

FY2012

ANNISTON 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 restoration manager, the US Army Environmental Command (USAEC), Anniston Army Depot (ANAD), 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

ADEM	Alabama Department of Environmental Management
AEDB-CC	Army Environmental Database - Compliance-related Cleanup
AEDB-R	Army Environmental Database - Restoration
AL	Alabama
AMC	Army Materiel Command
ANAD	Anniston Army Depot
AOC	Area of Concern
ARBCA	Alabama Risk Based Corrective Action
ASA	Ammunition Storage Area
AST	Aboveground Storage Tank
ATSDR	Agency for Toxic Substances and Disease Registry
AVLB	Armored Vehicle Launched Bridge
AWWSB	Anniston Water Works and Sewer Board
BEHP	Bis 2-ethylhexyl phthalate
Bldg	Building
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CC	Compliance-related Cleanup
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CGW	Combined Groundwater
CIP	Community Involvement Plan
CMI(C)	Corrective Measures Implementation - Construction
CMI(O)	Corrective Measures Implementation - Operations
CMS	Corrective Measures Study
COC	Contaminants of Concern
CR	Compliance Restoration
CS	Confirmatory Sampling
CTT	Closed, Transferring and Transferred
DD	Decision Document
DERP	Defense Environmental Restoration Program
DES	Design
DoD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
ER,A	Environmental Restoration, Army
ERP	Emergency Response Program
ESI	Expanded Site Inspection
FFA	Federal Facilities Agreement
FFS	Focused Feasibility Study
FRA	Final Remedial Action
FS	Feasibility Study
FY	Fiscal Year
gpd	gallons per day
GWIS	Groundwater Interceptor System
GWTP	Groundwater Treatment Plant
HRS	Hazard Ranking System
IAP	Installation Action Plan

Acronyms

ID	Identification
IM	Interim Measures
IMP(C)	Implementation (Construction)
IMP(O)	Implementation (Operations)
INV	Investigation
IR	Installation Restoration
IRA	Interim Remedial Action
IROD	Interim Record of Decision
IRP	Installation Restoration Program
ISC	Initial Site Characterization
IT	International Technology Corporation
IWTP	Industrial Wastewater Treatment Plant
JEG	Jacobs Engineering Group
K	thousand
kg	kilogram
LTM	Long-Term Management
LUC	Land Use Control
MC	Munitions Constituent
MCL	Maximum Contaminant Level
MEC	Munitions and Explosives of Concern
mg	milligram
mg/L	milligram per liter
mm	Millimeter
MMRP	Military Munitions Response Program
MNA	Monitored Natural Attenuation
MR	Munitions Response
MRS	Munitions Response Site
N/A	Not Applicable
NAPL	Non-Aqueous Phase Liquid
NFA	No Further Action
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
ODUSD (I&E)	Office of the Deputy Under Secretary of Defense for Installations and Environment
OU	Operable Unit
PA	Preliminary Assessment
PIRP	Public Involvement and Response Plan
POL	Petroleum, Oil and Lubricants
PRG	Preliminary Remediation Goals
QAPP	Quality Assurance Project Plan
RA	Remedial Action
RA(C)	Remedial Action - Construction
RA(O)	Remedial Action - Operations
RAB	Restoration Advisory Board
RC	Response Complete

Acronyms

RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SAIC	Science Applications International Corp.
SARA	Superfund Amendments and Reauthorization Act
SI	Site Inspection
SIA	Southeast Industrial Area
SOP	Standard Operating Procedure
sq ft	square feet
STP	Sewage Treatment Plant
SVOC	Semi-Volatile Organic Compound
SWMU	Solid Waste Management Unit
TAPP	Technical Assistance for Public Participation
TBD	To Be Determined
TI	Technical Impracticability
TNT	Trinitrotoluene
TOW	Tube-Launched, Optically Tracked Wire-Guided
TRC	Technical Review Committee
US	United States
USACE	US Army Corps of Engineers
USAEC	US Army Environmental Command
USC	US Code
USEPA	US Environmental Protection Agency
UST	Underground Storage Tank
VI	Vapor Intrusion
VOC	Volatile Organic Compound
WIA	Western Industrial Area
WWII	World War II

Acronym Translation Table

CERCLA

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

RCRA

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

CERCLA

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

RCRA Underground Storage Tank (UST) Site Phase Terms

= Initial Site Characterization(ISC)
= Investigation(INV)
= Corrective Action Plan(CAP)
= Design(DES)
= Implementation (Construction)(IMP(C))
= Implementation (Operations)(IMP(O))
= Long Term Management(LTM)
= Interim Remedial Action(IRA)

Site Alias List

AEDB-R Site ID to Alias List

AEDB-R #	Alias
ANAD-001-R-01	RIFLE RNG
ANAD-002-R-01	PISTOL RNG
ANAD-003-R-01	BURNING GD
ANAD-01	SWMU-01
ANAD-05	SWMU-05
ANAD-07	SWMU-07
ANAD-08	SWMU-08
ANAD-09	SWMU-09
ANAD-10	SWMU-10
ANAD-11	SWMU-11
ANAD-12	SWMU-12
ANAD-13	SWMU-13
ANAD-19	SWMU-19
ANAD-20	SWMU-20
ANAD-21	SWMU-21
ANAD-22	SWMU-22
ANAD-23	SWMU-23
ANAD-24	SWMU-24
ANAD-27	SWMU-27
ANAD-28	SWMU-28
ANAD-29	SWMU-29
ANAD-30	SWMU-30
ANAD-31	SWMU-31
ANAD-35	SWMU-35
ANAD-46	SWMU-46
ANAD-48	AOC-A
CC-ANAD-02	Bldg 504
CC-ANAD-04	CC-ANAD-04
CC-ANAD-05	CC-ANAD-05

Installation Information

Installation Locale

Installation Size (Acreage): 15200

City: Anniston

County: Calhoun

State: Alabama (AL)

Other Locale Information

ANAD is located in Calhoun County in northeastern Alabama. It is 110 miles west of Atlanta, Georgia and 50 miles east of Birmingham, Alabama. The city of Anniston is located 10 miles east of the depot. The depot is surrounded by a series of small communities clustered primarily along the southern and eastern boundaries of the depot and is bordered on the north by the Pelham Range portion of the former Fort McClellan Military Reservation.

Installation Mission

ANAD is the only Army depot capable of performing maintenance and overhaul on both heavy and light-tracked combat vehicles and their components. The depot is designated as the Center for Technical Excellence for several families of combat vehicles (M-1 Abrams battle tank, M-88 tank recovery vehicle, M-113 armored personnel carrier, M-109 Paladin, Assault Breacher Vehicle, M-9 ACE combat engineer vehicle, Assault Bridging Vehicle, and Stryker Vehicles). The depot also maintains and repairs the Department of Defense (DoD) inventory of towed howitzers and small arms.

ANAD stores, maintains and demilitarizes munitions through a tenant organization: the Anniston Defense Munitions Center. Another tenant, the Defense Logistics Agency (DLA), receives, stores, and ships military equipment and materials. DLA is also responsible for demilitarization and disposal of excess government equipment and materials. The Anniston Chemical Activity and the Anniston Chemical Agent Disposal Facility have recently completed their missions of storing, maintaining, and demilitarizing chemical munitions and surety material and are now in the closure phase of their missions.

Lead Organization

Army Materiel Command (AMC)

Lead Executing Agencies for Installation

US Army Corps of Engineers (USACE), Mobile District

Regulator Participation

Federal	US Environmental Protection Agency (USEPA), Region IV
State	Alabama Department of Environmental Management (ADEM)

National Priorities List (NPL) Status

A score of 52 was recorded on 01-MAR-89.

Date for RA(C) Completion: 201509

Date for NPL Deletion: TBD

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

RAB established 199805

Installation Information

Installation Program Summaries

IRP

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

Affected Media of Concern: Groundwater, Soil

MMRP

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

Affected Media of Concern: Groundwater, Soil

CR

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

Affected Media of Concern: Groundwater, Soil

5-Year / Periodic Review Summary

5-Year / Periodic Review Summary

Status	Start Date	End Date	End FY
Complete	200904	201009	2010
Complete	200309	200412	2005
Complete	199810	199810	1999
Planned	201401	201504	2015

Last Completed 5-Year / Periodic Review Details

Associated ROD/DD Name	Sites
Ammunition Storage Area	ANAD-05, ANAD-08, ANAD-10, ANAD-11, ANAD-14, ANAD-15, ANAD-18, ANAD-26, ANAD-27, ANAD-35, ANAD-37
Ammunition Storage Area	ANAD-05, ANAD-08, ANAD-10, ANAD-11, ANAD-14, ANAD-15, ANAD-18, ANAD-26, ANAD-27, ANAD-35, ANAD-37
GROUNDWATER OPERABLE UNIT	ANAD-01, ANAD-07, ANAD-12, ANAD-22, ANAD-25, ANAD-30, ANAD-31
GROUNDWATER OPERABLE UNIT	ANAD-01, ANAD-07, ANAD-12, ANAD-22, ANAD-25, ANAD-30, ANAD-31
SIA Soils Operable Unit	ANAD-02, ANAD-03, ANAD-04, ANAD-06, ANAD-07, ANAD-09, ANAD-12, ANAD-13, ANAD-19, ANAD-20, ANAD-21, ANAD-22, ANAD-23, ANAD-24, ANAD-28, ANAD-29, ANAD-30, ANAD-31, ANAD-38, ANAD-40, ANAD-41, ANAD-43, ANAD-44
SIA Soils Operable Unit	ANAD-02, ANAD-03, ANAD-04, ANAD-06, ANAD-07, ANAD-09, ANAD-12, ANAD-13, ANAD-19, ANAD-20, ANAD-21, ANAD-22, ANAD-23, ANAD-24, ANAD-28, ANAD-29, ANAD-30, ANAD-31, ANAD-38, ANAD-40, ANAD-41, ANAD-43, ANAD-44

Results OU-1: Interim remedy not protective. System operating w/no significant contaminate reduction. Exposure pathways monitored. Improved processes under evaluation. LUCs in-place.
 OU-2: Remedy protective. LUCs in-place.
 OU-3: Remedy protective. LUCs in-place.

Actions OU-1: Repaired geotex. & cap erosion. Vapor intrusion evaluation underway. GWIS pumps reprogramming underway.
 OU-3: Contract award underway for semiannual monitoring.

Plans OU-1: Review GWIS data. Adjust treatment as necessary.
 OU-3: Discuss addition of 1-4 dichlorobenzene & 1,1 DCE to monitoring. Discuss addition of 2,4-DNT, 2,6-DNT, 2-amino-4,6-DNT, & 4-amino-2,6-DNT to COC list.

Recommendations and Implementation Plans:

During the Tier I partnering team meeting on Sept. 9, 2011, the team discussed the recommendations in the third five-year review. ANAD indicated that four of the seven recommendations were completed or currently underway including: review of influent/effluent data for the GWIS; repairs of geotextile and cap erosion at affected solid waste management units (SWMUs); the vapor intrusion investigation; and the addition of manual control ability to the GWIS pumps. For two of the remaining recommendations for OU3, the team agreed not to change the recommended sampling frequency from annual to semiannual or add the proposed chlorinated solvent analysis at this time due to the increased cost, recent changes in the USEPAs monitored natural attenuation (MNA) protocol, and minimal data trend benefits; however, the team did agree to accept the recommendation to add the explosive breakdown products at SWMU 10, 11, and associated downgradient wells to future sampling events.

Land Use Control (LUC) Summary

LUC Title: OU-2 LUCs

Site(s): ANAD-07, ANAD-09, ANAD-12, ANAD-13, ANAD-29, ANAD-30

ROD/DD Title: SIA Soils Operable Unit

Location of LUC

ANAD-7, ANAD-9/12, ANAD-13, ANAD-29/30

Land Use Restriction: Media specific - Prohibit activities that results in contact with contaminated sediments, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Media specific restriction - restrict withdrawal or use of groundwater for agricultural/irrigation purposes, Restrict land use - No residential use

Types of Engineering Controls: Signs

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

Date in Place: 200604

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200604

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: METALS, VOC

Additional Information

N/A

LUC Title: OU-3 LUC

Site(s): ANAD-05, ANAD-08, ANAD-10, ANAD-11, ANAD-27, ANAD-35

ROD/DD Title: Ammunition Storage Area

Location of LUC

Ammunition Storage Area

Land Use Restriction: 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

Types of Engineering Controls: Signs

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

Date in Place: 200604

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: INORGANICS, METALS

Additional Information

N/A

Cleanup Program Summary

Installation Historic Activity

The roughly square-shaped configuration of ANAD encompasses 15,200 acres. Ammunition storage bunkers within the ammunition storage area (ASA) occupy the majority of the depot. The southeast industrial area (SIA) contains the depot's industrial facilities. Additional areas, primarily along the depot's southern boundary, are allocated for warehouse storage, fuel storage, administrative services, and recreation. The ANAD is one of the major employers in the Anniston area. Approximately 6,700 people work on the installation. Approximately 4,250 of them are Department of Army civilians and the rest are tenant employees and contractors. Land use around ANAD is primarily rural, residential, cropland/pasture, and mixed forest. Some industrial land use has begun on the southern boundary with Kronospan LLC and Bridgewater Interiors LLC. Kronospan is a manufacturer of wood panel products and laminate flooring. Bridgewater is a manufacturer of automobile seats. Their presence significantly changes the environmental setting for the west area.

The US Army began operations at the depot in 1941. Since then, the depot mission has included the storage of munitions and the refurbishment, testing, and decommissioning of combat vehicles and various types of ordnance.

The initial mission for the depot was defined as munitions storage. Construction operations for the depot were formally initiated on Feb. 17, 1941 and the first ammunition storage magazines were completed on Oct. 3, 1941. During World War II (WWII), the mission of the depot was expanded to include a combat equipment storage area, where over 1,230,000 tons of equipment were handled.

Over the years, ANAD's mission was further expanded to include the following:

- overhaul and repair of ordnance vehicles;
- fire control and small arms rebuild (gained from the Augusta Arsenal which was closed in 1954);
- modification of M48A1 tanks and M67 flame throwers;
- calibration support for the southeastern states; and
- logistics support for the Lance missile, Tube-launched, Optically-tracked Wire-guided (TOW) systems, and the Dragon missile.

The bulk of this work was conducted in the SIA.

The present mission of ANAD includes maintaining combat vehicles such as the M-1 Abrams tank, M-60 and M-113 series, and towed and self-propelled artillery. The operation to store and demil chemical weapons and surety material is complete and closure operations are under way.

The ANAD mission has required the use of a variety of industrial processes, such as plating, painting, degreasing, sand blasting, paint stripping and steam cleaning. The various activities at ANAD since 1941 contributed to the COCs. The most widespread COCs are industrial wastes, including spent solvents, heavy metals and petroleum, oil and lubricants, as well as explosives contamination.

Construction of a large chemical weapons destruction facility was completed in 2003. It is located in the north-central portion of the ASA. The operation was completed in 2012. Closure of this facility is ongoing.

On March 31, 1989, the USEPA placed the ANAD SIA on the NPL because of a hazard ranking system (HRS) score of 51.91. On June 13, 1990 a federal facility agreement (FFA) between the USEPA Region IV, the ADEM, and the Department of Army was signed into effect for ANAD. The FFA identifies 44 SWMUs within ANAD: 15 in the ASA and 29 in the SIA.

Four SWMUs were added as sites in the Army Environmental Database - Restoration (AEDB-R) but these have not been added to the FFA. Three of these additional sites are underground storage tank (UST) sites for which ADEM issued notices of violation (NOV) under their UST regulations. The fourth site (ANAD-48) incorporates the western industrial area (WIA) groundwater. The FFA integrates the Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA)/Superfund Amendments and Reauthorization Act (SARA) requirements for the entire depot. The scope of the FFA requires the Army to conduct a remedial investigation (RI)/feasibility study (FS) for all applicable SWMUs within ANAD, followed by the development and implementation of remedial design (RD)/RA.

