

## **ROCKY MOUNTAIN ARSENAL**

**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), the Rocky Mountain Arsenal (RMA), the executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules, and tentative budgets for all major Army installation cleanup programs.

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

### Acronyms

- ACM Asbestos Containing Material
- AEDB-R Army Environmental Database Restoration
  - AOC Area of Concern
  - **BBM Biota Barrier Material**
  - bcy bank cubic yard
  - BOA balance of areas
  - CAMU Corrective Action Management Unit
  - CAR Contamination Assessment Report
  - CCR Construction Completion Report
  - ccy compacted cubic yard
- CDPHE Colorado Department of Public Health and Environment
- CERCLA Comprehensive Environmental Response, Compensation and Liability Act
  - CFS Confined Flow System
  - CIP Community Involvement Plan
  - COC Contaminant of Concern
  - CQA Construction Quality Assurance
  - CQAP Construction Quality Assurance Plan
  - CSRG Containment System Remediation Goals
  - CSV Contigent Soil Volume
  - CWM Chemical Weapon Munitions
  - DAA Detailed Analysis of Alternatives
  - DBCP Dibromochloropropane
  - DCN Design Change Notice
  - DIMP Di-isopropylmethyl Phosphonate
- DNAPL Dense Non-aqueous Phase Liquid
  - DoD Department of Defense
  - DSA Development and Screening of Alternatives
  - DSR Data Summary Report
  - EA Endangerment Assessment
  - ELF Enhanced Hazardous Waste Landfill
  - ER,A Environmental Restoration, Army
  - ESD Explanation of Significant Differences
  - ESL Existing Sanitary Landfills
  - FFA Federal Facilities Agreement
  - FRA Final Remedial Action
  - FS Feasibility Study
  - FY Fiscal Year
  - GB Sarin
  - gpm gallons per minute
- HBSF Hydrazine Blending and Storage Facility
- HHE Human Health Exceedance
- HHEA Human Health Exposure Assessment
- HWL Hazardous Waste Landfill
- IAP Installation Action Plan
- ICS Integrated Cover System

### Acronyms

- IR Installation Restoration
- IRA Interim Remedial Action
- K thousand
- LNAPL Light Non-aqueous Phase Liquid
  - LTM Long-Term Management
- LTMP Long-Term Monitoring Plan
- LUC Land Use Control
- LWTS Landfill Wastewater Treatment System
- MEC Munitions and Explosives of Concern
- MR Munitions Response
- N/A Not Applicable
- NBCS North Boundary Containment System
- NDMA nitrosodimethylamine
  - NFA No Further Action
  - NFU No Further Use
  - NPL National Priorities List
- NPS Northern Pathway
- O&M Operations and Maintenance
- OAS Organizations and State
- OCP Organochlorine Pesticide
- OU Operable Unit
- PA Preliminary Assessment
- PCB Polychlorinated Biphenyls
- POL Petroleum, Oil and Lubricants
- PPLV Preliminary Pollutant Limit Value
- PQL Practical Quantitation Levels
- PREAP Petroleum Release Evaluation Action Plan
  - QA Quality Assurance
  - **RA Remedial Actions**
- RA(C) Remedial Action (Construction)
- RA(O) Remedial Action (Operation)
- RAB Restoration Advisory Board
- RC Response Complete
- RCRA Resource Conservation and Recovery Act
- RCWM Recovered Chemical Warfare Materiel
  - RD Remedial Design
  - **RDIS** Remediation Design and Implementation Schedule
  - **RI** Remedial Investigation
  - **RIP Remedy-in-Place**
  - RMA Rocky Mountain Arsenal
  - ROD Record of Decision
  - RP Responsible Party
- RRSE Relative Risk Site Evaluation
- **RVO** Remediation Venture Office
- Shell Shell Oil Company

### Acronyms

- SI Site Inspection
- STFP South Tank Farm Plume
- STP Sewage Treatment Plant
- SVE Soil Vapor Extraction
- SVOC Semi-Volatile Organic Compound
- SWP Site-Wide Program
- TAPP Technical Assistance for Public Participation
- TCH Tri-County Health Department
- TRC Technical Review Committee
- TSCA Toxic Substances Control Act
- USAEC US Army Environmental Command
- USATHAMA US Army Toxic and Hazardous Materials Agency
- USATSDR US Agency for Toxic Substances and Disease Registry
  - USDOI US Department of Interior
  - USDOJ US Department of Justice
  - USEPA United States Environmental Protection Agency
  - USFWS US Fish and Wildlife Service
  - USGS US Geological Survey
    - UST Underground Storage Tank
  - VOC Volatile Organic Compound
  - WWII World War II
  - WWT Wastewater Treatment

