lagoon Area (SWMU #29) submitted to KDEP	Jacobs/Stratum Engineering	JAN-2002
	Final Report (Addendum to the Draft Report) for the Facility-Wide Screening Level Ecological Risk Assessment submitted to KDEP	Jacobs/Stratum Engineering	JAN-2002
	Quarry Pond Backfill Report submitted to KDEP	IT Corporation	JAN-2002
	Final Investigation Report Sampling and Chemical Analysis Fire Training Area/Electrolyte Area submitted to KDEP	Jacobs/Stratum Engineering	JAN-2002
	2000, 2001 and 2002 Annual Report Long-Term Sampling and Analysis Program submitted to KDEP	IT Corporation	JAN-2002
	Work Plan for Remedial Actions at Project Chase & Building 1178 submitted to KDEP	AM TECH Engineering	JAN-2002
	Completed removal and disposal of small arms ammunition and residue, ordnance and explosive (OE), and OE/ non-OE scrap from the Muddy Creek located in the Former Open Burn/Open Detonation Area.	Environmental Chemical Corporation	JAN-2002
	Corrective Measure Study (CMS) for the Burning Grounds (SWMUs #2, #3, #6A, #6B, and #7) of the Demolition Area Report	Jacobs Engineering, Inc.	APR-2002
	Report of Closure Activities Old Transformer Storage Area (SWMU 21)	USACE-Louisville District.	APR-2002
	RCRA Facility Investigation at the Burning Grounds (SWMUs #2, #6A, #6B, and #7) of the Demolition Area, Report	Jacobs/Stratum Engineering	JUL-2002
	Annual Report - Long-Term Sampling and Analysis Progress Reports	IT Corporation	AUG-2002
	Removal action completed at Project Chase & Building 1178	AM Tech Corportation	NOV-2002
2003			

IRP Previous Studies

	Title	Author	Date
2003			
	Phase 3 Groundwater Assessments	URS	JAN-2003
	2003 Annual LTM Event	Shaw Environmental, Inc.	JAN-2003
	Corrective Measure Study (SWMU 17) Fire Training Area	URS	JAN-2003
	Remedial Investigations at SWMUs 12, 15 and 16	Shaw Environmental, Inc.	JAN-2003
	Removal Action Closure Report (Old TNT Lagoons Area)	Environmental Chemical Corporation	NOV-2003
2004			
	2004 Annual Report Long-term Sampling and Analysis Program	URS	JAN-2004
	Sitewide, Long-Term Monitoring, Operations, and Maintenance Plan	URS	JAN-2004
	Quality Control Plan	URS	AUG-2004
2005			
	Multi-Incremental Soil Sampling at SWMU 2 & 7	USACE Louisville District	JAN-2005
	Final Work Plan for Soil Investigation at SWMU 2 & 7	USACE Louisville District	MAR-2005
2006			
	2005 Annual Report Long-Term Management Inactive Waste Management Areas RCRA Facilities	URS	AUG-2006
	2006 Annual Report Long-Term Management Inactive Waste Management Areas RCRA Facilities	URS	OCT-2006
2007			
	2007 Annual Report Long-Term Management Inactive Waste Management Areas RCRA Facilities URS	URS	OCT-2007
2008			
	2008 Annual Report Long-Term Management Inactive Waste Management Areas RCRA Facilities	URS	NOV-2008
2009			
	2009 Annual Report Long- Monitoring Term Inactive Waste Management Areas	URS	NOV-2009
2010			
	2010 Annual Report, Long Term Monitoring Inactive Waste Management Areas	HydroGeologic, INc.	OCT-2010

BLUE GRASS ARMY DEPOT

Installation Restoration Program

Site Descriptions

Site ID: BLGR-006
Site Name: MUSTARD BURN SITE/MUSTARD TRENCHES
Alias: SWMU 2

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Surface Water

Phases	Start	End
RFA	198701	199008
CS	198803	199203
RFI/CMS	200010	200209
LTM	200210	201709

RIP Date: N/A

RC Date: 200209

SITE DESCRIPTION

The Mustard Burn Site and Mustard Trenches (SWMU 2) comprise approximately four acres located within a fenced area inside the boundaries of the demolition grounds. From 1949 to 1955 this site received approximately 900 rounds, reportedly filled with H-mustard. The rounds were broken apart with shaped charge explosives and burned with scrap wood in two unlined trenches. Upon completion of the burning, the trenches were backfilled with surrounding soil.

In 1989, during an RFI, three groundwater monitoring wells were installed and sampled. Arsenic, barium, and chromium were detected at concentrations below their respective maximum contaminant levels (MCL). In 1994 an interim remedial action (IRA) plan study, which included a geophysical survey and groundwater and surface water sampling, was conducted. Seven geophysical anomalies were identified in the area. Concentrations of explosives and metals were detected in groundwater. From 1998 through 2000 nine rounds of quarterly groundwater samples were collected and analyzed and concentrations of metals and explosives above MCLs were detected.

In 2001 the surficial soil was characterized. Twelve soil borings were advanced to one foot below ground surface (bgs) and samples were collected and analyzed for VOCs, semi-volatile organic compounds (SVOC), pesticides/polychlorinated biphenyls (PCB), explosives, dioxins/furans, and metals. PCB 1260 was detected in one sample and low levels of dioxins/furans and metals were also detected. In 2002 another RFI was completed. In October 2002 a corrective measures study (CMS) was completed and groundwater monitoring and land use controls (LUC) based on infrequent and limited use were recommended.

In 2002, two monitoring wells were abandoned. Three groundwater monitoring wells and two springs are currently being sampled as part of the installation-wide groundwater assessment program. Groundwater in this area is not used for human consumption.

In March 2005, multi-incremental soil sampling was performed. The objective of the sampling was to evaluate the soil data against US Environmental Protection Agency (USEPA) Region 9 preliminary remediation goals (PRG) as a screening criteria to determine, in part, if LUCs were required at the site. The KDEP adopted Region 9 PRGs in June 2004. In November 2005 the multi-incremental soil sampling data were provided to the KDEP. Based on the 2005 data and the Region 9 PRGs, LUCs are not required at this site.

The current monitoring system follows the 2004 site-wide LTMOM plan approved by the KDEP in their letter dated Aug. 27, 2004. Three wells and two springs are monitored at this site.

On Jan. 9, 2006, BGAD received a tentative NFA for soils from the KDEP. The NFA became final after its inclusion in the BGAD permit through a permit modification. The BGAD Hazardous Waste Operating Permit Modification 3, dated Aug. 10, 2007, granted NFA for SWMU 2 soils.

In 2007, the HTRW-CX did a five-year review of the BGAD LTM program and recommended that BGAD implement passive sampling methods. As a result, BGAD began using passive sampling methods in the 2008 sampling events.

A PBA was awarded in FY10 on Dec. 31, 2009. The PBA requires LTM at six Installation Restoration (IR) sites and a five-year review to be conducted in 2012.

Site ID: BLGR-006
Site Name: MUSTARD BURN SITE/MUSTARD TRENCHES
Alias: SWMU 2

The KDEP's letter dated Feb. 9, 2009 approved BGAD to remove the chemicals beryllium and chromium from the LTM program.

From 2009 - 2011, detected cyclotrimethylenetrinitramine (RDX) concentrations above the applicable or relevant and appropriate requirements (ARAR) have been limited to one monitoring well amd two springs; however, RDX concentrations exceeds ARARs have been detected in close proximity to SWMU 2. Sampling for energetic compounds is recommended to continue during 2012 LTM.