The ASA is not on the NPL, but is addressed in the FFA.

ANAD discharges wastewater under a National Pollutant Discharge Elimination System (NPDES) permit that was originally granted in 1986 and was last renewed in 2007. The NPDES permit includes discharges from an industrial wastewater treatment

Cleanup Program Summary

Installation Historic Activity

plant, a sewage treatment plant (STP), and two groundwater treatment units. In 1997, a RCRA permit was issued to ANAD.

In April 1997, a partnering team was formed at ANAD. The team includes representatives from ANAD, USACE, USAEC, the ADEM, USEPA and Army contractors. This is not a legally binding relationship, but a commitment and agreement to work together as a team to achieve mutually beneficial goals.

In FY05, SWMUs addressed under the Installation Restoration Program (IRP) were grouped into five OUs. Previous to FY05 there were three OUs at ANAD, which did not include all SWMUs in the IRP. The current OU designations are: the SIA groundwater OU (OU-1), the SIA soils OU (OU-2), the ASA OU (OU-3), the Military Munitions Response Program (MMRP) OU (OU-4), and the WIA OU (OU-5). The ANAD implemented an RA which includes soil excavation, capping, and LUCs associated with the ASA and soils OUs.

In January 2008 the final SIA comprehensive RI Phase III (Science Applications International Corp. (SAIC)) was completed. A record of decision (ROD) for OU-3 had been completed and signed. The first six years of RA(O) at OU-3 were completed. Work was completed on a focused feasibility study(FFS) during 2012 for OU-1. An expanded site inspection (ESI) for OU-5 was completed in 2010 and RI/FS is scheduled to be initiated in 2012.

Site inspection (SI) for three MMRP sites (OU-4) were completed in 2005. RI was initiated in 2010.

Installation Program Cleanup Progress

IRP

Prior Year Progress: Semiannual groundwater sampling was completed for OU-1. Sole source private drinking water wells were sampled. An FFS was completed for OU-1. LUC inspections were completed for OU-2 and necessary repairs were completed. The first seven years of remedial action - operation [RA(O)] were completed for OU-3. An ESI was completed for OU-5.

Future Plan of Action: ANAD will continue with semiannual groundwater monitoring for OU-1. Sole source private drinking water wells will be sampled. ANAD plans to complete the proposed plan (PP), and ROD at OU-1. LUC monitoring for OU-2 will continue. RA(O) for OU-3 will continue. RI/FS for OU-5 will be initiated.

MMRP

Prior Year Progress: RI for all three MMRP sites was initiated.

Future Plan of Action: FS, PP and ROD are scheduled to be completed.

CR

Prior Year Progress: Compliance monitoring continued under the Alabama Risk-Based Corrective Action (ARBCA) program for CC-ANAD-02.

Two new sites (CC-ANAD-04 and CC-ANAD-05) were added.

Future Plan of Action: CC-ANAD-02 free-product removal and groundwater monitoring will continue as recommended in the ARBCA report.

RCRA facility investigations (RFI) will be completed for the two new sites.

ANNISTON ARMY DEPOT
Army Defense Environmental Restoration Program
Installation Restoration Program

IRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 48/25

Installation Site Types with Future and/or Underway Phases

1	Above Ground Storage Tank (ANAD-10)
1	Burn Area (ANAD-29)
2	Contaminated Ground Water (ANAD-31, ANAD-48)
1	Contaminated Sediments (ANAD-05)
5	Disposal Pit/Dry Well (ANAD-07, ANAD-08, ANAD-09, ANAD-13, ANAD-27)
1	Explosive Ordnance Disposal Area (ANAD-35)
5	Landfill (ANAD-01, ANAD-21, ANAD-23, ANAD-24, ANAD-28)
4	Surface Impoundment/Lagoon (ANAD-11, ANAD-12, ANAD-22, ANAD-30)
1	Underground Storage Tank (ANAD-46)
2	Waste Treatment Plant (ANAD-19, ANAD-20)

Most Widespread Contaminants of Concern

Explosives, Metals, Munitions constituents (MC), Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern

Groundwater, Soil

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

Site ID	Site Name	Action	Remedy	FY
ANAD-22	A-BLOCK LAGOON (FACILITY 514)	IRA	WASTE REMOVAL - SOILS	1982
ANAD-01	SITE Z-1 TRENCHES AREA	IRA	WASTE REMOVAL - SOILS	1983
ANAD-12	FACILITY 414 (OLD LAGOONS)	IRA	WASTE REMOVAL - SOILS	1983
ANAD-25	BUILDING 130 SUMP	IRA	WASTE REMOVAL - SOILS	1983
ANAD-02	SITE Z-2 SANITARY LANDFILL	IRA	CAPPING	1994
ANAD-45	LEAKING UST AT BLDG 410	FRA	FREE PRODUCT RECOVERY	1996
ANAD-45	LEAKING UST AT BLDG 410	FRA	BIOREMEDIATION - IN SITU GROUNDWATER	1996
ANAD-45	LEAKING UST AT BLDG 410	FRA	NATURAL ATTENUATION	1996
ANAD-46	LEAKING UST AT BLDG 6	FRA	NATURAL ATTENUATION	1997
ANAD-46	LEAKING UST AT BLDG 6	FRA	FREE PRODUCT RECOVERY	1997
ANAD-12	FACILITY 414 (OLD LAGOONS)	IRA	IN-SITU SOIL TREATMENT	2001
ANAD-12	FACILITY 414 (OLD LAGOONS)	IRA	CHEMICAL REDUCTION/OXIDATION	2001
ANAD-12	FACILITY 414 (OLD LAGOONS)	IRA	GROUND WATER TREATMENT	2003
ANAD-05	SINKHOLE (NEAR EASTERN BOUNDARY)	FRA	OTHER	2005

IRP Summary

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

Site ID	Site Name	Action	Remedy	FY
ANAD-07	CHEMICAL WASTE DISPOSAL PIT	FRA	CAPPING	2005
ANAD-08	ACID DISPOSAL PIT	FRA	OTHER	2005
ANAD-09	CALCIUM HYPOCHLORITE BURIAL PIT	FRA	CAPPING	2005
ANAD-09	CALCIUM HYPOCHLORITE BURIAL PIT	FRA	REMOVAL	2005
ANAD-10	TNT WASHOUT FACILITY SEDIMENTATION TANK	FRA	NATURAL ATTENUATION	2005
ANAD-19	OLD STP (EAST AREA)	FRA	INSTITUTIONAL CONTROLS	2005
ANAD-20	NEW STP (EAST AREA)	FRA	INSTITUTIONAL CONTROLS	2005
ANAD-21	ABRASIVE DUST LANDFILL	FRA	INSTITUTIONAL CONTROLS	2005
ANAD-22	A-BLOCK LAGOON (FACILITY 514)	FRA	INSTITUTIONAL CONTROLS	2005
ANAD-23	ASBESTOS WASTE DISPOSAL TRENCH	FRA	INSTITUTIONAL CONTROLS	2005
ANAD-24	OLD SANITARY LANDFILL	FRA	INSTITUTIONAL CONTROLS	2005
ANAD-27	SOUTH TNT BURIAL PIT	FRA	OTHER	2005
ANAD-28	WASTE WOOD LANDFILL,NORTHEAST PART DEPOT	FRA	INSTITUTIONAL CONTROLS	2005
ANAD-29	OLD LUMBER DISPOSAL YARD,(NEAR BLDG 573)	FRA	CAPPING	2005
ANAD-30	NORTHEAST LAGOON AREA	FRA	CAPPING	2005
ANAD-35	DEACTIVATION FURNACE	FRA	REMOVAL	2005
ANAD-12	FACILITY 414 (OLD LAGOONS)	FRA	CAPPING	2006
ANAD-12	FACILITY 414 (OLD LAGOONS)	FRA	WASTE REMOVAL - SOILS	2006

Duration of IRP

Date of IRP Inception: 197804

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201509/204509

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

IRP Contamination Assessment

Contamination Assessment Overview

ANAD has a total of 48 AEDB-R sites including lagoons, storage areas, disposal pits, UST, landfills, open burning/open detonation areas and waste treatment areas.

A number of studies have been conducted at ANAD to support the IRP as well as other environmental management programs. These studies, which are listed in the previous studies section, have yielded a significant amount of information on the extent of contamination on-depot and the potential for contamination off-site.

A Comprehensive Groundwater RI, Phase III (SAIC 2008d) was completed for OU-1. This RI assessed the nature and extent of groundwater contamination in the area of ANAD's southeast boundary and the extent and potential for migration of contaminants from the SIA, particularly in the deeper groundwater regime. That study filled-in a number of data needs involving the nature of geologic formations, groundwater flow, and groundwater chemistry in the area upgradient of the SIA, the connectivity of the deep groundwater system in the SIA to off-post springs, the connectivity of the shallow-to-deeper groundwater system, and the degree of attenuation and degradation of contaminants. The results of this study were used to establish the objectives and extent of groundwater cleanup required which was detailed in an FS that was completed in April 2008. An FFS is underway for OU-1 to determine the source specific alternatives.

ANAD's monitoring program includes sampling wells within and downgradient of the SIA. Locations off-post of ANAD are monitored for VOC and bis 2-ethylhexyl phthalate (BEHP) groundwater contamination. Trichloroethylene (TCE) is the most frequently detected VOC and is the primary COC. The off-post locations are monitored in accordance with requirements of ANAD's FFA with the USEPA Region IV, ADEM, and CERCLA. Anniston Water Works and Sewer Board (AWWSB) and ANAD also analyze samples from Coldwater Spring monthly, which is more frequent than the required quarterly sampling specified in the Safe Drinking Water Act and ADEM regulations.

There are a total of 123 wells and springs used by residents for drinking water, agriculture, or recreation along the southern and western boundaries of ANAD. Wells and springs identified as the sole source drinking water supply have been sampled annually since 2000. The results indicate that there are no VOC contaminants above maximum contaminant levels (MCLs).

Measures are in place to protect current and potential receptors (on- and off-post) from exposure to contaminants exceeding MCLs. These measures include cleanup of sites where contamination is present, operation of the interim groundwater treatment system at ANAD, and an emergency response plan (ERP), which will be implemented in the event that private or public water supplies exceed applicable drinking water standards. Due to increases in TCE concentration in some off-post monitoring wells and at Coldwater Spring, the 1996 ERP was revised. As a result, the Army funded \$1.6 million for additional treatment at the AWWSB's Krebs Water Treatment Plant. Since the installation of the air strippers at the plant, TCE is at nondetectable levels in the finished drinking water.

Sites within ANAD were identified where use restrictions and controls were selected as part of the remedy to address risk and exposure to contaminants and to manage the current and future use of the property. These elements of the remedy are identified in the final ROD for the soil SIA OU (OU-2) and the final ASA OU (OU-3) ROD.

SIA (OU-1)

The investigations completed in the SIA to date have focused on both soils and groundwater, with on- and off-site groundwater receiving the primary focus since 1997. The initial investigations focused on characterizing the shallow groundwater, determining what information needed to be obtained to assess off-site groundwater contamination, and the factors controlling movement of deep groundwater. As the complexity of the site became more apparent, a phased approach to the site investigations was taken.

As additional site information was gained and a progression to the next phase was required, the SIA groundwater investigation strategy evolved. In September 1991, an interim remedial action (IRA) ROD established the on- and off-post groundwater OUs at the SIA (ANAD 1991). Per the interim record of decision (IROD), the boundaries of the on- and off-post groundwater OUs are defined vertically and horizontally as follows:

On-post Groundwater

The on-post groundwater component was strictly defined as the on-post (just within the boundaries of ANAD), shallow groundwater encountered within the residuum and the upper several feet of bedrock. This represents the limits of the Phase I and Phase II RI groundwater investigations and groundwater remedial activities (Jacobs 1992; SAIC 1998a).

IRP Contamination Assessment

Contamination Assessment Overview

Off-post Groundwater

The definition of off-post groundwater in the IROD is a misnomer since it not only includes the shallow and deep groundwater beyond the physical boundaries of the ANAD, but it also includes groundwater within the boundaries of the ANAD property that is beneath the vertical limits of the SIA Phase I and Phase II investigations (approximately 1992 to 1995). The off-post groundwater was the focus of the Off-post Phase I Groundwater RI SAIC 2001d).

Combined Groundwater (CGW):

The CGW designation was established to include both the on- and off-site groundwater of all depths. The results of the first RI with this focus are reported in the CGW RI Report (SAIC 2004d). Since the late-1970s, a number of environmental investigation activities have been conducted by ANAD at, and in the immediate vicinity of, the SIA facility. The majority of these investigations have focused on the shallow groundwater beneath the ANAD facility. The Final SIA Phase II RI (SAIC 1998a), which was completed in 1997, was the most comprehensive on-site groundwater investigation completed at ANAD. It concentrated on the soils and groundwater within the SIA. The hydrogeologic component of this investigation included groundwater and surface water elevation measurements, precipitation, stream flow and static water level monitoring, and pump testing. The Phase I off-post RI focused on hydrogeologic characterization of the Jacksonville fault zone to the south of the SIA (SAIC 2001d). The Phase I off-post RI data collection activities included remote sensing along the three transects (X-2, X-3, and X-4) using geophysical methods and drilling boreholes for lithologic and hydrogeologic data.

Following evaluation of the geophysical data and borehole results, monitoring wells were installed at recommended intervals. This RI did not include groundwater sampling. The CGW RI assessed the controls on the migration of groundwater contaminants whose source is the SIA, particularly the deeper flow of groundwater. This RI was a continuation of the Phase I Off-post RI (SAIC 2001d) and included activities to assess the movement of deep groundwater and the extent of groundwater contamination in the area of the ANAD southwestern boundary. The CGW data collection activities included geophysical surveying, borehole drilling and well installation, and groundwater sampling. These new wells were located within the SIA and off-site. During 2002 a biennial groundwater sampling program was initiated that consisted of a wet-season sampling event (e.g., March and April) and a dry-season sampling event (e.g., October and November).

Sample locations included on- and off-site monitoring wells, springs, and private wells. This sampling was supplemented by the monthly sampling of selected locations and it continued through 2004. These recent investigations, along with previous investigations, have led to a greater understanding of the processes by which groundwater moves through the area and the development of a hydrogeologic conceptual model. The hydrogeologic conceptual model for the ANAD site, which includes the shallow and deep groundwater, is presented in the June 2004 report titled CGW RI at ANAD, Anniston, Alabama (SAIC 2004d).

As part of a Phase II FS, the path forward includes further evaluation of specific remedial technologies applied in source-specific areas. The technologies will be evaluated with respect to the geologic limitations identified in the conceptual site model.

SIA (OU-2)

The investigations completed in the SIA to date have focused on both soils and groundwater, with on- and off-site groundwater receiving the primary focus since 1997. The initial investigations focused on characterizing the shallow groundwater, determining what information needed to be obtained to assess off-site groundwater contamination, and the factors controlling movement of deep groundwater. As the complexity of the site became more apparent, a phased approach to the site investigations was taken.

The SIA cleanup strategy includes designation of OUs, which are targeted for discrete RAs. Two OUs have been defined to date in the SIA: the Soil OU2 and On-post/off-post groundwater OU-1. OU-2 areas within the SIA where soil, sediment, and surface water media have been impacted by historic site operations and where potential risks are present, is the subject of this ROD.