#### Installation Locale

Installation Size (Acreage): 1,186.40 City: Commerce City County: Adams State: Colorado Other Locale Information

Originally, the RMA was a 27-square-mile (17,000 acres) installation located in southern Adams County, Colorado, approximately nine miles northeast of downtown Denver. Areas bordering RMA are residential and agricultural land. Denver International Airport is adjacent to the eastern boundary, the Denver residential community of Montbello and a new residential and commercial community of Stapleton are to the south, and Commerce City, a residential, commercial, and industrial land use, is to the west. In recent years Commerce City has experienced rapid residential development to the north. Commercial development is in its early phase. Through a series of transfers, RMA is now a 1.8 square mile installation.

#### **Installation Mission**

The mission of the RMA is to clean up and transfer property to the US Fish and Wildlife Service (USFWS) for the establishment of the RMA National Wildlife Refuge.

#### Lead Organization

Base Realignment and Closure Division

#### Lead Executing Agencies for Installation

Program Manager, RMA - Department of the Army

#### **Regulator Participation**

Federal	US Environmental Protection Agency (USEPA), Region VIII
Local	Tri-County Health Department (TCH) (Adams, Arapahoe, and Douglas Counties)
State	Colorado Department of Public Health and Environment (CDPHE)

#### **National Priorities List (NPL) Status**

A score of 58 was recorded on 01-JUL-87.

#### Final RA(C) Completion Date: 201107

#### Date for NPL Deletion: TBD

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

RAB established 1994

#### Installation Program Summaries

#### IRP

Primary Contaminants of Concern: Asbestos, Chemical weapon munitions (CWM)/Chemical agent, Explosives, Metals, Munitions and explosives of concern (MEC), Pesticides, Petroleum, Oil and Lubricants (POL), Semi-volatiles (SVOC), Volatiles (VOC), White Phosphorous

Affected Media of Concern: Groundwater, Soil

#### Installation Historic Activity

The RMA was established by the US Army in 1942 for the production of chemical and incendiary munitions. In 1988, it was placed on inactive status. South Plants housed the World War II (WWII) era manufacturing plants. Major war chemicals produced were mustard, lewisite, and chlorine gas (blister agents). Additionally, over 100,000 tons of incendiary munitions were produced by the end of WWII. In the 1950s, as the Cold War heated up, an additional manufacturing site, North Plants, was constructed to manufacture Sarin (GB) nerve agent. Through the 1970s demilitarization operations of chemical and incendiary ordnance were conducted. Unused portions of the South Plants area were leased to several private chemical producers, most notably Shell Chemical Company, which produced industrial and agricultural chemicals, mainly pesticides and herbicides, from the late-1940s until the early-1980s.

In the 1940s and early-1950s, liquid waste streams from the production processes were discharged into a natural unlined evaporation pond, Basin A, located in Section 36. As waste stream production exceeded the Basin A capacity, additional unlined evaporation Basins B, C, D, and E were used for waste discharge in adjacent sections. In 1956, Basin F, a state-of-the-art, asphalt-lined evaporation basin, was constructed to place waste from Basins A, B, C, D, and E and to collect and store the liquid waste streams from the various processes. Solid wastes from industrial and military chemical production were primarily disposed of through burial and burning in Section 36, although some other on-post disposal sites were also used.

Tight controls on chemical agent production ensured that there were no catastrophic releases during manufacturing and demilitarization operations; however, other contamination of RMA soil, surface water, and groundwater and in groundwater to the northwest of RMA did occur. This contamination came from a number of sources, including liquid waste disposal in the evaporation basins, solid waste burial in trenches, accidental spills of feedstock chemicals, leakage from sewer and process water systems, emissions from permitted air stacks, and the use of commercial chemical products in normal facility operations.

Off-site contamination of groundwater was discovered in the 1950s. In 1975, a Cease and Desist Order issued by the state of Colorado prompted action. In 1976, the Army initiated studies to determine sources of contamination and began construction of boundary groundwater control systems and other source control measures. In 1987, RMA was designated a Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) NPL site, with two operable units (OU) designated as the on-post and off-post OUs.