CLEANUP/EXIT STRATEGY

Groundwater will continue to be assessed through annual long-term monitoring (three groundwater wells and two springs). Long-term monitoring will continue through the end of the PBA FY15 to at least FY17. In FY12, a five-year review was started and will be completed in FY13.

Site ID: BLGR-012
Site Name: FORMER TNT LAGOONS/HOLDING PONDS (4)
Alias: SWMU 29

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Surface Water

Phases	Start	End
RFA	198712	198803
CS	198804	199001
RFI/CMS	200109	200203
DES	200204	200205
CMI(C)	200210	200401
LTM	200401	201709

RIP Date: N/A

RC Date: 200401

SITE DESCRIPTION

The former trinitrotoluene (TNT) Lagoons are located northeast of Lake Vega. They were in operation from the early-1940s to 1975 and received wastewater discharged from the former shell washout facility. When the shell washout facility was demolished in 1975, the holding ponds were backfilled with berm material (20 inches of soil on 10 inches of clay) and revegetated. Between 1980 and 1981 a wastewater treatment plant was constructed on a portion of the former TNT lagoon site.

Investigations conducted at the site include an environmental study in 1982, a Phase I RFI and CMS between 1989 and 1990, a Phase II RFI from 1994 to 1999, long-term sampling and analysis from 1998 to 2000, and supplemental sampling events from 1999 to 2001. Several groundwater wells were installed as part of these investigations. Human health and ecological risk evaluations were performed and identified constituents of potential concern in soil, groundwater, sediment, and surface water at levels above the KDEP acceptable risk levels. In 2002 a second CMS was completed.

The monitoring system follows the 2004 site-wide LTMOM plan approved by the KDEP in their letter dated Aug. 27, 2004. Ten wells and two springs are monitored.

Constituents detected in soil samples included two VOCs, nine explosives, three pesticides, one dioxin, and 16 metals. Of the nine explosives only two, RDX and TNT, were above one-tenth of the USEPA Region 9 PRGs. The most elevated concentrations were detected in the 1981 and 1989 investigations. With the exception of one pesticide, heptachlor, no other organic was detected above the screening criteria of one-tenth of the USEPA Region 9 PRG. Detected metals were within the range of depot-wide pristine background levels. Lead was detected above the KDEP past screening value in many soil samples, but the concentrations were within the range of ambient background levels for the area. There was no documented release of lead that can be attributed to any specific waste management activities within the Old TNT Lagoons.

Explosives and metals were detected in the groundwater. 2,4,6-TNT was the only explosive detected above the screening level. Concentrations of detected explosives have decreased over time. Metals detected in sediment and surface water were those that are naturally prevalent in the environment and are the same order of magnitude as detected in background locations at BGAD. The 2002 CMS recommended hot spot excavation, off-site disposal, and LUCs. Soil removal occurred in FY03 as a final RA. BGAD received NFA, with LUCs, from the KDEP on Jan. 17, 2004.

In November 2005, BGAD provided a resubmittal/reevaluation of analytical data for soils at this site. The goal was to achieve an NFA without LUCs for soil based on the KDEPs adoption of Region 9 PRG screening criteria in June 2004.

On Jan. 9, 2006, BGAD received a tentative NFA from the KDEP. The NFA became final when it was included in the BGAD Hazardous Waste Operating Permit Modification 3, dated Aug. 10, 2007. LUCs will not be required at this site.

In 2007 the HTRW-CX did a five-year review of the BGAD LTM program and recommended implementation of passive sampling methods beginning in the 2008 sampling events.

Site ID: BLGR-012
Site Name: FORMER TNT LAGOONS/HOLDING PONDS (4)
Alias: SWMU 29

A PBA was awarded in FY10 on Dec. 31, 2009. The PBA requires LTM at six Installation Restoration (IR) sites and a five-year review to be conducted in 2012.

From 2009 - 2011, detected energetic compound concentrations above ARARs are limited to three wells and one spring. Recommend future LTM for energetics.

CLEANUP/EXIT STRATEGY

Annual groundwater monitoring of 10 site wells and two springs will continue as part of the long-term monitoring. Long-term monitoring will continue through the end of the PBA (FY15) to at least FY17. In FY12, a five-year review was started and will be completed in FY13.

Site ID: BLGR-013
Site Name: TNT LAGOONS/HOLDING PONDS
Alias: SWMU 25

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Explosives

Media of Concern: Soil

Phases	Start	End
RFA	198604	198608
CS	199003	199008
RFI/CMS	200010	201212
CMI(C)	201203	201402

RIP Date: N/A

RC Date: 201402

SITE DESCRIPTION

The TNT washout lagoons began operation in 1976. The operation consisted of two unlined lagoons located east of building 570. The lower lagoon received treated wastewater effluent from activated carbon absorption units associated with the washout facility via a trough. In March 2010, it was discovered that the water had evaporated from the lower lagoon. Energetic constituents were detected in surface (zero - one foot bgs) soil samples collected from the bottom of the lower lagoon. During a previous investigation performed by BGAD 2,4,6-TNT was detected above the industrial soil PRG in two of the six soil samples collected and RDX was detected above the industrial soil PRG in five of the six soil samples.

In July 2010, KDEP issued a letter to cease all discharge process and condensate water to the lower lagoon.

In May 2011, as part of the fieldwork for RFI Phase I, subsurface incremental soil samples were collected from the bottom and from the outside perimeter of the lower lagoon.
Laboratory analytical results for energetic constituents in subsurface soil samples collected from within the lower lagoon and from the outside perimeter of lower lagoon were below the site screening criteria of USEPA Region 9 PRGs or Region 9 RSLs.

CLEANUP/EXIT STRATEGY

Excavation of soil will be performed.

Site ID: BLGR-020
Site Name: NEW LANDFILL
Alias: SWMU 32

STATUS

Regulatory Driver: RCRA

RRSE: MEDIUM

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

Media of Concern: Groundwater

Phases	Start	End
RFA	199003	199008
CS	199105	199201
RFI/CMS	199401	199501
LTM	199909	201709

RIP Date: N/A

RC Date: 199909

SITE DESCRIPTION

The new landfill, of approximately 1.25 acres, is located in an old limestone quarry north of the aboveground magazines on Route 81 and was in operation from the 1960s until its closure in 1979. Wastes handled at the landfill included paper products, shipping crates, office waste construction debris and general household refuse. Infectious wastes were reportedly buried in a special section of the landfill.

In 1982, an investigation was conducted and elevated concentrations of lead and chromium were detected in leachate. In 1983, a 30-inch earthen cap was placed on the landfill, but the cap was not maintained. In 1989 an RFI was conducted and surface water, sediment and soil samples were collected and several monitoring wells were installed and sampled. Following the RFI, a CMS was conducted. In 1997, a RCRA-approved cap was designed and placed on the landfill and the site was fenced. In 1999 LTM began at this site.

Low concentrations of VOCs have been detected infrequently (i.e., two or fewer samples). Prior to 1999, mercury and lead were detected in some samples above MCLs. Periodic exceedances since 1999 require monitoring.

In January 2002, a site summary document in support of the statement of basis was submitted to the KDEP. The purpose of the submission was to request NFA and to close out the site following the RCRA process. The KDEP approved the NFA conditionally. The NFA will become final when it is included in the permit, which requires permit modification and approval.