The storage, maintenance, and industrial functions of ANAD historically have resulted in the generation of hazardous wastes. Typical waste-generating processes at ANAD have included vapor degreasing, metal cleaning, sandblasting, electroplating, and painting. Generated solid and liquid wastes have included metals, cyanide, phenols, pesticides, herbicides, chlorinated hydrocarbons, petroleum hydrocarbons, solvents, acids, alkali chelating agents, asbestos, and creosote. Wastes generated at ANAD were disposed of on-post in trenches, lagoons, landfills, or other holding vessels from the 1940s through the late-1970s. The majority of the waste generated and disposed of has occurred within the SIA. Based on previous investigations, 29 locations within the SIA are known or suspected to contain wastes and have been designated as SWMUs.

Environmental studies and investigations on the ANAD SIA have been conducted since the first quantitative assessment of industrial wastewater was completed in 1966. Recent studies in the 1990s include the Phase I and II RI [Jacobs Engineering

IRP Contamination Assessment

Contamination Assessment Overview

Group (JEG) 1994 and SAIC 1998a], SWMU 12 supplemental investigation, and FSs for the soil and on-post groundwater OUs (SAIC 1999 and 1998b). These studies identified the presence and the nature and extent of contaminated soil and groundwater within the SIA and identified approaches to site cleanup. As a result of these investigations and assessments, waste management practices have been changed and RAs at some of the SWMUs completed. Disposal areas at SWMU 1 (Chemical Sludge Waste Pits), SWMU 12 (Facility 414 Old Lagoons), SWMU 22 (A-Block Lagoon), and SWMU 23 (asbestos waste disposal trench) were excavated and wastes removed with contaminated soil from 1981 to 1983. Additional excavation and waste removal was performed in 2005-2006 at SWMU 9 (calcium hypochlorite pit) and SWMU 12 (Facility 414 Old Lagoons) as part of the approved PP.

The OU-2 ROD was finalized in July 2008. The RA post-construction report and operations and maintenance (O&M) plan were finalized in September 2008.

ASA INVESTIGATION (OU-3)

In 1991 JEG initiated an ESI in the ASA (15 SWMUs total). The ESI report was approved by USEPA/ADEM in December 1994. Contamination from VOCs and SVOCs was determined not to be a problem at the ASA. Heavy metals, explosives, nitrate/nitrite, total organic carbon and petroleum hydrocarbons were detected in samples of groundwater, soil and sediment from a number of sites. During the ESI, four SWMUs were identified as no further action (NFA) sites. Further investigation to confirm and evaluate the potential contamination was recommended at 11 SWMUs. High concentrations of explosives were thought to be present in subsurface soils at ANAD-11.

In September 1993 SAIC initiated preparation of RI/FS work plans for the 11 remaining ASA SWMUs. The plans were finalized by USEPA/ADEM in December 1994.

In FY97, due to unconfirmed reports that trinitrotoluene (TNT) levels in the soil at this site were in excess of 60 percent, a preliminary investigation was conducted at ANAD-11. USACE conducted this investigation to confirm the high explosives levels in order to perform the investigation in a safe manner. (Soil concentrations in excess of 10 percent are considered explosive). This investigation concluded that the concentrations were less than 10 percent.

In 1997 SAIC began the ASA RI fieldwork and completed it in 1998. A draft RI report was delivered in May 1999. An additional ecological risk assessment was determined necessary to adequately characterize nine of the sites, in accordance with USEPA, Region IV guidance. In August 2001 the final ASA RI was delivered and the final FS and PP were delivered in March 2002. The ROD was signed by each stakeholder in 2006.

UST INVESTIGATIONS

In July 1991, February 1992 and June 1993, ANAD received NOV's from ADEM for UST releases at three buildings (i.e. Buildings 385, 410, and 6). These three sites required secondary investigations due to leaking petroleum products. The tanks at these sites were removed. The SI conducted for Building 385 in FY95 determined that no further investigative or corrective actions were required. A corrective action plan (CAP) was written for Building 410 and Building 6 in FY96. These CAPs called for free-product removal and natural attenuation for soil and groundwater. In FY96 the free-product removal began for Building 410 and in FY97 for Building 6.

In 1999 alternate corrective actions were performed based on the new ADEM ARBCA guidance for USTs. This action was completed in January 2002. In 2005, the concentrations in groundwater beneath Building 410 were determined as having met the ARBCA levels and NFA was recommended for the site. Groundwater monitoring continues at Building 6.

WIA (OU-5)

Concentrations of TCE above the MCL were detected in groundwater within the WIA. The source of contaminants has not been identified. TCE was detected in groundwater while implementing other groundwater monitoring programs. An SI and ESI were implemented to identify the potential source of the TCE and to determine if an RI is warranted. The SI was completed in February 2008 and ESI in December 2010. Additional investigation will be initiated to define the nature and extent of contamination.

Cleanup Exit Strategy

Over the course of previous studies, the ANAD OU strategy has evolved, based on an increased understanding of the site and probable response actions. Most notably, the segregation of the on- and off-post groundwater OUs (as presented in the

IRP Contamination Assessment

September 1991 IROD was determined to be unnecessary and a potential impediment to the implementation of response actions. On May 20, 2004 the current OU strategy was approved by consensus of the ANAD partnering team. It was revised and incorporated in the Site Management Plan (2005) and includes the OUs listed below. The basis for differentiating each OU is also provided.

OU 1: SIA groundwater

Response actions require longer implementation time compared to SIA soils (OU 2) and technologies are distinct and separate from soils. As a portion of the NPL site, the SIA has higher priority and is geographically separate from the ASA (OU 3).

OU 2: SIA soil

Response actions are implemented more rapidly and are dissimilar to the SIA groundwater (OU 1) response actions. As a portion of the SIA NPL site, this OU has higher priority and is geographically separate from the ASA (OU 3).

OU 3: ASA (all media)

This OU has a lower priority than SIA NPL (OU 1 and OU 2) responses and is geographically separate from the SIA NPL site.

OU 4: MMRP sites

Investigations are implemented under the Department of Army MMRP and require specialized response actions.

OU 5: WIA sites

This OU has a lower priority than SIA NPL (OU 1 and OU 2) responses and currently is proceeding to the RI phase. It is geographically separate from the SIA NPL site.

In 1991 a public involvement and response plan (PIRP) was drafted by JEG. This PIRP outlined efforts to include the public in the IRP. In FY97 an update of this plan [the community relations plan (CRP) update], was initiated by QST Environmental [formerly Environmental Science & Engineering (ESE)] to include environmental justice issues, as well as information concerning RABs and TAPP. In May 1998 the CRP was finalized. As an additional document to the CRP, the final ANAD community involvement plan (CIP) addendum (SAIC) was prepared to reflect current community interest. The CIP was released to the public in 2004. A new CIP is currently being prepared and should be finalized in 2012.

ANAD's cleanup strategy includes completing the FFS at OU-1 and the RI/FS at OU-5. RAs are expected to be required for OU-1. All other sites are in the RA(O)/LTM phase.

IRP Previous Studies

Year	Title	Author	Date
1979	Installation Assessment of Anniston Army Depot, Report No. 119	US Army Toxic and Hazardous Materials Agency	APR-1979
1981	Anniston Army Depot RCRA Studies	Environmental Science and Engineering, Inc.	MAR-1981
	Geophysical and Geohydrologic Investigation of Anniston Army Depot	Technos, Inc.	SEP-1981
1982	Groundwater Assessment of the Southeast Industrial Area	Battelle Pacific Northwest Laboratories	OCT-1982
1984	Remedial Action of Hazardous Waste Sites	Roy F. Weston	JAN-1984
	Source Identification, Contaminant Transport Simulation and RA Analysis	Battelle Pacific Northwest Laboratories	JUN-1984
1985	SWMUs at Anniston Army Depot	Office of Commander	JAN-1985
1986	Off-Post Investigation at Anniston Army Depot, Summary of Preliminary Results	Environmental Science and Engineering, Inc.	DEC-1986
1987	RFA	NUS Corporation	FEB-1987
1988	FS for Anniston Army Depot, Endangerment Assessment - ATSDR Submittal	Environmental Science and Engineering, Inc.	FEB-1988
	FS for Anniston Army, Endangerment Assessment	Environmental Science and Engineering, Inc.	FEB-1988
1989	RI Anniston Army Depot, Volumes 1-4,	Environmental Science and Engineering, Inc.	JAN-1989
	FS for Anniston Army Depot	Environmental Science and Engineering, Inc.	JAN-1989
	Groundwater Extraction Optimization, Anniston Army Depot	E.C. Jordan	APR-1989
1990	Groundwater Extraction Optimization, Anniston Army Depot	E.C. Jordan	APR-1990
	FFA Between US EPA Region IV, ADEM and the US Army	Department of Army for the Anniston Army Depot	JUN-1990
1991	Superfund Interim Record of Decision, Anniston Army Depot, Alabama Groundwater Operable Unit	US Army Installation Restoration Program	SEP-1991
1993	Groundwater Extraction System Optimization Study, Final Report	Jacobs Engineering Group	MAY-1993
1994	Dye Tracing Study, SIA	Ewers Water Consultants	JUN-1994

IRP Previous Studies

Year	Title	Author	Date
1994	SWMU #12 Supplemental Investigation	Jacobs Engineering Group	OCT-1994
	Expanded SI Report, Ammunition Storage Area	Jacobs Engineering Group	NOV-1994
1995	RI Report	Jacobs Engineering Group	JAN-1995
	Revised Final Chemical Data Report No. 1 - First Quarter, Off-Post Groundwater Monitoring and ERP	Science Applications International Corp.	JUN-1995
	Final Chemical Data Report No. 2 - First Quarter, Off-Post Groundwater Monitoring and ERP	Science Applications International Corp.	JUN-1995
	Revised Final Chemical Data Report No. 3 - First Quarter, Off-Post Groundwater Monitoring and ERP	Science Applications International Corp.	SEP-1995
	Corrective Action Plan, Building 410	Ecology and Environment, Inc.	NOV-1995
	Revised Final Chemical Data Report No.4 - First Quarter, Off-Post Groundwater Monitoring and Emergency Response Plan	Science Applications International Corp.	DEC-1995
1996	CAP, Building 6, Site 1 and 2	Ecology and Environment, Inc.	MAR-1996
	Revised Final ERP, Off-Post Groundwater Monitoring and ERP	Science Applications International Corp.	OCT-1996
1997	Final Monitoring Well Inventory Well Assessment Report Vista Technologies, Inc. January 1997	Vista Technologies, Inc.	JAN-1997
	Industrial Sewer Line System Upgrade Plan	Science Applications International Corp.	FEB-1997
	Monitoring Well Rehabilitation Report	US Army Corps of Engineers, Mobile District	SEP-1997
	Expanded Site Inspection for TNT Washout Facility Leaching Beds (SWMU 11)	US Army Corps of Engineers, Mobile District	SEP-1997
1998	Report of Findings for the Groundwater Tracer Test SIA	Science Applications International Corp.	MAY-1998
	Final CRP Update	QST Environmental, Inc	MAY-1998
	Final SIA Phase 2 Remedial Investigation	Science Applications International Corp.	MAY-1998
	Final SIA Groundwater Operable Unit FS	Science Applications International Corp.	NOV-1998
1999	Geophysical Investigation, SIA Argonne National Laboratory	Argonne National Laboratory	MAY-1999
	Final SIA FS of Seven SWMUs	Science Applications International Corp.	JUL-1999
	Final Proposed Plan for the Clean-Up of Groundwater within the SIA	Science Applications International Corp.	SEP-1999
2000	Final Anniston AD RA On-Post Soil Operation Unit Proposed Plan	Science Applications International Corp.	JUL-2000
2002	Final Anniston AD ASA Proposed Plan	Science Applications International Corp.	MAR-2002

IRP Previous Studies

Year	Title	Author	Date
2002	Final Anniston AD ASA Proposed Plan	Science Applications International Corp.	MAR-2002
	Final Ammunition Storage Area Remedial Investigation Report.	Science Applications International Corp.	AUG-2002
	Final Phase I of the Off-Post RI	Science Applications International Corp.	DEC-2002
2004	CGW RI at Anniston Army Depot, Anniston, Alabama	Science Applications International Corp.	JUN-2004
	Final ERP for Coldwater Spring Public Water Supply	Science Application International Corp.	AUG-2004
	Final ERP for Private Wells	Science Application International Corp.	AUG-2004
	Final ANAD CIP Addendum	Science Application International Corp.	AUG-2004
2005	Site Management Plan	Anniston Army Depot	DEC-2005
2006	Final ROD for ASA	Anniston Army Depot	JUL-2006
	Historical Records Review Report for WIA	Science Applications International Corp.	SEP-2006
	Draft Final ASA Natural Attenuation Monitoring Plan	STEP, Inc.	DEC-2006
2007	Draft Final RD Addendum/Baseline Sampling Analysis Report ASA	SpecPro Environmental Services, LLC	FEB-2007
2008	Final SIA Comprehensive RI Phase III	Science Applications International Corp.	JAN-2008
	Comprehensive Groundwater FS for Operable Unit 1	Science Applications International Corp.	APR-2008
	Final SI Report for the Western Industrial Area (OU-5)	Science Applications International Corp.	APR-2008
	Final ROD for SIA Soil (OU-2)	Anniston Army Depot	JUL-2008
	Final Southeast Industrial Area Remedial Action Post-Construction Report and Maintenance Plan	SpecPro Environmental Services LLC	SEP-2008
	Final ASA RA Post-Construction Report	STEP, Inc.	SEP-2008
2009	Final Operable Unit 3 Groundwater Monitoring Report at the Ammunition Storage Area	SpecPro Environmental Services LLC	MAR-2009
	Annual Monitored Natural Attenuation Report Year 3 for Operable Unit 3	Black & Veatch Special Projects Corp.	MAR-2009
	Final Work Plan Addendum to ASA Long-Term GW Monitoring Plan	Black & Veatch Special Projects Corp.	JUN-2009
	Expanded Site Investigation Work Plan for Western Industrial Area (OU-5)	Tetra Tech, Inc.	AUG-2009
2010	Coldwater Spring monthly sampling summary report for 2008	Science Application International Corp.	APR-2010

IRP Previous Studies

2010	Title	Author	Date
	Work Plan Addendum, ASA Long-Term Groundwater Monitoring Plan	Black & Veatch Special Projects Corp.	APR-2010
	Final Work Plan Addendum to ASA Long-Term GW Monitoring Plan	Black & Veatch Special Projects Corp.	APR-2010
	Operable Unit-1 Groundwater Sampling Data Summary For calendar Year 2008	Science Application International Corp.	APR-2010
	Monitoring Well Inventory Work Plan	Science Applications International Corp.	AUG-2010
	Third 5-year Review Report	U.S. Army Corps of Engineers	SEP-2010
	Final Expanded Site Investigation Report	Tetra Tech, Inc.	NOV-2010
	Vapor Intrusion Monitoring Work Plan	Science Application International Corp.	DEC-2010
	Vapor Intrusion Assessment UFP-QAPP	Science Application International Corp.	DEC-2010
	Final Technical Memoranda for SIA (OU-1)	Tetra Tech, Inc.	DEC-2010
2011			
	Final Annual Monitored Natural Attenuation Report Year 4 for OU-3	Black & Veatch Special Projects Corp.	JAN-2011
	Final Well Redevelopment Work Plan for OU-1	Science Applications International Corp.	MAR-2011
	Final OU-1 GW Sampling Data Summary for 2009, SIA	Science Applications International Corp.	MAY-2011
	Final Coldwater Spring and Cooper Well Monthly Sampling Summary Report for 2009	Science Application International Corp.	JUN-2011
	Final Work Plan Addendum to ASA Long-Term GW Monitoring Plan	Black & Veatch Special Projects Corp.	JUN-2011
2012			
	Vapor Intrusion Assessment Report	Tetra Tech, Inc.	FEB-2012
	Final Annual Monitored Natural Attenuation Report Year 5	Black & Veatch Special Projects Corp.	FEB-2012

ANNISTON ARMY DEPOT
Installation Restoration Program
Site Descriptions

Site ID: ANAD-01
Site Name: SITE Z-1 TRENCHES AREA
Alias: SWMU-01

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

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

Media of Concern: Groundwater

Phases	Start	End
PA.....	197804.....	198608
SI.....	198608.....	198704
RI/FS.....	198110.....	201212
RD.....	201301.....	201309
IRA.....	198211.....	201309
RA(C).....	201310.....	201509
RA(O).....	201410.....	202409
LTM.....	202410.....	203409
RIP Date:	201509	
RC Date:	202409	

SITE DESCRIPTION

This site is part of OU-1.