On Feb. 17, 1989, RMA's Federal Facilities Agreement (FFA) was signed by five federal agencies and one private corporation and became effective, binding, and enforceable. Signatories to the FFA were the US Army, the Shell Oil Company (Shell), the US Department of Interior (USDOI), the USEPA, the US Department of Justice (USDOJ), and the US Agency for Toxic Substances and Disease Registry (USATSDR). (The state of Colorado is not a signatory to the FFA.) The FFA details land use controls (LUCs) in the form of perpetual restrictions. These restrictions prohibit residential development, the use of groundwater and surface water for potable purposes, the consumption of fish and game taken on the RMA, and agriculture for consumption.

The Army is a responsible party (RP) under CERCLA and the lead agent in the remedial investigation (RI), feasibility study (FS), remedial design (RD), and RA phases for the two OUs. Shell is also an RP. Shell shares in the cost of cleanup, provides technical expertise, and performs some cleanup actions.

The USFWS manages the flora and fauna of RMA as a National Wildlife Refuge under the Sikes Act and the RMA National Wildlife Refuge Act. Once final remediation is completed and certified by the USEPA, land that is not going to be maintained by the Army has been and will be transferred to the USFWS. The USEPA, as the lead regulatory agency, has oversight authority for the cleanup and final decision authority to resolve disputes among the organizations.

Since 1975, the Army and Shell have undertaken numerous efforts to protect on-post and off-post human health and environment through the implementation of source controls and interim remedial actions (IRAs). These remedial activities were initiated through agreements with both the USEPA and the state of Colorado for the immediate implementation of treatment and containment actions. Following initial investigations, contamination sources were identified and initial source control actions were implemented.

In addition to the source control actions and in accordance with the FFA, 14 IRAs were established for implementation prior to the RMA On-Post Record of Decision (ROD). All IRAs were completed with the signing of the ROD in June 1996, except for the asbestos and process equipment IRAs that continued until December 1997. All work conducted after that time has been performed as a final remedial action (FRA) rather than an IRA. In October 2000, Construction Completion Reports (CCRs), detailing the activities and status of the IRAs were accepted by the USEPA.

The preferred alternatives were selected as part of a deliberative process involving the parties (the Army, Shell, the state of Colorado, the USEPA, and the USFWS) and the stakeholders (interested citizens and representatives of city and county agencies, and RAB members). In October 1995, these alternatives were outlined in a proposed plan and the on-post ROD was signed in June 1996.

Since then, the Army developed 33 implementation projects from the selected remedy in the ROD. In addition to these projects, there are the site-wide and water treatment/ monitoring projects. These projects are outlined in the remediation design and implementation schedule (RDIS), which is the detailed schedule for completion of activities associated with the selected remedy and appended to the ROD. The RDIS provides a comprehensive view of the overall remediation program and its status to the regulators and the public. Additionally, this schedule is used to develop enforceable and target deadlines for the completion of design and implementation activities as defined in the FFA. An enforceable deadline date of Sept. 30, 2011 has been established in the RDIS for completion of the entire remediation.

In order to accelerate the remedy, five projects that were incorporated into the integrated cover system (ICS) have undergone significant design modifications and allowed for cost savings. Additionally, in concert with those design improvements, the Remediation Venture Office (RVO) worked with the USAEC to maximize the funding made available to accelerate the execution of the final remedy actions at RMA. The result of those efforts was that RMA was able to program additional Environmental Restoration, Army (ER,A) funds in fiscal years (FY) 2008 and 2009 which allowed for acceleration of the schedule to achieve construction completion by fall 2010, and receive regulatory acceptance in FY11.

Groundwater treatment systems will continue to operate at the boundaries, off-post and in the center of the installation (source area). Resource Conservation and Recovery Act (RCRA)-equivalent covers were placed on contained wastes and landfills. Property where wastes are placed and where groundwater treatment systems continue to operate will be retained by the Army. Army maintained areas, will be managed as detailed in the FFA. Long-term management (LTM) will occur at all sites where waste is placed. The third five-year review began in October 2009 and was approved (USEPA approval) in November 2011.