The current monitoring system follows the 2004 site-wide LTMOM plan approved by the KDEP in their letter dated Aug. 27, 2004. Nine wells are monitored at the site.

In 2007, the HTRW-CX did a five-year review of the BGAD LTM program and recommended implementation of passive sampling methods beginning in the 2008 sampling events. In the 2008 annual LTM report, BGAD requested a reduction in new landfill sampling frequency to biennially, which was approved by the KDEP on letter dated February 2009. Sampling was conducted in 2009; therefore, 2011 will be the next sampling event.

A PBA was awarded in FY10 on Dec. 31, 2009. The PBA requires LTM at six IR sites and a five-year review to be conducted in 2012.

No metal concentrations detected in the groundwater samples collected at SWMU 32 exceeds ARARs. No concentrations of metals detected in the groundwater have exceeds ARARs over the life of the LTM sampling activities.

CLEANUP/EXIT STRATEGY

The LUCs (master plan restriction of groundwater use and a digging restriction along with engineering controls) have been implemented. The LTM (cap and fence maintenance, mowing, and groundwater sampling) will continue. Beginning with the 2010 sampling event, the KDEP has approved BGAD's request for the sampling frequency to be reduced to biennial. The LTM will

continue through the end of the PBA (FY15) to at least FY17. In FY12, a five-year review was started and will be completed in FY13.

Site ID: BLGR-024
Site Name: BATTERY BURIAL #2/OLD LANDFILL/(WEST)
Alias: SWMU 35/36

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

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

Media of Concern: Groundwater

Phases	Start	End
RFA	199003	199008
CS	199105	199201
RFI/CMS	199401	199601
DES	199602	199612
CMI(C)	200009	200203
LTM	200203	201709

RIP Date: N/A

RC Date: 200203

SITE DESCRIPTION

The old landfill (SWMU 35) of approximately 3.9 acres is located on the northwest boundary of the facility in an abandoned limestone quarry; it was in operation from 1942 until its closure in 1971. Wastes handled at the facility included paper products, shipping crates, office waste, construction debris and dunnage, domestic and industrial waste sludge, contaminated plating shop solutions and transformer fluids. In 1983 the landfill was capped with a 30-inch earthen cap. Prior to capping, approximately 200,000 dry-cell batteries of unknown type were placed in the landfill. The battery burial area was designated as SWMU 36.

The landfill cap was not maintained. Refuse was exposed at the toe of the landfill and seepage was occurring from the toe and rock sidewalls of the landfill. An RFI conducted in 1989 identified low concentrations of methylene chloride and bis(2-ethylhexyl)phthalate (BEHP) in the groundwater. Concentrations of chromium, lead, mercury and silver in surface water were detected at levels potentially unacceptable for the support of aquatic life. In 1990 a CMS was completed. In 1994, sediment samples were collected from a creek and pond area; acetone, BEHP, chloride, sulfate, aluminum, arsenic, barium, beryllium, cadmium, chromium, lead, manganese, mercury, and zinc were detected in sediment samples. In 1996 an IRA plan study and remedial design (RD) investigation report were completed. In 1997 a RCRA-approved cap was designed and placed on the site and the site was fenced.

In 1998, monitoring began. Wells are sampled for VOCs, SVOCs, and metals. Pesticides/PCBs were dropped from the LTM program in the past. The VOC concentrations have been detected infrequently and at levels below state standards. The BEHP concentration has been detected above standards in some samples. Lead is the only metal that was detected above standards, but it has not been detected in any sample above standards since 1999.

In January 2001, a site summary document in support of a statement of basis for this site was submitted to the KDEP. The document was submitted to request that this site be closed out by the RCRA process.

The current monitoring system follows the 2004 site-wide LTMOM plan approved by the KDEP in their letter dated Aug. 27, 2004. Currently, six wells and two springs are being sampled.

BGAD received a tentative NFA from the KDEP. The NFA became final when it is included in the permit, which requires permit modification and approval. Based on the 2005 data and the Region 9 PRGs, LUCs will not be required at this site.

In 2007, the HTRW-CX did a five-year review of the BGAD LTM program and recommended implementation of passive sampling methods beginning in the 2008 sampling events.

In the 2008 annual report for LTM, BGAD requested that sampling frequency be reduced to biennial; this was approved by the KDEP letter dated February 2009. Sampling was conducted in 2009; therefore, the next sampling event will in 2011.

A PBA was awarded in FY10 on Dec. 31, 2009. The PBA requires LTM at six IR sites and a five-year review to be conducted in 2012.

Site ID: BLGR-024
Site Name: BATTERY BURIAL #2/OLD LANDFILL/(WEST)
Alias: SWMU 35/36

No metal concentrations were detected in the groundwater samples collected at SWMU 035 exceeded ARARs. Monitoring data indicated that no metal COCs were detected at concentrations that exceed the ARARs for three consecutive monitoring events at SWMU 035.

CLEANUP/EXIT STRATEGY

The LUCs (master plan restriction of groundwater use and a digging restriction along with engineering controls) have been implemented. The LTM (cap and fence maintenance, mowing, and groundwater sampling) will continue. Beginning with the 2010 sampling event, the KDEP has approved BGADs request that the sampling frequency be reduced to biennial. The LTM will continue through the end of the PBA FY15 to at least FY17. In FY12, a five-year review was started and will be completed in FY13.

Site ID: BLGR-029
Site Name: PINKWATER POND
Alias: SWMU 3

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater

Phases	Start	End
RFA	198908	199003
CS	199008	199102
RFI/CMS	199002	199108
LTM	199909	201709

RIP Date: N/A

RC Date: 199708

SITE DESCRIPTION

The pinkwater pond area (SWMU 3, BLGR-029) is a relatively flat grassy area near the top of a small ridge of approximately three acres located just north of Route 110 and adjacent to the propellant burn area. Surface water runoff from the site drains into a low-lying area with excess runoff to the southern tributary. The area was a very temporary structure constructed from on-site soils to accommodate startup operations of the new shell washout facility. It was reportedly used in 1976 to hold TNT wastewater discharged during a shakedown run of the washout facility. The dimensions of the pond were approximately 25 feet by 50 feet; the depth of the pond was unknown. After 1980, the pond was backfilled with soil and the site was regraded. The site is no longer being used.

In 1989, an RFI was conducted; soil and groundwater samples were collected and analyzed for explosives, but none were detected in the soil samples. From 1997 to 2000 quarterly groundwater samples were collected. Six explosives and one SVOC were detected at least once. All detections were below screening criteria.

In November 2005, BGAD provided a resubmittal/reevaluation of analytical data for soils at SWMU 3. The goal was to achieve an NFA without LUCs for soil, based on the KDEPs adoption of Region 9 PRGs in June 2004.

On Jan. 9, 2006, BGAD received a tentative NFA from the KDEP. The NFA became final when the BGAD Hazardous Waste Operating Permit Modification 3, dated Aug. 10, 2007, granted NFA for SWMU 3.

The monitoring system followed the 2004 Site-wide LTMOM plan approved by the KDEP in their letter dated Aug. 27, 2004. There are five wells and one spring monitored at this site.

In 2007, the HTRW-CX did a five-year review of the BGAD LTM program and recommended implementation of passive sampling methods beginning in the 2008 sampling events.

In the 2008 annual LTM report, the BGAD requested and KDEP approved the removal of beryllium and chromium from the LTM sampling program.