In 2003 a decision was made to address all groundwater actions for OU 1 under this site. The comprehensive (formerly combined) groundwater OU includes previously studied (on- and off-post) groundwater OUs. The SWMUs that are considered source areas for groundwater contamination are ANAD-01, -12, -25, -29 and -30. Investigations have shown that chlorinated solvents have migrated off-post and impacted the municipal drinking water source (Coldwater Spring) for the Anniston/Calhoun County system (approximately 60,000 people). Air strippers installed at the water treatment plant began operation in FY05.

The Z-1 Trenches Area consisted of a series of seven excavated trenches approximately 10 to 15 feet (ft) in depth, located within a two-acre area north of the vehicle test track. The waste pits were used from 1971 to 1981 for the disposal of various liquid and containerized chemical wastes. As a result of a 1979 RCRA corrective/ removal action, the trenches were excavated and contaminated soils and wastes were transported off-depot for disposal. Confirmatory soil sample analysis indicated a maximum concentration of 25 milligrams per kilogram (mg/kg) total organics remaining in the trenches after excavation. Based upon the soil analyses, ADEM granted approval for closure.

The Phase I RI shows that a 1983 removal action was successful in removing soil as a contaminant source. Contamination reached groundwater before the 1983 removal. In 1990 a pump-and-treat system began operation under an IROD. In groundwater samples collected in 1995, solvents were detected at concentrations that indicated a high probability of non-aqueous phase liquid (NAPL).

An RA was conducted at SWMU-12 (Fenton's reagent) for TCE-contaminated soil and groundwater. The process was effective in removing VOC contaminants in the soil, but ineffective for the groundwater. The objective of the RA was to treat or reduce chemical concentrations believed to be contributing to exceeding the health-based concentration limits in the groundwater.

In FY08 the comprehensive RI was finalized with comments from ADEM. The FS was completed. In FY08 an FFS was started and is currently ongoing. It is expected to be completed in FY12.

It is currently assumed that the FFS will consider source area treatment for the trench, landfill, and northeast areas utilizing in situ bioremediation with recirculation/infiltration. It is also assumed that the point of diminishing returns occurs when attempting to treat the source area contamination below 10 milligrams per liter (mg/L); therefore, the RD, remedial action - construction [RA(C)], RA(O), and LTM estimated herein assume that source areas greater than 10 mg/L will be treated. It is assumed that the RA(O) will last for two five-year reviews (10 years) and LTM for an additional two five-year reviews (10 years) since there currently is no ROD.

Installation-wide five-year reviews are included in ANAD-01. The third five-year review was completed in September 2010.

Site ID: ANAD-01
Site Name: SITE Z-1 TRENCHES AREA
Alias: SWMU-01

CLEANUP/EXIT STRATEGY

An FFS is underway to further evaluate whether specific technologies identified in the FS would be applicable and beneficial to source area mass removal. FFS is scheduled to be completed in 2012. It is anticipated that an IROD will be signed after completion of the FFS which will determine the future course of action. In the interim, groundwater monitoring, annual potable well sampling and monthly sampling of Coldwater Spring (drinking water source) will continue.

Site ID: ANAD-05

Site Name: SINKHOLE (NEAR EASTERN BOUNDARY)

Alias: SWMU-05

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

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

Media of Concern: Groundwater

Phases	Start	End
PA.....	197804.....	198608
SI.....	197804.....	199410
RI/FS.....	199310.....	200206
RD.....	200408.....	200508
RA(C).....	200508.....	200509
RA(O).....	200510.....	201509
RIP Date:	200510	
RC Date:	201509	

SITE DESCRIPTION

This site is part of OU-3 and is included in the ASA (OU-3). The ROD was finalized in July 2006.

The sinkhole is located in a remote area along the ASA's eastern boundary. This feature is a depression, approximately 0.6 of an acre, and it contains water. The area was used periodically between 1942 and 1978 to dispose of various construction debris and miscellaneous wastes. Over the years most of the debris has been removed from the sinkhole. VOCs, SVOCs and lead have been detected in the groundwater.

One year of baseline samples were collected in FY06. The first six years of RA(O) have been funded.

Costs for five-year reviews are included in ANAD-01.

CLEANUP/EXIT STRATEGY

In July 2006 the ASA (OU-3) ROD was finalized. The RAO outlined in the ROD is required for 10 years (one year baseline and nine years of monitoring). Baseline sampling was initiated in FY05 and an additional six rounds of RA(O) sampling have been funded. As a part of MNA; sampling will continue for an additional three years.

LUCs prohibiting groundwater use and soil excavation are included in the final remedy. Periodic inspections will be conducted as required.

Site ID: ANAD-07
Site Name: CHEMICAL WASTE DISPOSAL PIT
Alias: SWMU-07

STATUS

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

Phases	Start	End
PA.....	197804.....	198608
SI.....	197804.....	198608
RI/FS.....	198110.....	200206
RD.....	200408.....	200508
RA(C).....	200508.....	200509
LTM.....	200510.....	203509
RIP Date: N/A		
RC Date: 200509		

SITE DESCRIPTION

ANAD-07 soils are part of OU-2; site groundwater is included in OU-1.

The chemical waste disposal pit (SWMU-7) is located in the northeast area of the SIA, across from Building 512. A variety of chemical wastes were reportedly dumped into a small pit in this area during a six-month period in 1960. The exact location and dimensions of the pit are unknown. The area is also reported to be the site of three separate spills of paint stripper from a 1,000 gallon tank car. This site is included in the SIA soil OU. The RI identifies lead at this site posing a human health risk (industrial use) for soils. The RI states that soil contamination does not provide a significant source for the groundwater contamination.

Part of the area has been capped with concrete for installation use (non-IRP funds). The remainder of the SWMU was capped with gravel in 2005. LTM (monitoring of LUCs) is underway.

Groundwater in the SIA is addressed under ANAD-01. LUCs are in place and LTM (monitoring of LUCs) is underway. Five-year reviews are included in ANAD-01.

CLEANUP/EXIT STRATEGY

In July 2008 the SIA soil (OU-2) ROD was finalized. The ROD called for LUCs, which include capping and restrictions on excavation and groundwater use. LUCs were implemented as part of the final remedy. Monitoring the cover and maintaining signage under LTM will continue.

Site ID: ANAD-08
Site Name: ACID DISPOSAL PIT
Alias: SWMU-08

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

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

Media of Concern: Groundwater

Phases	Start	End
PA.....	197804.....	198608
SI.....	197804.....	199410
RI/FS.....	199310.....	200206
RD.....	200408.....	200508
RA(C).....	200508.....	200509
RA(O).....	200510.....	201609
RIP Date:	200510	
RC Date:	201609	

SITE DESCRIPTION

This site is part of OU-3 and is included in the ASA (OU-3). The ROD for OU-3 (ASA) was finalized in July 2006.

The acid disposal pit is located in a chemical limited area (CLA) which is a highly restricted portion of the ASA. It is believed to have been used from 1959 to 1961 for the disposal of various chemicals, possibly in drums, before the Facility 414 Old Lagoons (ANAD-12) were constructed. The pit was concrete and has been filled in with sand that was previously used for cleaning metal parts. Elevated levels of VOCs, SVOCs, metals and explosives were detected in the groundwater.

One year of baseline samples were collected in FY06. The first six years of RA(O) have been funded.

Five-year reviews are included in ANAD-01.

CLEANUP/EXIT STRATEGY

In July 2006 the ASA (OU-3) ROD was finalized. The RA(O) outlined in the ROD is required for 10 years (one year baseline and nine years of monitoring). Baseline sampling was initiated in FY05 and an additional six rounds of RA(O) sampling have been funded. As a part of MNA; sampling will continue for an additional three years.

LUCs prohibiting groundwater use and soil excavation are included in the final remedy. Periodic inspections will be conducted as required.

Site ID: ANAD-09
Site Name: CALCIUM HYPOCHLORITE BURIAL PIT
Alias: SWMU-09

STATUS

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

Phases	Start	End
PA.....	197804.....	198608
SI.....	197804.....	198608
RI/FS.....	198110.....	200206
RD.....	200408.....	200508
RA(C).....	200508.....	200509
LTM.....	200510.....	203509
RIP Date:	N/A	
RC Date:	200509	

SITE DESCRIPTION

Site soils are part of OU-2.

The calcium hypochlorite pit (SWMU-9) was used in 1974 to dispose of 400 containers of calcium hypochlorite, each containing approximately 100 pounds. The pit is located approximately 500 ft southwest of the vehicle test track, between the Facility 414 Old Lagoons (ANAD-12) and the A-Block Lagoon (ANAD-22). A US Army Environmental Hygiene Agency (USAEHA) report noted that several containers had ruptured during burial and had caused a fire when the hypochlorite came into contact with scrap dunnage. During trenching operations conducted in the RI, no evidence of the disposal was identified.

This site is included in the SIA soils OU. The 1998 Phase II RI identifies lead contamination in soils posing a human health (industrial use) and ecological risk.

The Final ROD for SIA Soil (OU-2) (2008) required excavation, transportation and disposal of approximately 100 cubic yards (cy) of soil and capping (about 2,500 square ft (sq ft)) of this site. All of this was completed in FY05.

Groundwater in the SIA is addressed under ANAD-01. LUCs are in place and LTM (monitoring of LUCs) is underway. Five-year reviews are included in ANAD-01.

CLEANUP/EXIT STRATEGY

In July 2008 the SIA soil (OU-2) ROD was finalized. LUCs, which include excavation and groundwater use restrictions, will be implemented as part of the final remedy. Monitoring and repairs to the cover will continue as needed under LTM.

Site ID: ANAD-10

Site Name: TNT WASHOUT FACILITY SEDIMENTATION TANK

Alias: SWMU-10

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals, Munitions constituents (MC)

Media of Concern: Groundwater

Phases	Start	End
PA.....	197804.....	198608
SI.....	197804.....	199410
RI/FS.....	199310.....	200206
RD.....	200408.....	200508
RA(C).....	200508.....	200509
RA(O).....	200510.....	201509
RIP Date:	200510	
RC Date:	201509	

SITE DESCRIPTION

This site is part of OU-3 and is included in the ASA (OU-3). The ROD for OU-3 (ASA) was finalized in July 2006.

The sedimentation tank is part of the TNT washout facility located in a restricted area of the central portion of the ASA. The facility consists of a large metal building (Building 172) and a wastewater sedimentation tank. The facility was used from 1948 until the mid-1950s for washing explosives from demilitarized munitions. The slurry from washout operations discharged from the building to the sedimentation tank. The overflow from this tank then discharged through a pipe under the road and into the TNT leaching beds (ANAD-11). The unit closed in the mid-1950s except for occasional use through the late-1960s. Metals and explosives were detected in the groundwater.

One year of baseline samples were collected in FY06. The first six years of RA(O) have been funded.

Costs for five-year reviews are included in ANAD-01.

CLEANUP/EXIT STRATEGY

In July 2006 the ASA (OU-3) ROD was finalized. The RA(O) outlined in the ROD is required for 10 years (one year baseline and nine years of monitoring). Baseline sampling was initiated in FY05 and an additional six rounds of RA(O) sampling have been funded. As a part of MNA sampling will continue for an additional three years.

LUCs prohibiting groundwater use and soil excavation are included in the final remedy. Periodic inspections will be conducted as required.

Site ID: ANAD-11
Site Name: TNT LEACHING BEDS
Alias: SWMU-11

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals, Munitions constituents (MC)

Media of Concern: Groundwater

Phases	Start	End
PA.....	197804.....	198608
SI.....	197804.....	199410
RI/FS.....	199310.....	200206
RD.....	200408.....	200508
RA(C).....	200508.....	200509
RA(O).....	200510.....	201509
RIP Date:	200510	
RC Date:	201509	

SITE DESCRIPTION

This site is part of OU-3 and is included in the ASA (OU-3). The ROD for OU-3 (ASA) was finalized in July 2006.

The TNT Leaching Beds (SWMU-11) are located across the road from ANAD-10. The overflow from the sedimentation tank of ANAD-10 discharged through a clay pipe into the leaching beds. The beds occupied an area of about 0.75 acre. From 1948 until the mid-1950s, the leaching beds treated explosives and washout wastewater. From the mid-1950s through the late-1960s, the beds were apparently used occasionally to dispose of wash water from pelletizing system filters. In April 1978, an unknown quantity of octol pink water was discharged to the beds. The beds have not been used since April 1978. In 1985, the area was graded and capped with two to five ft of native clay. Metals and explosives were detected in the groundwater.

One year of baseline samples were collected in FY06. The first six years of RA(O) have been funded.

Costs for five-year reviews are included in ANAD-01.

CLEANUP/EXIT STRATEGY

In July 2006 the ASA (OU-3) ROD was finalized. The RAO outlined in the ROD is required for 10 years (one year baseline and nine years of monitoring). Baseline sampling was initiated in FY05 and an additional six rounds of RA(O) sampling have been funded. As a part of MNA; sampling will continue for an additional three years.

LUCs prohibiting groundwater use and soil excavation are included in the final remedy. Periodic inspections will be conducted as required.

Site ID: ANAD-12
Site Name: FACILITY 414 (OLD LAGOONS)
Alias: SWMU-12

STATUS

Regulatory Driver: CERCLA
RRSE: HIGH
 Contaminants of Concern: Metals
 Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	197804.....	198608
SI.....	197804.....	198608
RI/FS.....	198110.....	200206
RD.....	200408.....	200508
IRA.....	198211.....	200308
RA(C).....	200508.....	200602
LTM.....	200603.....	203509
RIP Date:	N/A	
RC Date:	200602	

SITE DESCRIPTION

Site soils are part of OU-2.

This facility consists of a series of three unlined industrial waste lagoons. These lagoons were used from about 1960 until 1978 to store abrasive dust waste and a variety of concentrated liquid chemical wastes generated in the shop area. In August 1978, the lagoons were emptied by pumping the liquid wastes to the A-Block Lagoon (ANAD-22). Approximately 1,100 to 1,300 cy of sludge were removed from the lagoons and stockpiled on-site. The lagoons were then backfilled with clay. As a result of a 1979 RCRA corrective/removal action, the waste sludge was removed for off-depot disposal, along with the waste from the Z-1 Trenches Area (ANAD-01). In 1990 a pump-and-treat system began operations to treat source areas.

An RA was conducted (Fenton's reagent) for TCE-contaminated soil and groundwater. The process effectively removed VOC contaminants in the soil, but it was ineffective for the groundwater. The objective of the actions was to treat or reduce chemical concentrations believed to be contributing to health-based concentration limits that are exceeded in the groundwater. The metals-contaminated soil at the site is considered an ecological risk, and some lead-contaminated soil poses a risk to industrial workers. Concentrations of solvents detected in groundwater samples in 2002 indicated a high probability of NAPL.

Groundwater contamination associated with this site and all groundwater actions will be addressed under ANAD-01.

In FY05, in accordance with the OU-2 ROD, about 209 cy of soil was excavated from ANAD-09/12 and properly disposed. The area was capped with gravel. LUCs are in place and long-term monitoring and management of LUCs is underway. The cost of the five-year review is captured in the cost-to-complete (CTC) for ANAD-01.