The requirement to implement an environmental remediation program and subsequent long-term Operations & Maintenance (O&M) at RMA was defined in the RMA ROD. Based on the requirements set forth in that document, upon completion of the remedy fieldwork, O&M activities in support of remediation at RMA will be performed after the USEPA certifies the completion of the surface remedy. These activities include monitoring and maintaining containment systems, such as the caps and landfills, and continuing the operation of groundwater treatment systems. Since soon after the signing of the ROD, most of the remediation activities have been performed under two separate contracts: one under US Army authority and one under the authority of the Army's liability partner, Shell Oil Company. All Long-Term O&M activities have transitioned to a new single O&M contract under Army authority awarded in 2013. While this contract will be funded and managed by the Army, both parties will share in the financial liability via a separate accounting process according to the terms and procedures defined in the RMA Settlement Agreement 1989.

#### Installation Program Cleanup Progress

#### IRP

Prior Year Progress:	Operation of groundwater treatment systems continued and the post-closure monitoring and maintenance activities continued for the Enhanced Hazardous Waste Landfill (ELF) and the Hazardous Waste Landfill (HWL). Monitoring/maintenance continued on the RCRA-equivalent cover, and on the Ecrmer Basin E (NCSA-3). The Long-Term Operations and Maintenance contract was
	and on the Former Basin F (NCSA-3). The Long-Term Operations and Maintenance contract was awarded.

Future Plan of Action: Groundwater treatment systems will continue to operate. The post-closure monitoring and maintenance activities will continue for the ELF and the HWL. The monitoring and maintenance activities will continue for the RCRA-equivalent cover (ICS), and for the Former Basin F (NCSA-3).

## 5-Year / Periodic Review Summary

#### 5-Year / Periodic Review Summary

Status	Begin Date	End Date	End FY	
Complete	200910	201109	2011	
Complete	200512	200712	2008	
Complete	200012	200101	2001	
Planned	201504	201512	2016	

#### Last Completed 5-Year / Periodic Review Details

Associated ROD/DD Name	Sites
RMA Off-Post Record of Decision	OU-N, OU-NW
RMA Off-Post Record of Decision	OU-N, OU-NW
RMA On-Post Record of Decision	A-A, A-PE, A-S36BR, A-SPN, AS, AT, AW, B1727,
	CERCLA-LW, CSA-1A, CSA-1B, CSA-1C, CSA-1D,
	CSA-2A, CSA-2B, CSA-2C, CSA-2D, CSA-3, CSA-4,
	ELF, ESA-1A, ESA-1B, ESA-1C, ESA-1D, ESA-2A,
	ESA-2B, ESA-2C, ESA-3A, ESA-3B, ESA-3C, ESA-
	3D, ESA-3E, ESA-3F, ESA-3G, ESA-3H, ESA-3I,
	ESA-3J, ESA-3K, ESA-4A, ESA-4B, ESA-4C, ESA-5,
	ESA-6A, ESA-6B, ESA-6C, ESA-6D, FD-DUST,
	FWASTEPILE, HWL, N-CF, N-NP, NA-PE, NCSA-1A,
	NCSA-1B, NCSA-1C, NCSA-1D, NCSA-1E, NCSA-1F,
	NCSA-1G, NCSA-2A, NCSA-2B, NCSA-2C, NCSA-2D,
	NCSA-3, NCSA-4A, NCSA-4B, NCSA-5A, NCSA-5B,
	NCSA-5C, NCSA-5D, NCSA-6A, NCSA-6B, NCSA-7,
	NCSA-8A, NCSA-8B, NCSA-8C, NCSA-9A, NCSA-9B,
	NCSA-9C, NCSA-9D, NCSA-9E, NCSA-9F, NCSA-9G,
	NCSA-9H, NCSA-9I, NCSA-9J, NCSA-9K, NCSA-9L,
	NCSA-9M, NCSA-9N, NCSA-9O, NCSA-9P, NCSA-9Q,
	NCSA-9R, NCSA-9S, NFU-A, NFU-MNP, NFU-MP,
	NPSA-1, NPSA-2, NPSA-3, NPSA-4, NPSA-5, NPSA-
	6, NPSA-7, NPSA-8A, NPSA-8B, NPSA-8C, NPSA-9A,
	NPSA-9B, NPSA-9C, NPSA-9D, NPSA-9E, NPSA-9F,
	NW-A, NW-SC, OU-N, OU-NW, PCB-STRUC., S-SPN,
	S-SPSE, SANSEWER, SP-SPSW, SP-STF, SPSA-10,
	SPSA-11, SPSA-12A, SPSA-12B, SPSA-12C, SPSA-
	1A, SPSA-1B, SPSA-1C, SPSA-1D, SPSA-1E, SPSA-
	1F, SPSA-1G, SPSA-2A, SPSA-2B, SPSA-2C, SPSA-
	2D, SPSA-2E, SPSA-3A, SPSA-3B, SPSA-3C, SPSA-
	3D, SPSA-3E, SPSA-4A, SPSA-4B, SPSA-5A, SPSA-
	5B, SPSA-6, SPSA-7A, SPSA-7B, SPSA-7C, SPSA-
	8A, SPSA-8B, SPSA-8C, SPSA-9A, SPSA-9B, SSA-
	1A, SSA-1B, SSA-1C, SSA-1D, SSA-1E, SSA-1F,
	SSA-2A, SSA-2B, SSA-2C, SSA-3A, SSA-3B, SSA-4,
	SSA-5A, SSA-5B, SSA-5C, SSA-5D, SSA-5E, UT-
	TANKS, W-MP, W-R, W-W, WSA-1A, WSA-1B, WSA-
	1C, WSA-1D, WSA-1E, WSA-1F, WSA-1G, WSA-2,
	WSA-3A, WSA-3B, WSA-3C, WSA-3D, WSA-4A,
	WSA-4B, WSA-5A, WSA-5B, WSA-5C, WSA-5D,
	WSA-6A, WSA-6B, WSA-6C, WSA-6D, WSA-6E,
	WSA-7A, WSA-7B, WSA-8A, WSA-8B, WSA-8C,
	WSA-8D, WSA-8E, WSA-8F
RMA On-Post Record of Decision	A-A, A-PE, A-S36BR, A-SPN, AS, AT, AW, B1727,
	CERCLA-LW, CSA-1A, CSA-1B, CSA-1C, CSA-1D,
	CSA-2A, CSA-2B, CSA-2C, CSA-2D, CSA-3, CSA-4,