A PBA was awarded in FY10 on Dec. 31, 2009. The PBA requires LTM at six IR sites and a five-year review to be conducted in 2012.

No metals have exceeded ARARs for three consecutive rounds of sampling. The entire history of the LTM program, energetics compounds either have not been detected or have been detected at very low concentrations.

CLEANUP/EXIT STRATEGY

The groundwater will continue to be assessed through annual long-term monitoring. The long-term monitoring for BLGR-029 is funded under BLGR-059. Beginning with the 2010 sampling event, the KDEP has approved BGADs request for the removal of

beryllium and chromium from the long-term monitoring program. Long-term monitoring will continue through the end of the PBA (FY15) to at least FY17. In FY12, a five-year review was started and will be completed in FY13.

Site ID: BLGR-059
Site Name: FORMER WASTE AMMO DETONATION AREA
Alias: SWMU 7

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater

Phases	Start	End
RFA	199003	199008
CS	199201	199203
RFI/CMS	199501	200205
LTM	200206	201709

RIP Date: N/A

RC Date: 200205

SITE DESCRIPTION

The former waste ammunition detonation area, SWMU 7 (BLGR-059) is located in the demolition grounds area across the road from the old projectile burn area (BLGR-031), near the intersection of Route 117 and 110. This area was operated from 1949 to 1973; approximately 600 tons of explosive-loaded ammunition containing TNT, composition B, and tetryl were detonated annually. In order to detonate the ammunition, a pit was excavated to a depth of approximately six feet. The waste ammunition and charges were placed in the pit and covered with soil to grade. Once a mound of soil measuring six feet was placed on top, the waste ammunition was detonated. In 1973 the area was replaced by the open detonation (OD) site.

In November 2005, BGAD provided a resubmittal/reevaluation of analytical data for soils at SWMU 3, SWMU 6A and SWMU 7. The goal was to achieve an NFA without LUCs for soil, based on the KDEPs adoption of Region 9 PRGs in June 2004. On Jan. 9,2006, BGAD received a tentative NFA from the KDEP. The BGAD Hazardous Waste Operating Permit Modification 3 dated Aug.10, 2007, granted NFA for SWMU 7. Based on the 2005 data and the Region 9 PRGs, LUCs will not be required at this site.

The current monitoring system follows the 2004 site-wide LTMOM plan approved by the KDEP in their letter dated Aug. 27, 2004. There are 13 wells and one spring monitored at this site.

In 2007, the HTRW-CX did a five-year review of the BGAD LTM program and recommended implementation of passive sampling methods beginning with the 2008 sampling events.

In the 2008, annual report for LTM, BGAD requested removal of beryllium and chromium from the LTM sampling program; this request was approved by the KDEP in letter dated Feb. 9, 2009.

A PBA was awarded in FY10 on Dec. 31, 2009. The PBA requires LTM at six Installation Restoration (IR) sites and a five-year review to be conducted in 2012.

From 2009 to 2011, arsenic and selenium have not exceeded ARARs for three consecutive sampling events. RDX was not detected during the 2011 LTM sampling event. Concentrations of RDX detected within the last three years are decreasing, in the range of 1 to 2.2 micrograms per liter (ug/L).

CLEANUP/EXIT STRATEGY

The groundwater will continue to be assessed through annual LTM. The LTM for BLGR-029 is funded under this site. Beginning with the 2010 sampling event, the KDEP has approved BGAD's request for the removal of beryllium, chromium, and cadmium from the LTM program. LTM will continue through the end of the PBA to at least FY17. In FY12, a five-year review was started and will be completed in FY13. The BGAD Hazardous Waste Operating Permit Modification 3, dated Aug. 10, 2007, states and granted NFA for SWMU 7 soils from KDEP.

Site ID: PBA@IR BLGR
Site Name: PBA
Alias: PBA@IR

STATUS

Regulatory Driver: RCRA

RRSE:

Contaminants of Concern: Metals

Media of Concern: Groundwater

Phases	Start	End
RFA	199909	200009
LTM	200912	201712

RIP Date: N/A

RC Date: 200401

SITE DESCRIPTION

This site was created to track PBA dollars. The site includes BLGR-006, -012, -020, -024, -029, and -059.

In FY10 a PBA was awarded to a contractor in December 2009. The PBA included six IR sites at BGAD. The period of performance for the PBA is from Dec. 31, 2009 through Dec. 31, 2015.

The PBA@IR BLGR site is the Army Environmental Database - Restoration (AEDB-R) site designated to exclusively track the unexercised contract line item numbers (CLIN) (i.e. costs) of the BGAD PBA that pertain to the six LTM BGAD IR sites (BLGR-006, -012, -020, -024, -029, and -059).

CLEANUP/EXIT STRATEGY

Groundwater will continue to be assessed through annual long-term monitoring. Long-term monitoring will continue through the end of the FY15.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
BLGR-001	BUILDING 902, BURSTER REM AREA-BLGR 001	199201	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-002	BLDG #1161, MUSTARD SHELL DMIL AREA	200401	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-003	PROJECTILE DEMIL AREA	199201	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-005	PROJECT CHASE AREA	200309	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-007	BLDG #1170 - PROJ ASSEMBLY AREA	199201	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-008	BLDG #550 - BURSTER & FUZE REMOVAL AREA	200109	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-009	BLDG #1180 - PROJ RENOVATION AREA	199203	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-010	FORMER SHELL WASHOUT FAC, BLDG 1155	200309	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-011	BLDG #570 - NEW TNT/SHELL WASHOUT FAC	199203	NON-DERA SITE (Active Site)
BLGR-014	SURVEILLANCE (TEST) RANGE	199201	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-015	TRACER TEST RANGE	199201	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-016	OLD TRANSFORMER STORAGE AREA	200105	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-017	TRAINING AREA/GUN RANGE	199201	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-018	SEWAGE TREATMENT PLANT	199201	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-021	DEACTIVATION FURNANCE BLDG T-273	200306	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-022	WATER TREATMENT PLANT,BLDG 228	199201	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-023	BATTERY BURIAL #1 (DEMO GROUNDS)	200109	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-027	CONVENTIONAL AMMO STOR AREAS(8),848IGLOO	199201	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-028	MAGAZINE AREA-M	199201	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-030	OPEN DETONATION AREA	199002	This site is still active and is not eligible for ER,A funding.
BLGR-031	FORMER PROJECTILE PROPELLANT BURN AREA	200601	KDEP NFA for soils, future permit modification. BGAD Hazardous Waste Permit Modification 3 dated August 2007 states NFA for this site.
BLGR-032	NEW PROPELLANT BURN AREA	199909	No further action planned under IRP, the site will be incorporated into open detonation permit. This site is still active where emergency burns operation occur.
BLGR-033	BOILER BLOW DOWN DISCHARGE AREAS	200304	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-034	UNDERGROUND STORAGE TANKS (50)	199909	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-035	ABOVE GROUND STOR TANKS (46)	199008	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-037	LAB AREAS- BLDGS # -1660 & 1661	199201	KDEP NFA and BGAD's Permit dated 9/30/04.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
BLGR-038	NERVE AGENT STOR IGLOOS (F-BLOCK)	199201	ACTIVE STORAGE IGLOOS (CHEMICAL IGLOOS)
BLGR-039	PESTICIDE STORAGE AREA (S-13)	199205	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-040	SEPTIC TANKS/LEACHFIELDS (6)	199201	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-041	ELECTROLYTE STORAGE AREA(NEAR BLDG S-17)	200312	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-042	DRMO STORAGE AREA	200312	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-043	BLDG #T-252, GENERAL REFUSE INC/STO AREA	200307	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-044	BLDG #1178-TRANSFORMER STORAGE	200307	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-045	BLDG #275,CONTAMINATED WASTE PROCESSOR	199201	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-047	DRY ACID POND AREA (2)	200309	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-048	IGLOOS B-402,B-404,B-608,B-612	199203	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-049	MAINTENANCE SHOP (S-9,S-11)	199201	KDEP ltr NFA dated 5/16/06 9 (ACTIVE SHOPS)
BLGR-050	WOOD DUMP/KINDLING YARD (FIRE TRNG AREA)	200312	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-051	DERUST/REPAINT AREAS (BLDGS 550,555,562)	199203	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-052	RUBBLE PILE	199201	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-053	WASTE WATER TREATMENT FACIL. (BLDG 1173)	199201	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-054	BUILDING #218 - RECEIVING AREA	199201	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-055	BLDG #B-51, PAINT STORAGE AREA	199201	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-056	TEMPORARY H STORAGE SITE	200312	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-057	DRUM STORAGE TRENCH (NEAR RT 110)	199203	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-058	WATER TREATMENT PLANT DITCH	199203	KDEP NFA and BGAD's Permit dated 9/30/04.
BLGR-060	PAINT FILTER DISPOSAL SITE	200312	KDEP NFA and BGAD's Permit dated 9/30/04.