CLEANUP/EXIT STRATEGY

In July 2008 the SIA soil (OU-2) ROD was finalized. The ROD called for LUCs, which include capping and restrictions on excavation and groundwater use. LUCs were implemented as part of the final remedy. The cover and signs will be monitored under LTM and repaired as necessary.

Site ID: ANAD-13
Site Name: ACID CHEMICAL WASTE PIT
Alias: SWMU-13

STATUS

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

Phases	Start	End
PA.....	197804.....	198608
SI.....	197804.....	198608
RI/FS.....	198110.....	200206
RD.....	200408.....	200509
RA(C).....	200508.....	200512
LTM.....	200512.....	203509
RIP Date:	N/A	
RC Date:	200512	

SITE DESCRIPTION

Site soils are part of OU-2.

The SIA Acid Chemical Waste Pit is located in a sandy cut in a hillside near the SIA old STP. The pit was reportedly used to dispose of tank-truck quantities of unspecified chemical wastes of unknown origin from either the late-1940s to the late-1960s or from 1957 to 1972.

The 1998 Phase II RI shows that soil contamination at this site poses an unacceptable risk to industrial workers; however, the site is not considered an ecological risk. There is no complete exposure pathway to groundwater.

The Final ROD for SIA Soil (OU-2) (2008) requires capping (2,168 sq ft) of this site. The cap was installed in 2005. LUCs are in place and LTM (monitoring and management of LUCs) is underway. The five-year review cost for this site is captured in ANAD-01.

CLEANUP/EXIT STRATEGY

In July 2008 the SIA soil (OU-2) ROD was finalized. The ROD called for LUCs, which include capping and restrictions on excavation and groundwater use. LUCs were implemented as part of the final remedy. The cover and signs will be monitored under LTM and repaired as necessary.

Site ID: ANAD-19
Site Name: OLD STP (EAST AREA)
Alias: SWMU-19

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA.....	197804.....	198608
SI.....	197804.....	198608
RI/FS.....	198110.....	200109
RD.....	200506.....	200509
RA(C).....	200509.....	200509
LTM.....	200509.....	203509

RIP Date: N/A

RC Date: 200509

SITE DESCRIPTION

Site soils are part of OU-2.

This site was used from 1948 to 1982, when it was replaced by the new STP, ANAD-20. Approximately 435,000 gallons per day (gpd) of domestic sewage and pre-treated industrial wastewaters were processed at this unit. Effluent from this plant discharged to Dry Creek. The soil does not pose a risk to industrial workers; the site land use must remain industrial.

Excavation is prohibited through ANAD standard operating procedures (SOPs). Excavation and off-site transport of soil must be coordinated with the Directorate of Risk Management to ensure regulatory compliance.

Groundwater contamination is being addressed under ANAD-01 (OU-1).

The cost for five-year reviews is captured in site ANAD-01.

CLEANUP/EXIT STRATEGY

In July 2008 the SIA soil (OU-2) ROD was finalized. LUCs, which include prohibiting excavation, will be implemented. Periodic inspections will be conducted as required.

Site ID: ANAD-20
Site Name: NEW STP (EAST AREA)
Alias: SWMU-20

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA.....	197804.....	198608
SI.....	197804.....	198608
RI/FS.....	198110.....	200109
RA(C).....	200509.....	200509
LTM.....	200509.....	203509

RIP Date: N/A

RC Date: 200509

SITE DESCRIPTION

This new treatment system uses an activated biofilter design which uses some of the Old STP (ANAD-19) units. Capacity of the New STP is 520,000 gpd, consisting of domestic sewage wastes and pre-treated industrial wastewater. The system discharged to Coldwater Creek until December 1987, when effluent discharge was changed to Choccolocco Creek. The soil does not pose a risk to industrial workers; site land use must remain industrial.

Excavation is prohibited through ANAD SOPs. Excavation and off-site transport of soil must be coordinated with the directorate of risk management to ensure regulatory compliance.

Groundwater is being addressed under ANAD-01 (OU-1).

The cost for five-year reviews is captured in site ANAD-01.

CLEANUP/EXIT STRATEGY

In July 2008 the SIA soil (OU-2) ROD was finalized. LUCs, which include prohibiting excavation, are being implemented. Periodic inspections will be conducted as required.

Site ID: ANAD-21
Site Name: ABRASIVE DUST LANDFILL
Alias: SWMU-21

STATUS

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

Phases	Start	End
PA.....	197804.....	198608
SI.....	197804.....	198608
RI/FS.....	198110.....	200109
RA(C).....	200509.....	200509
LTM.....	200509.....	203509

RIP Date: N/A
RC Date: 200509

SITE DESCRIPTION

Site soils are included in OU-2.

From 1977 to 1981, 2.9 acres of this site were used to dispose of abrasive dust waste from sandblasting operations. The dust consists of sand, steel shot, glass, walnut hulls, paint flakes and metallic chips. The site cleanup is based on industrial worker risk; site land use must remain industrial.

Excavation is prohibited through ANAD SOPs. Excavation and off-site transport of soil must be coordinated with the directorate of risk management to ensure regulatory compliance.

Groundwater contamination is being addressed under ANAD-01 (OU-1).

The cost for five-year reviews is captured in site ANAD-01.

CLEANUP/EXIT STRATEGY

In July 2008 the SIA soil (OU-2) ROD was finalized. LUCs, which include prohibiting excavation, are being implemented. Periodic inspections will be conducted as required.

Site ID: ANAD-22
Site Name: A-BLOCK LAGOON (FACILITY 514)
Alias: SWMU-22

STATUS

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

Phases	Start	End
PA.....	197804.....	198608
SI.....	197804.....	198608
RI/FS.....	198110.....	200109
IRA.....	198106.....	198112
RA(C).....	200509.....	200509
LTM.....	200509.....	203509
RIP Date:	N/A	
RC Date:	200509	

SITE DESCRIPTION

Site soils are part of OU-2.

This site is a 1.7-acre lined surface impoundment. The lagoon was built in 1978 for the temporary storage of liquid wastes pumped from ANAD-12. The site was closed in 1982. Site cleanup is based on Industrial worker risk; site land use must remain industrial.

The cost for five-year reviews is captured in site ANAD-01.

CLEANUP/EXIT STRATEGY

In July 2008 the SIA soil (OU-2) ROD was finalized. LUCs, which include prohibiting excavation, are being implemented. Periodic inspections will be conducted as required.

Site ID: ANAD-23

Site Name: ASBESTOS WASTE DISPOSAL TRENCH

Alias: SWMU-23

STATUS

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

Phases	Start	End
PA.....	197804.....	198608
SI.....	197804.....	198608
RI/FS.....	198110.....	200109
RA(C).....	200509.....	200509
LTM.....	200509.....	203509
RIP Date:	N/A	
RC Date:	200509	

SITE DESCRIPTION

Site soils are part of OU-2.

From 1980 to 1981, this shallow trench was used to dispose of insulation containing asbestos. The wastes were wrapped in double bags and disposed of in accordance with existing environmental regulations. In 1981, the trench was backfilled with area soils. Phase II showed there is risk under the construction land-use scenario for subsurface soils. Site cleanup is based on industrial worker risk; site land use must remain industrial.

Excavation is prohibited through ANAD SOPs. Excavation and off-site transport of soil must be coordinated with the directorate of risk management to ensure regulatory compliance.

Groundwater contamination is being addressed under ANAD-01 (OU-1).

The cost for five-year reviews is captured in site ANAD-01.

CLEANUP/EXIT STRATEGY

In July 2008 the SIA soil (OU-2) ROD was finalized. LUCs, which include prohibiting excavation, are being. Periodic inspections will be conducted as required.

Site ID: ANAD-24
Site Name: OLD SANITARY LANDFILL
Alias: SWMU-24

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA.....	197804.....	198608
SI.....	197804.....	198608
RI/FS.....	198110.....	200109
RA(C).....	200509.....	200509
LTM.....	200509.....	203509

RIP Date: N/A

RC Date: 200509

SITE DESCRIPTION

Site soils are included in OU-2.

Remedial activities and funding for cleanup of groundwater contamination associated with this site appear under ANAD-01. This landfill operated from 1942 until 1970 when ANAD-02 was constructed. Wastes were disposed of in trenches, which were then backfilled with soil. Waste type and quantities were not documented, but reportedly consisted of typical municipal wastes such as paper, household items, garbage and, possibly, chemical wastes. This site is included in the SIA soil OU (OU-2) and the groundwater OU-1. The ROD for SIA soil OU-2 states that soil is not a risk to industrial workers; site land use must remain industrial. Site groundwater is addressed under the comprehensive groundwater OU (OU-1).

Excavation is prohibited through ANAD SOPs. Excavation and off-site transport of soil must be coordinated with the directorate of risk management to ensure regulatory compliance.

The cost for five-year reviews is captured in site ANAD-01.

CLEANUP/EXIT STRATEGY

In July 2008 the SIA soil (OU-2) ROD was finalized. LUCs, which include prohibiting excavation, are being implemented. Periodic inspections will be conducted as required.

Site ID: ANAD-27
Site Name: SOUTH TNT BURIAL PIT
Alias: SWMU-27

STATUS

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

Phases	Start	End
PA.....	197804.....	198608
SI.....	197804.....	199410
RI/FS.....	199310.....	200212
RD.....	200408.....	200508
RA(C).....	200508.....	200509
RA(O).....	200510.....	201509
RIP Date:	200510	
RC Date:	201509	

SITE DESCRIPTION

This site is part of OU-3 and is included in the ASA (OU-3). The ROD for OU-3 (ASA) was finalized in July 2006.

Wastes containing TNT (SWMU-27) may have been buried in a small burial pit located in the north central section of the depot near the installation boundary. The pit area is well-vegetated and shows no evidence that a site even existed, except for a few posted signs indicating a closed landfill.

Metals above risk-based screening levels were detected in the groundwater. Low concentrations of metals, VOCs and SVOCs below risk-based screening levels were detected in subsurface soils.

One year of baseline samples were collected in FY06. The first six years of RA(O) have been funded.

Costs for five-year reviews are included in ANAD-01.

CLEANUP/EXIT STRATEGY

In July 2006 the ASA (OU-3) ROD was finalized. The RAO outlined in the ROD is required for 10 years (one year baseline and nine years of monitoring). Baseline sampling was initiated in FY05 and an additional six rounds of RA(O) sampling have been funded. As a part of MNA; sampling will continue for an additional three years.

LUCs prohibiting groundwater use and soil excavation are included in the final remedy. Periodic inspections will be conducted as required.

Site ID: ANAD-28

Site Name: WASTE WOOD LANDFILL, NORTHEAST PART DEPOT

Alias: SWMU-28

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA.....	197804.....	198608
SI.....	197804.....	198608
RI/FS.....	198110.....	200109
RA(C).....	200509.....	200509
LTM.....	200509.....	203509

RIP Date: N/A

RC Date: 200509

SITE DESCRIPTION

Site soils are included in OU-2.

Use of this 3.7-acre closed landfill for disposal of various waste wood including railroad ties, telephone poles, and wooden pallets began in 1976. There are no records indicating that wood treated with copper, chromium, or arsenic was deposited at this site. The landfill was reported to be about 15 ft thick and was built by filling in a low-lying area. The landfill was covered and graded with two to three ft of clean fill. There is no soil risk to industrial workers; site land use must remain industrial.

Excavation is prohibited through ANAD SOPs. Excavation and off-site transport of soil must be coordinated with the directorate of risk management to ensure regulatory compliance.

Groundwater contamination is being addressed under ANAD-01 (OU-1).

The cost for five-year reviews is captured in site ANAD-01.

CLEANUP/EXIT STRATEGY

In July 2008 the SIA soil (OU-2) ROD was finalized. LUCs, which include prohibiting excavation, are being implemented. Periodic inspections will be conducted as required.

Site ID: ANAD-29

Site Name: OLD LUMBER DISPOSAL YARD,(NEAR BLDG 573)

Alias: SWMU-29

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA.....	197804.....	198608
SI.....	197804.....	198608
RI/FS.....	198110.....	200308
RD.....	200408.....	200505
RA(C).....	200506.....	200509
LTM.....	200510.....	203509

RIP Date: N/A

RC Date: 200509

SITE DESCRIPTION

Site soils are included in OU-2.

The Old Lumber Disposal Yard (SWMU-29) was located immediately south of the Eulaton gate of the SIA, just north of what is now Building 513. It was used for disposal of wood by burning with waste oil and as a stockpile of wood available for the public. The area covered less than one acre and was in use from the mid-1940s through the mid-1970s. In 1997, the site was excavated (non-IRP) in order to construct a warehouse. Waste wood removed in the excavation was disposed of off-site. Most of the area is now covered with concrete and a metal structure.

In accordance with the OU-2 ROD, areas posing a human health risk (lead in soil) were capped in late FY05. LUCs were implemented as part of the final remedy.

Excavation is prohibited through ANAD SOPs. Excavation and off-site transport of soil must be coordinated with the directorate of risk management to ensure regulatory compliance. LUCs are in place and LTM (monitoring/management of LUCs) is underway.

Groundwater contamination is being addressed under ANAD-01 (OU-1).

The cost of five-year reviews is included in ANAD-01.

CLEANUP/EXIT STRATEGY

In July 2008 the SIA soil (OU-2) ROD was finalized. The ROD called for LUCs, which include capping and restrictions on excavation and groundwater use. LUCs were implemented as part of the final remedy. The cover and signs will be monitored under LTM and repaired as necessary.

Site ID: ANAD-30
Site Name: NORTHEAST LAGOON AREA
Alias: SWMU-30

STATUS

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

Phases	Start	End
PA.....	197804.....	198608
SI.....	197804.....	198608
RI/FS.....	198110.....	200308
RD.....	200408.....	200508
RA(C).....	200506.....	200509
LTM.....	200510.....	203509
RIP Date: N/A		
RC Date: 200509		

SITE DESCRIPTION

Site soils are part of OU-2.

Until the early-1960s the various surface impoundments and liquid disposal pits at the Northeast Lagoon Area (SWMU-30) were used for waste disposal. It is approximately one acre and is located adjacent to Building 513 in the northeastern section of the SIA. The northeast lagoon area is believed to have been used as a primary disposal area for chlorinated solvents from the early-1950s to the early-1960s. The area has since been filled in and is now used as a gravel parking lot.

The Phase II RI states that there are human health risks associated with lead in the soils and that the subsurface soil is not presently contributing to groundwater contamination. VOC contamination reached groundwater in the past and has persisted. Groundwater samples collected in 2002 contained solvents at levels that indicated a high probability of NAPL. A pump-and-treat system began operations in 1990. Groundwater contamination is being addressed under ANAD-01 (OU-1).

In late FY05, in accordance with the OU-2 ROD, areas posing a human health risk were capped. LUCs were implemented as part of the final remedy.

Excavation is prohibited through ANAD SOPs. Excavation and off-site transport of soil must be coordinated with the directorate of risk management to ensure regulatory compliance. LTM (monitoring/management of LUCs) is underway.

The cost for five-year reviews is included in site ANAD-01.

CLEANUP/EXIT STRATEGY

In July 2008 the SIA soil (OU-2) ROD was finalized. The ROD called for LUCs, which include capping and restrictions on excavation and groundwater use. LUCs were implemented as part of the final remedy. The cover and signs will be monitored under LTM and repaired as necessary.

Site ID: ANAD-31

Site Name: METAL PLATING SHOP (BUILDING 114)

Alias: SWMU-31

STATUS

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

Phases	Start	End
PA.....	197804.....	198608
SI.....	197804.....	198608
RI/FS.....	198110.....	200203
IRA.....	198304.....	201409
RA(C).....	200709.....	201409
RA(O).....	201409.....	204509
RIP Date:	201409	
RC Date:	204509	

SITE DESCRIPTION

ANAD-31 groundwater is part of OU-1 and the site soils are part of OU-2. The cost for five-year reviews is included in site ANAD-07.