### **5-Year / Periodic Review Summary**

Associated ROD/DD Name	Sites
	ELF, ESA-1A, ESA-1B, ESA-1C, ESA-1D, ESA-2A,
	ESA-2B, ESA-2C, ESA-3A, ESA-3B, ESA-3C, ESA-
	3D, ESA-3E, ESA-3F, ESA-3G, ESA-3H, ESA-3I,
	ESA-3J, ESA-3K, ESA-4A, ESA-4B, ESA-4C, ESA-5,
	ESA-6A, ESA-6B, ESA-6C, ESA-6D, FD-DUST,
	FWASTEPILE, HWL, N-CF, N-NP, NA-PE, NCSA-1A,
	NCSA-1B, NCSA-1C, NCSA-1D, NCSA-1E, NCSA-1F,
	NCSA-1G, NCSA-2A, NCSA-2B, NCSA-2C, NCSA-2D,
	NCSA-3, NCSA-4A, NCSA-4B, NCSA-5A, NCSA-5B,
	NCSA-5C, NCSA-5D, NCSA-6A, NCSA-6B, NCSA-7,
	NCSA-8A, NCSA-8B, NCSA-8C, NCSA-9A, NCSA-9B,
	NCSA-9C, NCSA-9D, NCSA-9E, NCSA-9F, NCSA-9G,
	NCSA-9H, NCSA-9I, NCSA-9J, NCSA-9K, NCSA-9L,
	NCSA-9M, NCSA-9N, NCSA-9O, NCSA-9P, NCSA-9Q
	NCSA-9R, NCSA-9S, NFU-A, NFU-MNP, NFU-MP,
	NPSA-1, NPSA-2, NPSA-3, NPSA-4, NPSA-5, NPSA-
	6, NPSA-7, NPSA-8A, NPSA-8B, NPSA-8C, NPSA-9A
	NPSA-9B, NPSA-9C, NPSA-9D, NPSA-9E, NPSA-9F,
	NW-A, NW-SC, OU-N, OU-NW, PCB-STRUC., S-SPN
	S-SPSE, SANSEWER, SP-SPSW, SP-STF, SPSA-10,
	SPSA-11, SPSA-12A, SPSA-12B, SPSA-12C, SPSA-
	1A, SPSA-1B, SPSA-1C, SPSA-1D, SPSA-1E, SPSA-
	1F, SPSA-1G, SPSA-2A, SPSA-2B, SPSA-2C, SPSA-
	2D, SPSA-2E, SPSA-3A, SPSA-3B, SPSA-3C, SPSA-
	3D, SPSA-3E, SPSA-4A, SPSA-4B, SPSA-5A, SPSA-
	5B, SPSA-6, SPSA-7A, SPSA-7B, SPSA-7C, SPSA-
	8A, SPSA-8B, SPSA-8C, SPSA-9A, SPSA-9B, SSA-
	1A, SSA-1B, SSA-1C, SSA-1D, SSA-1E, SSA-1F,
	SSA-2A, SSA-2B, SSA-2C, SSA-3A, SSA-3B, SSA-4,
	SSA-5A, SSA-5B, SSA-5C, SSA-5D, SSA-5E, UT-
	TANKS, W-MP, W-R, W-W, WSA-1A, WSA-1B, WSA-
	1C, WSA-1D, WSA-1E, WSA-1F, WSA-1G, WSA-2,
	WSA-3A, WSA-3B, WSA-3C, WSA-3D, WSA-4A,
	WSA-4B, WSA-5A, WSA-5B, WSA-5C, WSA-5D,
	WSA-6A, WSA-6B, WSA-6C, WSA-6D, WSA-6E,
	WSA-7A, WSA-7B, WSA-8A, WSA-8B, WSA-8C,
	WSA-8D, WSA-8E, WSA-8F