IRP Schedule

Date of IRP Inception: 198603

Past Phase Completion Milestones

1986	
RFA	(BLGR-013 - TNT LAGOONS/HOLDING PONDS , BLGR-047 - DRY ACID POND AREA (2))
1988	
RFA	(BLGR-012 - FORMER TNT LAGOONS/HOLDING PONDS (4), BLGR-030 - OPEN DETONATION AREA)
1990	
RFI/CMS	(BLGR-030 - OPEN DETONATION AREA, BLGR-047 - DRY ACID POND AREA (2))
PA	(BLGR-003 - PROJECTILE DEMIL AREA, BLGR-033 - BOILER BLOW DOWN DISCHARGE AREAS)
RFA	(BLGR-001 - BUILDING 902, BURSTER REM AREA-BLGR 001 , BLGR-005 - PROJECT CHASE AREA, BLGR-006 - MUSTARD BURN SITE/MUSTARD TRENCHES, BLGR-007 - BLDG #1170 - PROJ ASSEMBLY AREA, BLGR-008 - BLDG #550 - BURSTER & FUZE REMOVAL AREA, BLGR-009 - BLDG #1180 - PROJ RENOVATION AREA, BLGR-010 - FORMER SHELL WASHOUT FAC, BLDG 1155, BLGR-011 - BLDG #570 - NEW TNT/SHELL WASHOUT FAC, BLGR-014 - SURVEILLANCE (TEST) RANGE, BLGR-015 - TRACER TEST RANGE, BLGR-016 - OLD TRANSFORMER STORAGE AREA, BLGR-017 - TRAINING AREA/GUN RANGE, BLGR-018 - SEWAGE TREATMENT PLANT, BLGR-020 - NEW LANDFILL, BLGR-021 - DEACTIVATION FURNANCE BLDG T-273, BLGR-022 - WATER TREATMENT PLANT,BLDG 228, BLGR-023 - BATTERY BURIAL #1 (DEMO GROUNDS), BLGR-024 - BATTERY BURIAL #2/OLD LANDFILL/(WEST), BLGR-027 - CONVENTIONAL AMMO STOR AREAS(8),848IGLOO, BLGR-028 - MAGAZINE AREA-M, BLGR-029 - PINKWATER POND, BLGR-031 - FORMER PROJECTILE PROPELLANT BURN AREA, BLGR-032 - NEW PROPELLANT BURN AREA, BLGR-034 - UNDERGROUND STORAGE TANKS (50), BLGR-035 - ABOVE GROUND STOR TANKS (46), BLGR-037 - LAB AREAS- BLDGS # -1660 & 1661, BLGR-038 - NERVE AGENT STOR IGLOOS (F-BLOCK), BLGR-039 - PESTICIDE STORAGE AREA (S-13), BLGR-040 - SEPTIC TANKS/LEACHFIELDS (6), BLGR-041 - ELECTROLYTE STORAGE AREA(NEAR BLDG S-17), BLGR-042 - DRMO STORAGE AREA, BLGR-043 - BLDG #T-252, GENERAL REFUSE INC/STO AREA, BLGR-044 - BLDG #1178-TRANSFORMER STORAGE, BLGR-045 - BLDG #275,CONTAMINATED WASTE PROCESSOR, BLGR-048 - IGLOOS B-402,B-404,B-608,B-612, BLGR-049 - MAINTENANCE SHOP (S-9,S-11), BLGR-050 - WOOD DUMP/KINDLING YARD (FIRE TRNG AREA), BLGR-051 - DERUST/REPAINT AREAS (BLDGS 550,555,562), BLGR-052 - RUBBLE PILE, BLGR-053 - WASTE WATER TREATMENT FACIL. (BLDG 1173), BLGR-054 - BUILDING #218 - RECEIVING AREA, BLGR-055 - BLDG #B-51, PAINT STORAGE AREA, BLGR-056 - TEMPORARY H STORAGE SITE, BLGR-057 - DRUM STORAGE TRENCH (NEAR RT 110), BLGR-058 - WATER TREATMENT PLANT DITCH, BLGR-059 - FORMER WASTE AMMO DETONATION AREA, BLGR-060 - PAINT FILTER DISPOSAL SITE)
CS	(BLGR-012 - FORMER TNT LAGOONS/HOLDING PONDS (4), BLGR-013 - TNT LAGOONS/HOLDING PONDS , BLGR-021 - DEACTIVATION FURNANCE BLDG T-273, BLGR-030 - OPEN DETONATION AREA, BLGR-032 - NEW PROPELLANT BURN AREA, BLGR-047 - DRY ACID POND AREA (2))
1991	
CS	(BLGR-029 - PINKWATER POND)
RFI/CMS	(BLGR-029 - PINKWATER POND)
1992	
RFI/CMS	(BLGR-032 - NEW PROPELLANT BURN AREA)
SI	(BLGR-003 - PROJECTILE DEMIL AREA, BLGR-033 - BOILER BLOW DOWN DISCHARGE AREAS)
RFA	(BLGR-002 - BLDG #1161, MUSTARD SHELL DMIL AREA)
CS	(BLGR-001 - BUILDING 902, BURSTER REM AREA-BLGR 001 , BLGR-002 - BLDG #1161, MUSTARD SHELL DMIL AREA , BLGR-005 - PROJECT CHASE AREA, BLGR-006 - MUSTARD BURN SITE/MUSTARD TRENCHES, BLGR-007 - BLDG #1170 - PROJ ASSEMBLY AREA, BLGR-008 - BLDG #550 - BURSTER & FUZE REMOVAL AREA, BLGR-009 - BLDG #1180 - PROJ RENOVATION AREA, BLGR-010 - FORMER SHELL WASHOUT FAC, BLDG 1155, BLGR-011 - BLDG #570 - NEW TNT/SHELL WASHOUT FAC, BLGR-014 - SURVEILLANCE (TEST) RANGE, BLGR-015 - TRACER TEST RANGE, BLGR-016 - OLD TRANSFORMER STORAGE AREA, BLGR-017 - TRAINING AREA/GUN RANGE, BLGR-018 - SEWAGE TREATMENT PLANT, BLGR-020 - NEW LANDFILL, BLGR-022 - WATER TREATMENT PLANT,BLDG 228, BLGR-023 - BATTERY BURIAL #1 (DEMO GROUNDS), BLGR-024 - BATTERY BURIAL #2/OLD LANDFILL/(WEST), BLGR-027 - CONVENTIONAL AMMO STOR AREAS(8),848IGLOO, BLGR-028 -