Operations in Building 114 (SWMU-31) include cleaning, treating, and metal plating. A french drain system surrounds the building and drains into an adjacent collection sump. The water (350,000 gpd) is collected and pumped to a treatment site. As a result of past activities, there is extensive chromium and VOC contamination in soil and groundwater in the vicinity of Building 114. Consequently, it is necessary to treat the sump water using an air stripping system (VOC removal) and granulated activated carbon to remove hexavalent chromium. The air stripper was installed in 1990 as part of an IROD.

The surface soil is not a human health or ecological risk because the site is covered with pavement. The subsurface soil is not a significant source of groundwater contamination.

Five-year review cost is included in ANAD-01.

CLEANUP/EXIT STRATEGY

The IROD for OU-1 addresses groundwater contamination at this site.

The cleanup strategy is to continue operation of the groundwater sump and air strippers with associated carbon vessels to treat groundwater from beneath the building. The system may continue operation post-ROD as RA(O).

Site ID: ANAD-35
Site Name: DEACTIVATION FURNACE
Alias: SWMU-35

STATUS

Regulatory Driver: CERCLA
RRSE: MEDIUM
 Contaminants of Concern: Metals
 Media of Concern: Groundwater

Phases	Start	End
PA.....	197804.....	198608
SI.....	197804.....	199410
RI/FS.....	199310.....	200206
RD.....	200408.....	200508
RA(C).....	200508.....	200509
RA(O).....	200509.....	201509
RIP Date:	200509	
RC Date:	201510	

SITE DESCRIPTION

This site is part of OU-3 and is included in the ASA (OU-3). The ROD for OU-3 (ASA) was finalized in July 2006.

The Deactivation Furnace (SMWU-35) was located in the northwest corner of the ASA. The furnace was used to deactivate small munitions. Particulate emissions from the furnace were collected in a bag house where the dust was drummed and stored as a hazardous waste. A leaking, 1,000-gallon underground diesel fuel tank located adjacent to the furnace building was removed and the surrounding contaminated soils remediated. An air emission permit application was submitted to ADEM and then withdrawn. The site was never granted a RCRA permit or operated as a RCRA unit.

In 1999, the equipment was removed and the building received RCRA closure. In 2000, the building was removed. The groundwater, surface and subsurface soils are being investigated as a CERLCA site. Lead in the surface soil posed a human health risk for industrial workers. Metals above risk-based screening levels were detected in the groundwater.

In FY05, soils posing a risk were excavated to residential standards and disposed of properly.

One year of baseline samples were collected in FY06. The first six years of RA(O) have been funded. Costs for five-year reviews are included in ANAD-01.

CLEANUP/EXIT STRATEGY

In July 2006 the ASA (OU-3) ROD was finalized. The RA(O) outlined in the ROD is required for 10 years (one year baseline and nine years of monitoring). Baseline sampling was initiated in FY05 and an additional six rounds of RA(O) sampling have been funded. As a part of MNA; sampling will continue for an additional three years.

LUCs prohibiting groundwater use and soil excavation are included in the final remedy. Periodic inspections will be conducted as required.

Site ID: ANAD-46
Site Name: LEAKING UST AT BLDG 6
Alias: SWMU-46

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

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

Media of Concern: Groundwater

Phases	Start	End
ISC.....	199201.....	199301
INV.....	199301.....	199501
CAP.....	199501.....	199702
IMP(C).....	199702.....	199702
IMP(O).....	199702.....	201409

RIP Date: 199702

RC Date: 201409

SITE DESCRIPTION

This site is included in OU-5.

In the 1980s, use of multiple USTs at Building 6 was discontinued. In 1994, the tanks were removed and a secondary investigation was completed. Building 6 is located in the geographic footprint of OU-5.

In 1995, a CAP was submitted to ADEM. In 2002, a draft ARBCA assessment was submitted. In 2003, a second phase of sampling was completed and resubmitted to ADEM. In FY05, the ARBCA process was completed to establish site-specific cleanup levels.

The 10-year monitoring program began in 1998 and was scheduled to conclude in 2008; however, it continued for two more years based on monitoring data. Due to the continued presence of elevated contaminants of concern in selected wells, it is assumed that monitoring will continue for two additional years. Monitoring is expected to be completed in 2014.

During the course of the UST investigation, TCE was discovered in several of the intermediate-depth monitoring wells. Based on the nature of that contaminant and the historical use of the industrial area, OU-5 (ANAD-48) was created for the WIA. ANAD-46 is now included in OU-5.

Three new USTs were installed at this site for use as a service station.

CLEANUP/EXIT STRATEGY

MNA for groundwater is being implemented and will continue until cleanup standards have been met. Based on current conditions, it is anticipated that two more years of monitoring will be required.

If active remediation is required, it will be incorporated in to the surrounding ANAD-48 (OU-5). ANAD-48 is currently in the RI/FS phase.

Site ID: ANAD-48

Site Name: WESTERN INDUSTRIAL AREA GROUNDWATER

Alias: AOC-A

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

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

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

Phases	Start	End
PA.....	200402.....	200502
SI.....	200502.....	201009
RI/FS.....	201009.....	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

This site is part of OU-5.

The WIA contains the depot's support facilities for the industrial operation including equipment maintenance, rail service and automotive facilities. Additional areas are allocated for warehouse storage, fuel storage, administrative services, housing, and recreation. During the investigation of leaking USTs (ANAD-46), TCE was detected in concentrations above the MCLs. Originally, ANAD-48 was intended to address groundwater beneath the WIA; however, based on the nature of that contaminant and the historical use of the industrial area, OU-5 (ANAD-48) for the WIA was created.

In April 2008, ANAD completed an SI to determine the source of the TCE. In 2010, ANAD completed an ESI. Based on the ESI results, an RI will be required and expected to be initiated in FY12 and completed in FY14. It is assumed for now that no further action would be required upon completion of the RI.

CLEANUP/EXIT STRATEGY

In April 2008 ANAD completed an SI to determine the source of the TCE. An ESI was initiated in FY08 and completed in FY10. Based on draft ESI results, RI will be required and expected to be initiated in FY12 and completed in FY14. It is anticipated that no further action would be required upon completion of the RI.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
ANAD-02	SITE Z-2 SANITARY LANDFILL	200602	Not IRP eligible, permitted landfill addressed under installation environmental budget
ANAD-03	OLD IWTP (BUILDING 505)	200206	NFA, OU-2 ROD July 2008
ANAD-04	NEW IWTP (BUILDING 505)	200206	NFA, OU-2 ROD July 2008
ANAD-06	NA FILLED VALVE DISPOSAL PIT	200109	NFA, OU-2 ROD July 2008
ANAD-14	LAUNDRY WASTE LEACHING FACILITY	200205	NFA, OU-3 ROD June 2006
ANAD-15	PROPELLENT DISPOSAL FACILITY	200212	NFA, OU-3 ROD June 2006
ANAD-16	BURNING GROUND (NW SIDE OF DEPOT)	199410	Not IRP eligible, Active site with RCRA Permit
ANAD-17	DEMOLITION PIT (NORTHWEST SIDE OF DEPOT)	199410	Not IRP eligible, Active site with RCRA Permit
ANAD-18	OLD STP (WEST AREA)	200206	NFA recommended in the ASA RI, site included in OU-5 (SI phase), a letter approving RI was received from ADEM and USEPA
ANAD-25	BUILDING 130 SUMP	200308	NFA, OU-2 ROD July 2008
ANAD-26	NORTH TNT BURIAL PIT	200212	NFA, OU-3 ROD June 2006
ANAD-32	HAZARDOUS WASTE STORAGE BLDG (BLDG 512)	199709	NFA, OU-2 ROD July 2008
ANAD-33	OLD HAZARDOUS WASTE STORAGE BLDG (512)	199709	NFA, OU-2 ROD July 2008
ANAD-34	CHEMICAL STORAGE IGLOOS(TOTAL 41)	199410	Not IRP eligible, active site with RCRA permit
ANAD-36	DRILL&TRANSFER SYS SITE(TXC DEMIL SITE)	199410	NFA, OU-3 ROD June 2006
ANAD-37	VEHICLE WASH RACK (BLDG 45)	200206	NFA recommended in the ASA RI, site included in OU-5 (SI phase), a letter approving RI was received from ADEM and USEPA
ANAD-38	ABRASIVE DUST COLLECTORS	200109	NFA, OU-2 ROD July 2008
ANAD-39	DYNAMOMETER WASTEWATER TRT SYS(BLDG 410)	200109	NFA, OU-2 ROD July 2008
ANAD-40	OIL-WATER SEPARATOR (BLDG 501)	200109	NFA, OU-2 ROD July 2008
ANAD-41	STM CLNG BLDGS(BLDG 129,130,409,421,503)	200109	NFA, OU-2 ROD July 2008
ANAD-42	PAINT BOOTHS(BLDG 129,130,143,409,433)	200109	NFA, OU-2 ROD July 2008
ANAD-43	CYANIDE PRETREATMENT SYS (BLDG 506)	200109	NFA, OU-2 ROD July 2008
ANAD-44	DRY CREEK	200206	Not IRP eligible, active site with NPDES permit
ANAD-45	LEAKING UST AT BLDG 410	200506	NFA Letter from ADEM, July 2006 (ARBCA)
ANAD-47	LEAKING UST AT BLDG 385	199603	UST Closure, Site Assessment, Building 385

IRP Schedule

Date of IRP Inception: 197804

Past Phase Completion Milestones

1982

IRA (ANAD-22 - A-BLOCK LAGOON (FACILITY 514))

1983

IRA (ANAD-25 - BUILDING 130 SUMP)

1986

SI (ANAD-02 - SITE Z-2 SANITARY LANDFILL, ANAD-03 - OLD IWTP (BUILDING 505), ANAD-04 - NEW IWTP (BUILDING 505), ANAD-06 - NA FILLED VALVE DISPOSAL PIT, ANAD-07 - CHEMICAL WASTE DISPOSAL PIT, ANAD-09 - CALCIUM HYPOCHLORITE BURIAL PIT, ANAD-12 - FACILITY 414 (OLD LAGOONS), ANAD-13 - ACID CHEMICAL WASTE PIT, ANAD-14 - LAUNDRY WASTE LEACHING FACILITY, ANAD-15 - PROPELLENT DISPOSAL FACILITY, ANAD-19 - OLD STP (EAST AREA), ANAD-20 - NEW STP (EAST AREA), ANAD-21 - ABRASIVE DUST LANDFILL, ANAD-22 - A-BLOCK LAGOON (FACILITY 514), ANAD-23 - ASBESTOS WASTE DISPOSAL TRENCH, ANAD-24 - OLD SANITARY LANDFILL, ANAD-25 - BUILDING 130 SUMP, ANAD-28 - WASTE WOOD LANDFILL, NORTHEAST PART DEPOT, ANAD-29 - OLD LUMBER DISPOSAL YARD, (NEAR BLDG 573), ANAD-30 - NORTHEAST LAGOON AREA, ANAD-31 - METAL PLATING SHOP (BUILDING 114), ANAD-32 - HAZARDOUS WASTE STORAGE BLDG (BLDG 512), ANAD-33 - OLD HAZARDOUS WASTE STORAGE BLDG (512), ANAD-38 - ABRASIVE DUST COLLECTORS, ANAD-39 - DYNAMOMETER WASTEWATER TRT SYS (BLDG 410), ANAD-40 - OIL-WATER SEPARATOR (BLDG 501), ANAD-41 - STM CLNG BLDGS (BLDG 129, 130, 409, 421, 503), ANAD-42 - PAINT BOOTHS (BLDG 129, 130, 143, 409, 433), ANAD-43 - CYANIDE PRETREATMENT SYS (BLDG 506), ANAD-44 - DRY CREEK)

RFA (ANAD-16 - BURNING GROUND (NW SIDE OF DEPOT), ANAD-17 - DEMOLITION PIT (NORTHWEST SIDE OF DEPOT))

PA (ANAD-01 - SITE Z-1 TRENCHES AREA, ANAD-02 - SITE Z-2 SANITARY LANDFILL, ANAD-03 - OLD IWTP (BUILDING 505), ANAD-04 - NEW IWTP (BUILDING 505), ANAD-05 - SINKHOLE (NEAR EASTERN BOUNDARY), ANAD-06 - NA FILLED VALVE DISPOSAL PIT, ANAD-07 - CHEMICAL WASTE DISPOSAL PIT, ANAD-08 - ACID DISPOSAL PIT, ANAD-09 - CALCIUM HYPOCHLORITE BURIAL PIT, ANAD-10 - TNT WASHOUT FACILITY SEDIMENTATION TANK, ANAD-11 - TNT LEACHING BEDS, ANAD-12 - FACILITY 414 (OLD LAGOONS), ANAD-13 - ACID CHEMICAL WASTE PIT, ANAD-14 - LAUNDRY WASTE LEACHING FACILITY, ANAD-15 - PROPELLENT DISPOSAL FACILITY, ANAD-18 - OLD STP (WEST AREA), ANAD-19 - OLD STP (EAST AREA), ANAD-20 - NEW STP (EAST AREA), ANAD-21 - ABRASIVE DUST LANDFILL, ANAD-22 - A-BLOCK LAGOON (FACILITY 514), ANAD-23 - ASBESTOS WASTE DISPOSAL TRENCH, ANAD-24 - OLD SANITARY LANDFILL, ANAD-25 - BUILDING 130 SUMP, ANAD-26 - NORTH TNT BURIAL PIT, ANAD-27 - SOUTH TNT BURIAL PIT, ANAD-28 - WASTE WOOD LANDFILL, NORTHEAST PART DEPOT, ANAD-29 - OLD LUMBER DISPOSAL YARD, (NEAR BLDG 573), ANAD-30 - NORTHEAST LAGOON AREA, ANAD-31 - METAL PLATING SHOP (BUILDING 114), ANAD-32 - HAZARDOUS WASTE STORAGE BLDG (BLDG 512), ANAD-33 - OLD HAZARDOUS WASTE STORAGE BLDG (512), ANAD-34 - CHEMICAL STORAGE IGLOOS (TOTAL 41), ANAD-35 - DEACTIVATION FURNACE, ANAD-36 - DRILL & TRANSFER SYS SITE (TXC DEMIL SITE), ANAD-37 - VEHICLE WASH RACK (BLDG 45), ANAD-38 - ABRASIVE DUST COLLECTORS, ANAD-39 - DYNAMOMETER WASTEWATER TRT SYS (BLDG 410), ANAD-40 - OIL-WATER SEPARATOR (BLDG 501), ANAD-41 - STM CLNG BLDGS (BLDG 129, 130, 409, 421, 503), ANAD-42 - PAINT BOOTHS (BLDG 129, 130, 143, 409, 433), ANAD-43 - CYANIDE PRETREATMENT SYS (BLDG 506), ANAD-44 - DRY CREEK)

1987

SI (ANAD-01 - SITE Z-1 TRENCHES AREA)

1993

ISC (ANAD-46 - LEAKING UST AT BLDG 6)

1994

ISC (ANAD-45 - LEAKING UST AT BLDG 410, ANAD-47 - LEAKING UST AT BLDG 385)

IRA (ANAD-02 - SITE Z-2 SANITARY LANDFILL)

1995

INV (ANAD-45 - LEAKING UST AT BLDG 410, ANAD-46 - LEAKING UST AT BLDG 6)