ResultsRemedies are protective of human health and the environment, and exposure pathways that could result in unacceptable risks are controlled.

- ActionsExposed sanitary sewer pipe in Section 35 was plugged & covered, a Site Specific PQL Study was completed and a Decision Document documenting this was signed in October 2011. All recommended actions from the 2005 FYR are nearly complete.
- Plans1,4-Dioxane samp. where 1,1,1, TCA detected. Monitor LNAPL & DNAPL. USFWS Seas. Worker Quantitative RA. Report on HWL & the ELF & SW monitoring results to reg. agencies, & Chlordane analytical method re-certified to meet CSRGs of 0.03 ug/L.

#### Recommendations and Implementation Plans:

The next five-year review is scheduled for 2015. Remedies are protective of human health and the environment. The following recommendations and actions were identified in the 2010 five-year review to ensure protectiveness.

**Recommendations and Implementation Plans:** 

Recommended actions currently underway:

An Explanation of Significant Differences (ESD) for Lime Basins dense non-aqueous phase liquid (DNAPL) was finalized in January 2012. Eight monitoring wells were installed in the Lime Basins area in August 2012 to continue to monitor for DNAPL. The wells were incorporated into the Long-Term Monitoring Program (LTMP).

1,4-Dioxane Sampling: Because of a new (lower) state groundwater standard, a sampling program was carried out in 2012. Results are available and additional monitoring and data evaluation will be required.

Temporary Worker Residential Use Risk Assessment: The USFWS began providing temporary on-site housing for temporary workers in 2009. The RAs requested and participated in the scoping of a risk assessment to evaluate this land use, and the results were presented and discussed with the RAs in 2012. USFWS use of the on-site housing has been suspended while the discussion of the Risk Assessment with the RAs is ongoing.

Recommended actions completed since the five-year review:

The Chlordane analytical method was re-certified to meet the Containment System Remediation Goal of 0.03.

Monitoring for light non-aqueous phase liquids (LNAPL) and DNAPL will be continued.

### **Parcel Summary**

#### Summary of Parcel Prioritization and Transfer Strategy

Parcel Name: Central Areas & Off-Post Surface Media Parcel Size: 2,500.00 Associated Sites: Transfer Date: 201009 Current Land Use: N/A Future Land Use: N/A Encumbrances: N/A Leases/Permits/Licenses: N/A Transfer Strategy: Transfer to Other Federal Agencies Recipient Organization: US Fish & Wildlife Service Other Issues Affecting Transfer:N/A

Parcel Name: Retain Parcel Size: 1,000.00 Associated Sites: SWP, W-MP, OU-N, HWL, ELF, A-A, NCSA-3, NW-A, N-NP, ICS, OU-NW Transfer Date: N/A Current Land Use: N/A Future Land Use: N/A Encumbrances: N/A Leases/Permits/Licenses: N/A Transfer Strategy: Army Retained Recipient Organization: US Army Other Issues Affecting Transfer:N/A