	MAGAZINE AREA-M, BLGR-031 - FORMER PROJECTILE PROPELLANT BURN AREA, BLGR-037 - LAB AREAS- BLDGS # -1660 & 1661, BLGR-038 - NERVE AGENT STOR IGLOOS (F-BLOCK), BLGR-039 - PESTICIDE STORAGE AREA (S-13), BLGR-040 - SEPTIC TANKS/LEACHFIELDS (6), BLGR-041 - ELECTROLYTE STORAGE AREA(NEAR BLDG S-17), BLGR-042 - DRMO STORAGE AREA, BLGR-043 - BLDG #T-252, GENERAL REFUSE INC/STO AREA, BLGR-044 - BLDG #1178-TRANSFORMER STORAGE, BLGR-045 - BLDG #275,CONTAMINATED WASTE PROCESSOR, BLGR-048 - IGLOOS B-402,B-404,B-608,B-612, BLGR-049 - MAINTENANCE SHOP (S-9,S-11), BLGR-050 - WOOD DUMP/KINDLING YARD (FIRE TRNG AREA), BLGR-051 - DERUST/REPAINT AREAS (BLDGS 550,555,562), BLGR-052 - RUBBLE PILE, BLGR-053 - WASTE WATER TREATMENT FACIL. (BLDG 1173), BLGR-054 - BUILDING #218 - RECEIVING AREA, BLGR-055 - BLDG #B-51, PAINT STORAGE AREA, BLGR-056 - TEMPORARY H STORAGE SITE, BLGR-057 - DRUM STORAGE TRENCH (NEAR RT 110), BLGR-058 - WATER TREATMENT PLANT DITCH, BLGR-059 - FORMER WASTE AMMO DETONATION AREA, BLGR-060 - PAINT FILTER DISPOSAL SITE)
1994	
IRA	(BLGR-042 - DRMO STORAGE AREA)
1995	
CS	(BLGR-034 - UNDERGROUND STORAGE TANKS (50))
RFI/CMS	(BLGR-020 - NEW LANDFILL)
1996	
IRA	(BLGR-023 - BATTERY BURIAL #1 (DEMO GROUNDS))
RFI/CMS	(BLGR-024 - BATTERY BURIAL #2/OLD LANDFILL/(WEST))
DES	(BLGR-047 - DRY ACID POND AREA (2))
1997	
IRA	(BLGR-047 - DRY ACID POND AREA (2))
DES	(BLGR-024 - BATTERY BURIAL #2/OLD LANDFILL/(WEST))
1998	
RFI/CMS	(BLGR-016 - OLD TRANSFORMER STORAGE AREA)
2000	
CMI(C)	(BLGR-047 - DRY ACID POND AREA (2))
RFA	(PBA@IR BLGR - PBA)
2001	
CMI(C)	(BLGR-016 - OLD TRANSFORMER STORAGE AREA)
RFI/CMS	(BLGR-008 - BLDG #550 - BURSTER & FUZE REMOVAL AREA, BLGR-023 - BATTERY BURIAL #1 (DEMO GROUNDS))
2002	
CMI(C)	(BLGR-024 - BATTERY BURIAL #2/OLD LANDFILL/(WEST))
DES	(BLGR-012 - FORMER TNT LAGOONS/HOLDING PONDS (4))
RFI/CMS	(BLGR-002 - BLDG #1161, MUSTARD SHELL DMIL AREA , BLGR-006 - MUSTARD BURN SITE/MUSTARD TRENCHES, BLGR-010 - FORMER SHELL WASHOUT FAC, BLDG 1155, BLGR-012 - FORMER TNT LAGOONS/HOLDING PONDS (4), BLGR-031 - FORMER PROJECTILE PROPELLANT BURN AREA, BLGR-041 - ELECTROLYTE STORAGE AREA(NEAR BLDG S-17), BLGR-042 - DRMO STORAGE AREA, BLGR-044 - BLDG #1178-TRANSFORMER STORAGE, BLGR-059 - FORMER WASTE AMMO DETONATION AREA)
2003	
LTM	(BLGR-021 - DEACTIVATION FURNANCE BLDG T-273, BLGR-047 - DRY ACID POND AREA (2))
RFI/CMS	(BLGR-021 - DEACTIVATION FURNANCE BLDG T-273, BLGR-043 - BLDG #T-252, GENERAL REFUSE INC/STO AREA, BLGR-050 - WOOD DUMP/KINDLING YARD (FIRE TRNG AREA), BLGR-056 - TEMPORARY H STORAGE SITE, BLGR-060 - PAINT FILTER DISPOSAL SITE)

IRP Schedule

IRA	(BLGR-043 - BLDG #T-252, GENERAL REFUSE INC/STO AREA)
RI/FS	(BLGR-033 - BOILER BLOW DOWN DISCHARGE AREAS)
CMI(C)	(BLGR-005 - PROJECT CHASE AREA, BLGR-010 - FORMER SHELL WASHOUT FAC, BLDG 1155, BLGR-044 - BLDG #1178-TRANSFORMER STORAGE)
2004	
CMI(C)	(BLGR-002 - BLDG #1161, MUSTARD SHELL DMIL AREA , BLGR-012 - FORMER TNT LAGOONS/HOLDING PONDS (4), BLGR-041 - ELECTROLYTE STORAGE AREA(NEAR BLDG S-17), BLGR-042 - DRMO STORAGE AREA, BLGR-050 - WOOD DUMP/KINDLING YARD (FIRE TRNG AREA), BLGR-056 - TEMPORARY H STORAGE SITE, BLGR-060 - PAINT FILTER DISPOSAL SITE)
2006	
LTM	(BLGR-031 - FORMER PROJECTILE PROPELLANT BURN AREA)

Projected Phase Completion Milestones

See attached schedule

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

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

Final RA(C) Completion Date: 201402

Schedule for Next Five-Year Review: 2012

Estimated Completion Date of IRP at Installation (including LTM phase): 201712

BLUE GRASS ARMY DEPOT IRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
BLGR-006	MUSTARD BURN SITE/MUSTARD TRENCHES	LTM						
BLGR-012	FORMER TNT LAGOONS/HOLDING PONDS (4)	LTM						
BLGR-013	TNT LAGOONS/HOLDING PONDS	RFI/CMS						
		CMI(C)						
BLGR-020	NEW LANDFILL	LTM						
BLGR-024	BATTERY BURIAL #2/OLD LANDFILL/(WEST)	LTM						
BLGR-029	PINKWATER POND	LTM						
BLGR-059	FORMER WASTE AMMO DETONATION AREA	LTM						
PBA@IR BLGR	PBA	LTM						

BLUE GRASS ARMY DEPOT

Army Defense Environmental Restoration Program
Military Munitions Response Program

MMRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 5/2

Installation Site Types with Future and/or Underway Phases

1 Training and Maneuver Area
(PBA@MR BLGR)

2 Unexploded Munitions/Ordnance
(BLGR-001-R-01, BLGR-003-R-01)

Most Widespread Contaminants of Concern

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

Media of Concern

Groundwater, Soil

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

Site ID	Site Name	Action	Remedy	FY
N/A				

Duration of MMRP

Date of MMRP Inception 200304

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201212/201212

Date of MMRP completion including Long Term Management (LTM): 201212

MMRP Contamination Assessment

Contamination Assessment Overview

The DoD has established the MMRP under the Defense Environmental Restoration Program (DERP) to address DoD sites with MEC including unexploded ordnance (UXO), discarded military munitions (DMM), and MC.