CS (ANAD-16 - BURNING GROUND (NW SIDE OF DEPOT), ANAD-17 - DEMOLITION PIT (NORTHWEST SIDE

IRP Schedule

	OF DEPOT))
SI	(ANAD-05 - SINKHOLE (NEAR EASTERN BOUNDARY), ANAD-08 - ACID DISPOSAL PIT, ANAD-10 - TNT WASHOUT FACILITY SEDIMENTATION TANK, ANAD-11 - TNT LEACHING BEDS, ANAD-18 - OLD STP (WEST AREA), ANAD-26 - NORTH TNT BURIAL PIT, ANAD-27 - SOUTH TNT BURIAL PIT, ANAD-34 - CHEMICAL STORAGE IGLOOS(TOTAL 41), ANAD-35 - DEACTIVATION FURNACE, ANAD-36 - DRILL&TRANSFER SYS SITE(TXC DEMIL SITE), ANAD-37 - VEHICLE WASH RACK (BLDG 45))
1996	
CAP	(ANAD-45 - LEAKING UST AT BLDG 410)
IMP(C)	(ANAD-45 - LEAKING UST AT BLDG 410)
INV	(ANAD-47 - LEAKING UST AT BLDG 385)
1997	
IMP(C)	(ANAD-46 - LEAKING UST AT BLDG 6)
CAP	(ANAD-46 - LEAKING UST AT BLDG 6)
RI/FS	(ANAD-32 - HAZARDOUS WASTE STORAGE BLDG (BLDG 512), ANAD-33 - OLD HAZARDOUS WASTE STORAGE BLDG (512))
2001	
RI/FS	(ANAD-06 - NA FILLED VALVE DISPOSAL PIT, ANAD-19 - OLD STP (EAST AREA), ANAD-20 - NEW STP (EAST AREA), ANAD-21 - ABRASIVE DUST LANDFILL, ANAD-22 - A-BLOCK LAGOON (FACILITY 514), ANAD-23 - ASBESTOS WASTE DISPOSAL TRENCH, ANAD-24 - OLD SANITARY LANDFILL, ANAD-28 - WASTE WOOD LANDFILL,NORTHEAST PART DEPOT, ANAD-38 - ABRASIVE DUST COLLECTORS, ANAD-39 - DYNAMOMETER WASTEWATER TRT SYS(BLDG 410), ANAD-40 - OIL-WATER SEPARATOR (BLDG 501), ANAD-41 - STM CLNG BLDGS(BLDG 129,130,409,421,503), ANAD-42 - PAINT BOOTHS(BLDG 129,130,143,409,433), ANAD-43 - CYANIDE PRETREATMENT SYS (BLDG 506))
2002	
RI/FS	(ANAD-02 - SITE Z-2 SANITARY LANDFILL, ANAD-03 - OLD IWTP (BUILDING 505), ANAD-04 - NEW IWTP (BUILDING 505), ANAD-05 - SINKHOLE (NEAR EASTERN BOUNDARY), ANAD-07 - CHEMICAL WASTE DISPOSAL PIT, ANAD-08 - ACID DISPOSAL PIT, ANAD-09 - CALCIUM HYPOCHLORITE BURIAL PIT, ANAD-10 - TNT WASHOUT FACILITY SEDIMENTATION TANK, ANAD-11 - TNT LEACHING BEDS, ANAD-12 - FACILITY 414 (OLD LAGOONS), ANAD-13 - ACID CHEMICAL WASTE PIT, ANAD-14 - LAUNDRY WASTE LEACHING FACILITY, ANAD-18 - OLD STP (WEST AREA), ANAD-31 - METAL PLATING SHOP (BUILDING 114), ANAD-35 - DEACTIVATION FURNACE, ANAD-37 - VEHICLE WASH RACK (BLDG 45), ANAD-44 - DRY CREEK)
2003	
IRA	(ANAD-12 - FACILITY 414 (OLD LAGOONS))
RI/FS	(ANAD-15 - PROPELLENT DISPOSAL FACILITY, ANAD-25 - BUILDING 130 SUMP, ANAD-26 - NORTH TNT BURIAL PIT, ANAD-27 - SOUTH TNT BURIAL PIT, ANAD-29 - OLD LUMBER DISPOSAL YARD,(NEAR BLDG 573), ANAD-30 - NORTHEAST LAGOON AREA)
2005	
IMP(O)	(ANAD-45 - LEAKING UST AT BLDG 410)
RA(C)	(ANAD-05 - SINKHOLE (NEAR EASTERN BOUNDARY), ANAD-07 - CHEMICAL WASTE DISPOSAL PIT, ANAD-08 - ACID DISPOSAL PIT, ANAD-09 - CALCIUM HYPOCHLORITE BURIAL PIT, ANAD-10 - TNT WASHOUT FACILITY SEDIMENTATION TANK, ANAD-11 - TNT LEACHING BEDS, ANAD-19 - OLD STP (EAST AREA), ANAD-20 - NEW STP (EAST AREA), ANAD-21 - ABRASIVE DUST LANDFILL, ANAD-22 - A-BLOCK LAGOON (FACILITY 514), ANAD-23 - ASBESTOS WASTE DISPOSAL TRENCH, ANAD-24 - OLD SANITARY LANDFILL, ANAD-27 - SOUTH TNT BURIAL PIT, ANAD-28 - WASTE WOOD LANDFILL,NORTHEAST PART DEPOT, ANAD-29 - OLD LUMBER DISPOSAL YARD,(NEAR BLDG 573), ANAD-30 - NORTHEAST LAGOON AREA, ANAD-35 - DEACTIVATION FURNACE)
PA	(ANAD-48 - WESTERN INDUSTRIAL AREA GROUNDWATER)
RD	(ANAD-05 - SINKHOLE (NEAR EASTERN BOUNDARY), ANAD-07 - CHEMICAL WASTE DISPOSAL PIT, ANAD-08 - ACID DISPOSAL PIT, ANAD-09 - CALCIUM HYPOCHLORITE BURIAL PIT, ANAD-10 - TNT

IRP Schedule

WASHOUT FACILITY SEDIMENTATION TANK, ANAD-11 - TNT LEACHING BEDS, ANAD-12 - FACILITY 414 (OLD LAGOONS), ANAD-13 - ACID CHEMICAL WASTE PIT, ANAD-19 - OLD STP (EAST AREA), ANAD-27 - SOUTH TNT BURIAL PIT, ANAD-29 - OLD LUMBER DISPOSAL YARD,(NEAR BLDG 573), ANAD-30 - NORTHEAST LAGOON AREA, ANAD-35 - DEACTIVATION FURNACE)

2006

RA(C) (ANAD-12 - FACILITY 414 (OLD LAGOONS), ANAD-13 - ACID CHEMICAL WASTE PIT)

LTM (ANAD-02 - SITE Z-2 SANITARY LANDFILL)

2010

SI (ANAD-48 - WESTERN INDUSTRIAL AREA GROUNDWATER)

Additional Past Phase Completion Milestones

2007 FS for OU-1 completed.

2008 SI for OU-5 completed.

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: 201509

Schedule for Next Five-Year Review: 2015

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

ANNISTON ARMY DEPOT IRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-01	SITE Z-1 TRENCHES AREA	RI/FS						
		RD						
		IRA						
		RA(C)						
		RA(O)						
		LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-05	SINKHOLE (NEAR EASTERN BOUNDARY)	RA(O)						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-07	CHEMICAL WASTE DISPOSAL PIT	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-08	ACID DISPOSAL PIT	RA(O)						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-09	CALCIUM HYPOCHLORITE BURIAL PIT	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-10	TNT WASHOUT FACILITY SEDIMENTATION TANK	RA(O)						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-11	TNT LEACHING BEDS	RA(O)						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-12	FACILITY 414 (OLD LAGOONS)	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-13	ACID CHEMICAL WASTE PIT	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-19	OLD STP (EAST AREA)	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-20	NEW STP (EAST AREA)	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-21	ABRASIVE DUST LANDFILL	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-22	A-BLOCK LAGOON (FACILITY 514)	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-23	ASBESTOS WASTE DISPOSAL TRENCH	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-24	OLD SANITARY LANDFILL	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-27	SOUTH TNT BURIAL PIT	RA(O)						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-28	WASTE WOOD LANDFILL,NORTHEAST PART DEPOT	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-29	OLD LUMBER DISPOSAL YARD,(NEAR BLDG 573)	LTM						

ANNISTON ARMY DEPOT IRP Schedule

SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-30	NORTHEAST LAGOON AREA	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-31	METAL PLATING SHOP (BUILDING 114)	IRA						
		RA(C)						
		RA(O)						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-35	DEACTIVATION FURNACE	RA(O)						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-46	LEAKING UST AT BLDG 6	IMP(O)						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-48	WESTERN INDUSTRIAL AREA GROUNDWATER	RI/FS						

ANNISTON 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: 3/0

Installation Site Types with Future and/or Underway Phases

- 1 Firing Range
(ANAD-001-R-01)
- 1 Open Burn
(ANAD-003-R-01)
- 1 Pistol Range
(ANAD-002-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 200203

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201503/201503

Date of MMRP completion including Long Term Management (LTM): 202509

MMRP Contamination Assessment

Contamination Assessment Overview

The DoD's environmental cleanup activities began in 1975 under IRP before any formal federal requirements or program was established. The DoD instituted its IRP to address past practices that often did not take long-term environmental effects into account. The environmental law driving the present Defense Environmental Restoration Program (DERP) is CERCLA, commonly known as the Superfund. The DERP was formally established by Section 211 of the SARA and is codified in Sections 2710-2710 of Title 10 of the US Code (USC) Superfund Amendments and Reauthorization Act before SARA. SARA set requirements for the DERP and its funding mechanisms, the Defense Environmental Restoration Account (DERA). DERA funding was available in 1984 before the formal establishment of the DERP.

The SI for Anniston MMRP sites is complete. MEC and MC are suspected of occurring at one site each. An RI was initiated in FY10 and continues through FY11. If necessary, an FS will be initiated and will continue through FY12.

Cleanup Exit Strategy

Currently, there are three sites listed under the ANAD MMRP program. The RI/FS for all three sites was initiated in FY10 and is expected to continue through FY11. If necessary, an FS will be initiated and will continue through FY12. No off-post contamination associated with the sites in the MMRP has been reported, and no responses have been issued. No complicating factors or uncertainties have been identified.

A draft non-time critical removal action and land use control plan is being proposed for these sites as a protective, interim measure. This action has been significantly vetted and should be ready to be proposed.

MMRP Previous Studies

	Title	Author	Date
2002	Closed, Transferred, or Transferring (CTT) Range Inventory	Malcolm Pirnie, Inc.	JAN-2002
2004	Final Historical Records Review	Malcolm Pirnie, Inc.	NOV-2004
2005	Final Site Inspection Report	Malcolm Pirnie, Inc.	JUL-2005
2012	Final Remedial Investigation/Characterization Action Work Plan	HydroGeoLogic, Inc.	FEB-2012
	Final Engineering Evaluation/Cost Analysis (EE/CA) Land Use Controls	URS Group, Inc.	FEB-2012

ANNISTON ARMY DEPOT
Military Munitions Response Program
Site Descriptions

Site ID: ANAD-001-R-01
Site Name: RECOILLESS RIFLE RANGE
Alias: RIFLE RNG

STATUS

Regulatory Driver: CERCLA
MRSPP Score: 04
 Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)
 Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	200203.....	200305
SI.....	200309.....	200507
RI/FS.....	201007.....	201309
RD.....	201310.....	201409
RA(C).....	201302.....	201503
LTM.....	201504.....	202509
RIP Date:	N/A	
RC Date:	201503	

SITE DESCRIPTION

The Recoilless Rifle Range is located in the northwest corner of the installation and was used in the 1960s to test the recoil of the recoilless rifle. The site was closed in 1975 for reasons that are unknown. The Recoilless Rifle Range currently covers 28 acres. The site has a 1,200 meter firing fan that extends to the west, acting as a safety zone for materials fired from the rifle range. Although inert ordnance was used at the site during the recoilless rifle testing, there is a potential for live munitions because the site is located east of the current operational range which is used for target practice with 57 millimeter (mm) and 106mm projectiles (the operational range was also used for small arms from 1981 to 1983). Once inside the installation's boundaries, access to the site is not limited; however, its current location is at least two miles from any occupied buildings and no bulk propellants or explosives are used at the site.

An SI gathered information to support that live ordnance may have been used here. Results of the July 2005 SI indicate that future investigation for MC and MEC should be conducted.

An RI/FS began in FY10. An FS, PP, and decision document (DD) are expected to be initiated in FY13 and to continue into FY14.

Five-year reviews will be included in ANAD-01.

CLEANUP/EXIT STRATEGY

An RI/FS to include groundwater wells was initiated in FY10 and expected to continue through FY13. The cleanup strategy assumes that RD, MEC removal, institutional controls, and MEC monitoring will be required.

Site ID: ANAD-002-R-01
Site Name: PISTOL RANGE
Alias: PISTOL RNG

STATUS

Regulatory Driver: CERCLA
MRSPP Score: 05
Contaminants of Concern: Munitions constituents (MC)
Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	200203.....	200305
SI.....	200309.....	200507
RI/FS.....	201002.....	201309
RD.....	201310.....	201409
RA(C).....	201302.....	201503
RIP Date:	N/A	
RC Date:	201503	

SITE DESCRIPTION

The Pistol Range was originally reported in the Phase III Army Closed, Transferring, and Transferred (CTT) Range Inventory (2002). According to the July 2005 SI, review of the historical records indicated that this was an unofficial small arms range used for a brief time period in the early-1980s. The current site area is 1.2 acres. MEC has not been detected and is not suspected at the site. The potential presence of MC at the site suggests further confirmatory actions.

An RI/FS began in FY10. An FS, PP, and DD are expected to be initiated in FY13 and to continue into FY14.

Five-year reviews will be included in ANAD-01.

CLEANUP/EXIT STRATEGY

An RI/FS to include groundwater wells was initiated in FY10 and will continue through FY13. The cleanup strategy assumes RD, excavation, and off-site transportation and waste disposal will be conducted after the RI/FS.

Site ID: ANAD-003-R-01
Site Name: Burning Ground Buffer Area
Alias: BURNING GD

STATUS

Regulatory Driver: CERCLA
MRSPP Score: 05
Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)
Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	200203.....	200305
SI.....	200309.....	200507
RI/FS.....	201002.....	201309
RD.....	201310.....	201409
RA(C).....	201302.....	201503

RIP Date: N/A
RC Date: 201503

SITE DESCRIPTION

In the Final Historical Records Review (2004), the burning ground buffer area was identified as a 351-acre site located in the northwestern section of the installation. The MMRP site encircles the operational burning ground from the current buffer area of 1,250 ft to the extent of the historic buffer zone of 2,400 ft. Due to land designated as RCRA permitted on the northern end of the site, the munitions response site (MRS) is horse-shoe shaped, with the open-end on the north, rather than a complete circle. The July 2005 SI did not identify MEC or munitions debris. In soil samples, explosives were not detected above the quantitation limit, and metals did not exceed the preliminary remediation goals (PRGs). The SI recommended an RI/FS for the site in order to further investigate MEC and MC.

An RI/FS began in FY10. An FS, a PP, and a DD are expected to be initiated in FY13 and continue into FY14.

Five-year reviews will be included in ANAD-01.

CLEANUP/EXIT STRATEGY

An RI/FS was initiated in FY10 and is expected to continue through FY13. The cleanup strategy assumes that RD, excavation, off-site transportation and waste disposal, and institutional controls will follow the RI/FS.

MEC removal action is not included because the SI indicated that the presence of MEC was unlikely. The RI will confirm this.