The US Army's inventory of closed, transferring, and transferred (CTT) military ranges and sites identified three sites eligible for action under the MMRP.

The MMRP-eligible sites include sites other than operational ranges where UXO, DMM and MC are known or suspected. Properties classified as operational ranges are not eligible; therefore, they are excluded from the MMRP.

The MMRP began in the late-1990s as a result of key drivers such as processes outlined in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP -40 CFR 300) as authorized by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 US Code (U.S.C.) 9605, as amended by the Superfund Amendments and Reauthorization Act of 1986, (CERCLA), Pub. L. 99-499.

The process began with three phases of range inventories. Phase I consisted of installations completing an initial data call. The USAEC managed the implementation of Phases II and III of the MMRP inventory.

The Phase II inventory dealt with active and inactive range considerations. Phase III involved the CTT range inventory conducted in FY03. Included were extensive mapping, data collection for upload to the Army range inventory database, an assessment of explosives safety risk using the risk assessment code (RAC) methodology for CTT ranges or sites with UXO or DMM identified in the inventory, and a determination of which sites on the inventory potentially qualify for the MMRP.

The CTT range inventory recommended that the area south of an OD area, a waste ammunition detonation area, and a projectile/propellant burn area be eligible for further investigation in the historical records review (HRR).

During the HRR of the National Guard Camp Area in October 2006, no off-post contamination or responses were issued. No complicating factors or uncertainties were identified.

The March 2007 final HHR report recommended all three sites for preliminary assessment (PA)/site inspection (SI)/RFA for MEC and MC.

The PA/SI/RFA fieldwork was conducted in November 2007 and April 2008. The September 2008 final report recommends that the area south of the OD area be investigated via remedial investigation (RI)/RFI for MC and NFA for MEC, the projectile and propellant burn area be investigated via RI/RFI for MC and NFA for MC, and the National Guard campground area is NFA for both MEC and MC.

The RFI at area south of OD Unit (BLGR-001-R01) will consist of eight acres to be investigated for MC.

The RFI for projectile/propellant burn area (BLGR-003-001) will consist of 7.4 acres and will be investigated for MEC.

The RFI fieldwork was completed in November 2011. The final report will anticipate NFA at sites.

Cleanup Exit Strategy

Currently, there are two sites listed under the BGAD MMRP. No off-post contamination or responses have been issued. No complicating factors or uncertainties have been identified. In December 2009, a PBA contract was awarded for the RFI at the two MMRP sites. The installation completed the RFI in November 2011 and an NFA is anticipated.

MMRP Previous Studies

	Title	Author	Date
2003			
	Closed, Transferring, and Transferred Range/Site Inventory Report, Blue Grass Army Depot, Kentucky, Army Materiel Command, USACE-Omaha Contract DACA-45-00-D-0010, Task Orders 0005	engineering and environment Management, Inc.	JAN-2003
2007			
	Final Historical Records Review Blue Grass Army Depot, Kentucky	URS Group, Inc.	MAR-2007
	Final RCRA Facility Assessment Work Plan	URS Group, INC	SEP-2007
2008			
	Final PA/SI/RFA Report	URS Group, Inc	SEP-2008
2011			
	Final MMRP RFI Work Plan	HydroGeologic, INC	SEP-2011

BLUE GRASS ARMY DEPOT

Military Munitions Response Program

Site Descriptions

Site ID: BLGR-001-R-01
Site Name: AREA SOUTH OF THE OD UNIT
Alias: None

STATUS

Regulatory Driver: RCRA

MRSPP Score: 05

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	200304	200312
CS	200606	200809
RFI/CMS	201111	201212

RIP Date: N/A

RC Date: 201212

SITE DESCRIPTION

The area south of the OD Unit (BLGR-001-R-01), between the southern tributary of Muddy Creek and the BGAD boundary, may have been impacted by historical OD operations. Though this area is not recognized as part of the OD unit, the CTT range inventory found that the munitions response site (MRS) may have been impacted by munitions and ordnance blown from and/or washed off the OD unit. Historical photographs and interviews with installation personnel confirmed that OD operations took place farther to the south, thereby impacting properties south of the OD unit. OD operations progressed northward as soils were depleted. The OD operations within the unit began in 1942 and continue to this day. A review of a series of aerial photographs from 1949 through 1973 shows that by 1966 operations had progressed to their current location, centrally, within the unit.

Dates of use for BLGR-001-R-01 are estimated to be from 1942 to 1966. The boundaries of the area were modified from those reported in the CTT range inventory to exclude areas within the quantity distance (QD) safety arc of the currently active OD unit, resulting in a revised size of 54.7 acres.

Based on information obtained during the HRR, munitions that may have impacted BLGR-001-R-01 include large and medium caliber munitions, small arms, explosives, landmines, ground rockets, hand grenades, mortars, propellants, and pyrotechnics which were destroyed at the OD unit using demolition materials, detonators, blasting caps, detonating cord, and time fuses.

In 2007, the HRR was completed and the confirmation sampling (CS) phase was initiated for this site. Preliminary findings do not indicate that MEC is present. The CS work plan dated September 2007 proposed that MEC and MC be investigated at this site. The CS field activities were conducted in November 2007. The September 2008 CS report recommended further investigation via RFI for MC and NFA for MEC.

The CTT range inventory recommended that the area south of the OD area, a waste ammunition detonation and projectile/propellant burn area, be eligible for further investigation in the HRR.

The March 2007 final HRR report recommended all three sites for PA/SI/RFA for MEC and MC. The PA/SI/RFA fieldwork was conducted in November 2007 and April 2008. The September 2008 final report recommends that the area south of OD be investigated via RI/RFI for MC and NFA for MEC.

The fieldwork started in November 2011 and the draft report will be completed in March 2012. The Final RFI is expected to be completed in October 2012. After the RFI is completed, NFA is anticipated.

CLEANUP/EXIT STRATEGY

An NFA is anticipated after completion of the RFI.

Site ID: BLGR-003-R-01
Site Name: PROJECTILE/PROPELLANT BURN AREA
Alias: None

STATUS

Regulatory Driver: RCRA

MRSPP Score: 04

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	200304	200312
CS	200606	200809
RFI/CMS	201111	201212

RIP Date: N/A

RC Date: 201212

SITE DESCRIPTION

In the RFI completed for these areas in 2002, the sites were referred to as the old projectile burn area and the former propellant burn area. These sites are managed within the active Army MMRP as a single site, combined MRS under AEDB-R number BLGR-003-R-01 as the projectile/propellant burn area, located south-centrally within the installation's demolition ground and restricted area. Information gathered during the HRR found that portions of BLGR-003-R-01 are not eligible for the active Army MMRP because they lie within the QD safety arc for the active OD unit, and the potential for impact by ongoing OD unit activities continues; however, 10.8 acres outside the QD safety area are eligible for the active Army MMRP.

The active Army MMRP-eligible portion of the old projectile burn area comprises 6.2 acres located north of Route 110 and west of the intersection with Route 117. The area was used from 1942 to 1985. Operations at the site included melting out and open burning of large caliber projectiles and propellants.

The active Army MMRP-eligible portion of the former propellant burn area comprises 4.6 acres located southwest of the intersection of Routes 110 and 117. The former propellant burn area is separated from the active new propellant burn area by a berm that serves as the former area's western boundary. Beginning in 1942, the former propellant Burn Area was used for the OB of propellant powder, pyrotechnics, and explosive charges from demilitarized munitions. Munitions containing white phosphorous (WP) were also reportedly burned on-site. Approximately 1,000 tons of explosives were destroyed at the site each year until operations ceased in 1979.

Based on information obtained during the HRR, munitions that may have impacted the projectile/propellant burn area MRS include rocket warheads and motors, rocket fuses, and projectiles.

In September 2002, an RFI was completed for these areas under the IR program under AEDB-R site BLGR-031. The CMS was performed in October 2002 to evaluate potential RA alternatives for the soils at the west, east, and south burn areas. MC was detected at the sites, and results of geophysical surveying and mapping revealed the potential for buried ordnance, munitions, and other explosive materials in the subsurface soils at the south burn area.

In December 2005, BGAD resubmitted to the KDEP the analytical data for contaminants of concern (COC) that had previously failed screening criteria. This data was screened against Region 9 PRGs which the KDEP adopted in 2004. The KDEP issued an NFA letter for soils dated Jan. 9, 2006; therefore, institutional controls are not required for MC.

In 2007, the HRR was completed and the CS phase was initiated for this site. Preliminary findings do not indicate that MEC is present at the site. The September 2007 CS work plan proposed that MEC and MC be investigated at this site. The CS field activities were conducted in November 2007. The September 2008 CS report recommended further investigation via RFI for MC and NFA for MEC.

The CTT range inventory recommended that the area south of an OD area, a waste ammunition detonation area, and a projectile/propellant burn area, be eligible for further investigation in the HRR.

The March 2007 final HRR report recommended all three sites for PA/SI/RFA for MEC and MC. The PA/SI/RFA fieldwork was conducted in November 2007 and April 2008. The final report dated September 2008 recommends that BLGR-003-R-01 be

investigated via RI/RFI for MC and NFA for MC.

The fieldwork started in November 2011 and the draft report will be completed in March 2012. The Final RFI is expected to be completed in October 2012. After the RFI is completed, NFA is anticipated.

CLEANUP/EXIT STRATEGY

An NFA is anticipated after completion of the RFI.

Site ID: PBA@MR BLGR
Site Name: PBA for sites located in Restricted
Alias: PBA

STATUS

Regulatory Driver: RCRA

MRSPP Score: 05

Phases	Start	End
RFA	200304	200312
CS	200606	200809
RFI/CMS	200912	201212

RIP Date: N/A

RC Date: 201212

SITE DESCRIPTION

This site was created to track PBA dollars. The site includes BLGR-001-R-01 and BLGR-003-R-01.

In FY10 a PBA was awarded to a contractor in December 2009. The PBA included the RFIs at two MMRP sites at BGAD. The period of performance for the PBA is from Dec. 31, 2009 through Dec. 31, 2015. PBA@MR BLGR is the AEDB-R site designated to exclusively track the sites (BLGR-001-R-01 and BLGR-003-R-01) under task order PBA@MR BLGR.

CLEANUP/EXIT STRATEGY

The RFI fieldwork was completed at the area south of the OD unit and the projectile/propellant burn area. An NFA is anticipated for both sites.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
BLGR-002-R-01	PINK WATER POND/WASTE AMMO DET AREA	200809	
BLGR-004-R-01	NATIONAL GUARD CAMP AREA	200809	

MMRP Schedule

Date of MMRP Inception 200304

Past Phase Completion Milestones

2004

RFA (BLGR-001-R-01 - AREA SOUTH OF THE OD UNIT, BLGR-002-R-01 - PINK WATER POND/WASTE AMMO DET AREA, BLGR-003-R-01 - PROJECTILE/PROPELLANT BURN AREA, BLGR-004-R-01 - NATIONAL GUARD CAMP AREA, PBA@MR BLGR - PBA for sites located in Restricted)

2008

CS (BLGR-001-R-01 - AREA SOUTH OF THE OD UNIT, BLGR-002-R-01 - PINK WATER POND/WASTE AMMO DET AREA, BLGR-003-R-01 - PROJECTILE/PROPELLANT BURN AREA, BLGR-004-R-01 - NATIONAL GUARD CAMP AREA, PBA@MR BLGR - PBA for sites located in Restricted)

Projected Phase Completion Milestones

See attached schedule

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

To Be Determined

Final RA(C) Completion Date:

Schedule for Next Five-Year Review: 2012

Estimated Completion Date of MMRP at Installation (including LTM phase): 201212

BLUE GRASS ARMY DEPOT MMRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
BLGR-001-R-01	AREA SOUTH OF THE OD UNIT	RFI/CMS						
SITE ID	**SITE NAME**	**PHASE**	**FY13**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18+**
BLGR-003-R-01	PROJECTILE/PROPELLANT BURN AREA	RFI/CMS						
SITE ID	**SITE NAME**	**PHASE**	**FY13**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18+**
PBA@MR BLGR	PBA for sites located in Restricted	RFI/CMS						

Community Involvement

Technical Review Committee (TRC): None

Community Involvement Plan (Date Published): 199812

Restoration Advisory Board (RAB): No

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

Community Interest Solicited on: 200309

Efforts Taken to Determine Interest

In December 1998, a RAB was established for the environmental restoration cleanup of BGAD. Periodic meetings include activities such as installation tours and presentations by Operations Support Command, BGAD, the USACE, environmental contractors, and KDEP personnel. The installation also provides RAB members with fact sheets and copies of site documents. Community members are invited to all RAB meetings; several have attended.

Results

The RAs and other environmental restoration work were successfully completed at BGAD with an exception for some long-term monitoring. A five-year review will occur at the landfill sites due to hazardous constituents left in place. The depot's RCRA Part B hazardous waste storage permit identifies the site as requiring NFA. There is no further need for the RAB and the RAB has unanimously voted to adjourn.

Follow-up Procedures

Under the MMRP, community interest will be conducted in the Richmond and Madison County area for the kickoff RFI meeting which is scheduled for FY11.

Additional Community Involvement Information

The RAB members were from a diverse group in the local community, the KDEP, the USACE, the staff, and subject matter experts from the USAEC, Installation Operations Command, AMC and Army installation. The first notice about the RAB appeared on a fact sheet in the Richmond Register in the fall 1997 and an article appeared in the Lexington Herald Leader in the fall 1998. The BGAD RAB met every other month unless there was a need to meet more frequently. The BGAD RAB reviewed and provided comments on technical reports and documents, took facility tours, adopted bylaws, and established administrative record documents. The estimated funding has been expended on the RAB. In September 2003 the RAB was adjourned.

Administrative Record is located at

Blue Grass Army Depot
Environmental Division
431 Battlefield Memorial Highway
Building S-14
Richmond, KY 40475
(859) 779-6532

Information Repository is located at

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431 Battlefield Memorial Highway
Building S-14
Richmond, KY 40475
(859) 779-6532

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

TAPP Title: N/A

Potential TAPP: N/A