Site Closeout (No Further Action) Summary

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

MMRP Schedule

Date of MMRP Inception 200203

Past Phase Completion Milestones

2003

PA (ANAD-001-R-01 - RECOILLESS RIFLE RANGE, ANAD-002-R-01 - PISTOL RANGE, ANAD-003-R-01 - Burning Ground Buffer Area)

2005

SI (ANAD-001-R-01 - RECOILLESS RIFLE RANGE, ANAD-002-R-01 - PISTOL RANGE, ANAD-003-R-01 - Burning Ground Buffer Area)

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: 201503

Schedule for Next Five-Year Review: 2015

Estimated Completion Date of MMRP at Installation (including LTM phase): 202509

ANNISTON ARMY DEPOT MMRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-001-R-01	RECOILLESS RIFLE RANGE	RI/FS						
		RD						
		RA(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-002-R-01	PISTOL RANGE	RI/FS						
		RD						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
ANAD-003-R-01	Burning Ground Buffer Area	RI/FS						
		RD						
		RA(C)						

ANNISTON ARMY DEPOT
Army Defense Environmental Restoration Program
Compliance Restoration

CR Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 3/0

Installation Site Types with Future and/or Underway Phases

- 1 Contaminated Ground Water
(CC-ANAD-02)
- 1 Industrial Discharge
(CC-ANAD-05)
- 1 Storage Area
(CC-ANAD-04)

Most Widespread Contaminants of Concern

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

Media of Concern

Groundwater, Soil

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

Site ID	Site Name	Action	Remedy	FY
CC-ANAD-02	Building 504	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	2008

Duration of CR

Date of CR Inception: 199011

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201212/201409

Date of CR completion including Long Term Management (LTM): 201409

CR Contamination Assessment

Contamination Assessment Overview

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

ANAD has three CR site. CC-ANAD-02 (Building 504) lies within ANAD's southeast industrial complex. It is where tracked vehicles are refurbished for the Army. Fluids are drained from the vehicles into containment buckets. Overspills from the buckets are fed to floor drains that are routed to a storage tank. The floor of the building is concrete and over a period of time the floor has cracked because of the activities associated with refurbishing large tracked vehicles. Occasional overspills from the containment that seeped through the cracked concrete are believed to be the source of contaminants to the subsurface. The shallow zone consists primarily of clay, silt, and minor amounts of sand, with numerous rock and chert fragments.

The occurrence of rock and chert fragments apparently increases with depth until a more resistant rock fragment/rubble zone is encountered at approximately 20 to 30 ft below ground surface (bgs). The depths to groundwater across the site range from 14 to 16 ft bgs. The floor of the building has been repaired and plant operations continue. The current tenant has replaced the USTs with aboveground storage tanks (ASTs) and underground lines with aboveground lines. Underground lines have been grouted. The current tenant also has completed several free-product removals.

An ARBCA report was completed for this site to compute site-specific cleanup levels. Free-product removal and monitoring were initiated under the ARBCA program since FY09 and monitoring is expected to continue through FY14.

CC-ANAD-04 (The Defense National Stockpile Sites) are located in the northeastern portion of the ASA including a portion of the CLA. They were used to store strategic materials for National Defense. The materials include bauxite and manganese ore which are predominantly mined for the metals aluminum and manganese. The stockpile areas basically consisted of piles of these materials stored in the open, on the ground. These materials were initially stored at ANAD beginning in WWII. Each unit ranges in size from one acre to several acres. In 1995, Congress ordered the sale of the stockpiles, and the materials were sold and transported off-site from 1995 to 2001. A thin layer of ore remains on the surface at each of the stockpile areas.

A Phase I RFI was conducted February through May 2008 to assess the presence or absence of contamination at six of the Defense National Stockpile areas (Black & Veatch, 2009). As a result of the Phase I effort, further investigation (Phase II) was required by the ADEM to determine the extent of metals contamination at four of the sites. These four sites were: Bauxite Stockpile AOC J-CLA, Bauxite Stockpile AOC J-2, Bauxite Stockpile AOC J-3/AOC J-4, Manganese Dioxide Stockpile AOC J-1B and an additional site, Manganese Dioxide Stockpile AOC J-1A. Phase II field activities were conducted in July 2010. In addition to the collection and analysis of soil samples, both a human health risk assessment and a screening-level ecological risk assessment were conducted during the Phase II effort.

CC-ANAD-05 (Building 409) is located within the east area of ANAD in the Nichols Industrial Complex and covers an area of approximately 1.5 acres. It is an industrial building designated for abrasive and chemical cleaning operations for parts, painting, container repair, and testing. In February 2009, wastewater was observed seeping to the ground surface near one of the industrial sewer outlets, which was later discovered to be related to ruptured underground sewer piping, which is located approximately three ft (ft) bgs. A field investigation was conducted and an RFI report was submitted to ADEM in June 2009. In February 2010 ANAD personnel discovered a second release at Building 409 while upgrading sumps adjacent to Building 409. In April 2010 a cavity was discovered below the one of the concrete vats inside Building 409 that allowed discharges of wastewaters to the environment. Engineering measures were incorporated to repair the sources of all three releases shortly after they were discovered. The chemicals of potential concern (COPCs) from all three releases are similar and related to current operations within Building 409. ADEM also requested that ANAD conduct leak tests, flow tests, mass balance evaluations, etc., as necessary to determine which vats, pits, sumps, and pipes were/are leaking and the amount of wastewaters and constituents that have been released. This was to be done in addition to the RFI effort for the area around Building 409 affected by the earlier releases of wastewater. In summary, there were some metals and VOC exceedances in the soil and groundwater samples. Metals that were detected in the unfiltered groundwater samples were typically below the screening criteria in samples that were collected through a 0.45 micron filter. Turbidity readings from the unfiltered groundwater samples ranged from 18.3 nephelometric turbidity units (NTUs) to greater than 1000 NTUs. The lower concentration and/or lack of detection of metals in the filtered groundwater samples are an indication that turbidity may be a source of metals concentrations. TCE was the primary

CR Contamination Assessment

Contamination Assessment Overview

VOC detected in the groundwater. The concentrations were above screening levels, but they were not at levels that were indicative of a major release to the environment or a continuing source present in the subsurface media.

Cleanup Exit Strategy

An ARBCA report was completed for the Building 504 site in 2009. Free-product removal and monitoring were initiated under the ARBCA program since FY09. Based on the current site conditions, monitoring and remediation are expected to continue through FY13.

CR Previous Studies

	Title	Author	Date
2011	Groundwater Compliance Monitoring Report for Building 504	Black & Veatch Special Projects Corp.	APR-2011

ANNISTON ARMY DEPOT
Compliance Restoration
Site Descriptions

Site ID: CC-ANAD-02
Site Name: Building 504
Alias: Bldg 504

STATUS

Regulatory Driver: RCRA
 Contaminants of Concern: Petroleum, Oil and Lubricants (POL), Semi-volatiles (SVOC), Volatiles (VOC)
 Media of Concern: Groundwater, Soil

Phases	Start	End
ISC.....	199011.....	199012
INV.....	199012.....	199502
CAP.....	200801.....	200806
IMP(C).....	200801.....	200806
IMP(O).....	200907.....	201409
RIP Date:	200907	
RC Date:	201409	

SITE DESCRIPTION

Building 504 lies within ANAD's southeast industrial complex. It is where tracked vehicles are refurbished for the Army. Fluids are drained from the vehicles into containment buckets. Overspills from the buckets are fed to floor drains that are routed to a storage tank. The floor of the building is concrete and over a period of time the floor has cracked because of the activities associated with refurbishing large tracked vehicles. Occasional overspills from the containment that seeped through the cracked concrete are believed to be the source of contaminants to the subsurface. The shallow zone consists primarily of clay, silt, and minor amounts of sand, with numerous rock and chert fragments.

When employees of ANAD noticed a petroleum-like substance emerging from the base of the easternmost wall of Building 504, an investigation was launched to determine where the petroleum product was emanating from and the extent of the contamination. Initially, all drainage lines from Building 504 were pressure tested. The pipeline study indicated these drainage lines failed pressure tests conducted in 1996. International Technology (IT) Corp. performed a subsurface investigation of the building by installing soil borings which were advanced to a depth of 15 ft bgs in and around the building to determine the extent of contamination. Visual observations indicated that the concrete flooring was cracked at various locations. In addition, the floor (which consists of two layers of concrete) appears not to have been bonded at several boring locations. These locations coincide with the highest observed levels of contamination. Furthermore, diesel stains were found in between two concrete layers at two boring locations. Free-product was also observed from 12 to 13 ft bgs. The media of concern is groundwater. The contaminants of concern include acetone, benzene, toluene, ethylbenzene, and xylenes (BTEX). Total petroleum hydrocarbons (TPH) ranged from nondetect to 9,500 mg/kg. The vertical and horizontal extents of contamination are unknown at this point. Data available so far indicates that the petroleum may have leaked from drainage pipes or spills on the floor and entered the flooring through cracks, spread between the two concrete layers, and continued to migrate to the subsurface through the cracks in the lower concrete slab.

The occurrence of rock and chert fragments apparently increases with depth until a more resistant rock fragment/rubble zone is encountered at approximately 20 to 30 ft bgs. The depths to groundwater across the site range from 14 to 16 ft bgs. The floor of the building has been repaired and plant operations continue. The current tenant has replaced the USTs with ASTs and underground lines with aboveground lines. Underground lines have been grouted. The current tenant also has completed several free-product removals.

An ARBCA was completed for this site. Free-product removal and monitoring were initiated under the ARBCA program in FY09 and monitoring was expected to continue through FY11. However, due to the continued presence of free-product at the site, free-product removal and monitoring are expected to continue for two additional years through FY14.

CLEANUP/EXIT STRATEGY

An ARBCA report was completed for the Building 504 site in 2009. Free-product removal and monitoring were initiated under the ARBCA program since FY09. Based on the current site conditions, monitoring and remediation are expected to continue through

Site ID: CC-ANAD-02
Site Name: Building 504
Alias: Bldg 504

FY14.

Site ID: CC-ANAD-04
Site Name: Defense National Stockpile Sites
Alias: CC-ANAD-04

STATUS

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

Phases	Start	End
RFA.....	200701.....	200701
RFI/CMS.....	200910.....	201211
RIP Date:	N/A	
RC Date:	201211	

SITE DESCRIPTION

The Defense National Stockpile Sites at ANAD consisted of stockpile sites located in the northeastern portion of the ASA including a portion of the CLA. They were used to store strategic materials for National Defense. The materials include bauxite and manganese ore which are predominantly mined for the metals aluminum and manganese. The stockpile areas basically consisted of piles of these materials stored in the open, on the ground. These materials were initially stored at ANAD beginning in WWII. Each unit ranges in size from one acre to several acres. In 1995, Congress ordered the sale of the stockpiles, and the materials were sold and transported off-site from 1995 to 2001. A thin layer of ore remains on the surface at each of the stockpile areas.

A Phase I RFI was conducted February through May 2008 to assess the presence or absence of contamination at six of the Defense National Stockpile areas (Black & Veatch, 2009). As a result of the Phase I effort, further investigation (Phase II) was required by the ADEM to determine the extent of metals contamination at four of the sites. These four sites were: Bauxite Stockpile AOC J-CLA, Bauxite Stockpile AOC J-2, Bauxite Stockpile AOC J-3/AOC J-4, Manganese Dioxide Stockpile AOC J-1B and an additional site, Manganese Dioxide Stockpile AOC J-1A. Phase II field activities were conducted in July 2010. In addition to the collection and analysis of soil samples, both a human health risk assessment and a screening-level ecological risk assessment were conducted during the Phase II effort.

CLEANUP/EXIT STRATEGY

An NFA is expected after completion of RFI.

Site ID: CC-ANAD-05
Site Name: Building 409
Alias: CC-ANAD-05

STATUS

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

Phases	Start	End
RFA.....	200701.....	200701
CS.....	200904.....	200906
RFI/CMS.....	201011.....	201212
RIP Date:	N/A	
RC Date:	201212	

SITE DESCRIPTION

Building 409 is located within the east area of ANAD in the Nichols Industrial Complex and covers an area of approximately 1.5 acres. It is an industrial building designated for abrasive and chemical cleaning operations for parts, painting, container repair, and testing.

In February 2009, wastewater was observed seeping to the ground surface near one of the industrial sewer outlets, which was later discovered to be related to ruptured underground sewer piping, which is located approximately three ft bgs. A field investigation was conducted and an RFI report was submitted to ADEM in June 2009. In February 2010 ANAD personnel discovered a second release at Building 409 while upgrading sumps adjacent to Building 409. In April 2010 a cavity was discovered below the one of the concrete vats inside Building 409 that allowed discharges of wastewater to the environment.

Engineering measures were incorporated to repair the sources of all three releases shortly after they were discovered. The COPCs from all three releases are similar and related to current operations within Building 409.

ADEM also requested that ANAD conduct leak tests, flow tests, mass balance evaluations, etc., as necessary to determine which vats, pits, sumps, and pipes were/are leaking and the amount of wastewaters and constituents that have been released. This was to be done in addition to the RFI effort for the area around Building 409 affected by the earlier releases of wastewater.

In summary, there were some metals and VOC exceedances in the soil and groundwater samples. Metals that were detected in the unfiltered groundwater samples were typically below the screening criteria in samples that were collected through a 0.45 micron filter. Turbidity readings from the unfiltered groundwater samples ranged from 18.3 NTUs to greater than 1000 NTUs. The lower concentration and/or lack of detection of metals in the filtered groundwater samples are an indication that turbidity may be a source of metals concentrations. TCE was the primary VOC detected in the groundwater. The concentrations were above screening levels, but they were not at levels that were indicative of a major release to the environment or a continuing source present in the subsurface media.

CLEANUP/EXIT STRATEGY

An NFA is expected after completion of RFI.

Site Closeout (No Further Action) Summary

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

Date of CR Inception: 199011

Past Phase Completion Milestones

1991

ISC (CC-ANAD-02 - Building 504)

1995

INV (CC-ANAD-02 - Building 504)

2007

RFA (CC-ANAD-04 - Defense National Stockpile Sites, CC-ANAD-05 - Building 409)

2008

IMP(C) (CC-ANAD-02 - Building 504)

CAP (CC-ANAD-02 - Building 504)

2009

CS (CC-ANAD-05 - Building 409)

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: 200806

Schedule for Next Five-Year Review: 2015

Estimated Completion Date of CR at Installation (including LTM phase): 201409

ANNISTON ARMY DEPOT CR Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
CC-ANAD-02	Building 504	IMP(O)						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
CC-ANAD-04	Defense National Stockpile Sites	RFI/CMS						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
CC-ANAD-05	Building 409	RFI/CMS						

Community Involvement

Technical Review Committee (TRC): 199310

Community Involvement Plan (Date Published): 200406

Restoration Advisory Board (RAB): RAB established 199805

RAB Adjournment Date: N/A

RAB Adjournment Reason: None

Additional Community Involvement Information

The TRC was converted into a RAB in May 1998. The RAB is made up of local officials, members of environmental groups and members of the local community. The RAB meets quarterly and discusses ongoing work in the IRP. The RAB has also played an active role in public meetings for the CGW RI, including the private well and spring inventory.

RAB members have expressed interest in reducing meeting frequency to less than quarterly, until there is greater Environmental Restoration, Army (ER,A) program activity. Members have also requested, and been given, information on how to apply for a TAPP grant. The CIP update is currently underway and expected to be completed in 2012.

Administrative Record is located at

Anniston Army Depot
Directorate of Risk Management, Bldg 199
7 Frankford Avenue
Anniston, AL 36201
(256) 235-4854

Information Repository is located at

Jacksonville State University
Houston Cole Library
Jacksonville, AL 36265
(256) 782-5255

Anniston Calhoun County Public Library
108 East 10th Street
Anniston, AL 36202
(256) 237-8501

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

TAPP Title: N/A

Potential TAPP: The RAB has decided not to take advantage to TAPP opportunity at this time.