### **ROCKY MOUNTAIN ARSENAL**

Non-BRAC Excess Installation Restoration Program

#### Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 213/202

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

#### 6 Contaminated Ground Water

- (A-A, N-NP, NW-A, OU-N, OU-NW, W-MP)
- 2 Landfill
- (ELF, HWL) 1 Storage Area
- 1 Storage Area (SWP)
- 1 Surface Disposal Area
  - (ICS)
- 1 Surface Impoundment/Lagoon

(NCSA-3)

#### Most Widespread Contaminants of Concern

Asbestos, Chemical weapon munitions (CWM)/Chemical agent, Explosives, Metals, Munitions and explosives of concern (MEC), Pesticides, Petroleum, Oil and Lubricants (POL), Semi-volatiles (SVOC), Volatiles (VOC), White Phosphorous

#### **Media of Concern**

Groundwater, Soil

Completed R Site ID	emedial Actions (Interim Reme Site Name	dial Actior Action	ns / Final Remedial Actions (IRA/FRA)) Remedy	FY	Cost
N-NP	NORTH BOUNDARY CONTAINMENT SYSTEM	IRA	GROUND WATER TREATMENT	1980	\$13,000.0 K
FWASTEPIL E	BASIN F WASTEPILE	IRA	CAPPING	1989	\$41,800.0 K
A-A	BASIN A NECK SYSTEM	IRA	GROUND WATER TREATMENT	1990	\$4,100.0 K
A-SPN	BASIN A/SOUTH PLANTS NO. PLUME	IRA	GROUND WATER TREATMENT	1990	\$1.0 K
AW	ABANDONED WELLS CLOSURE IRA	IRA	OTHER	1990	\$5,500.0 K
W-R	WESTERN/RAILYARD PLUME	IRA	GROUND WATER TREATMENT	1991	\$4,300.0 K
CERCLA- LW	CERCLA LIQUID WWT PLANT	IRA	OTHER	1992	\$9,100.0 K
CSA-1A	DISPOSAL TRENCHES- SHELL TRENCHES	IRA	CAPPING	1992	TBD
SANSEWER	SANITARY SEWER IRA	IRA	OTHER	1992	\$1,700.0 K
SPSA-6	HYDRAZINE FUEL BLENDING/STORAGE FACILITY	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1992	\$13,800.0 K
W-MP	WESTERN/MOTOR POOL PLUME	IRA	GROUND WATER TREATMENT	1992	\$4,300.0 K
NW-A	NORTHWEST BOUNDARY CONTAINMENT SYST	IRA	GROUND WATER TREATMENT	1993	\$1,500.0 K
SPSA-1E	LIME BASINS - M1 PITS	IRA	OTHER	1993	\$100.0 K
NCSA-1B	LIME BASINS-SETTLING BASINS	IRA	CAPPING	1994	TBD
OU-N	NORTHERN PATHWAY	IRA	GROUND WATER TREATMENT	1994	TBD
CSA-1C	DISPOSAL TRENCHES - COMPLEX TRENCHES	IRA	OTHER	1995	TBD
NCSA-3	SECONDARY BASINS - FORMER BASIN F	IRA	INCINERATION	1995	\$80,000.0 K
A-PE	AGENT PROCESS EQUIPT REMOVAL	IRA	OTHER	1996	\$70,000.0 K

Completed R Site ID	emedial Actions (Interim Reme Site Name	dial Action Action	s / Final Remedial Actions (IRA/FRA)) Remedy	FY	Cost
A-SPN	BASIN A/SOUTH PLANTS NO. PLUME	FRA	GROUND WATER TREATMENT	1996	\$1.0 K
AS	ASBESTOS REMOVAL	IRA	OTHER	1996	\$98,000.0 K
AT	ABOVE GROUND STORAGE TANKS IRA	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1996	\$3,000.0 K
AT	-	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1996	\$3,000.0 K
AW	ABANDONED WELLS CLOSURE IRA	FRA	OTHER	1996	\$300.0 K
B1727	B1727 SUMP IRA- WASTEWATER	FRA	OTHER	1996	\$1.0 K
CERCLA- LW	CERCLA LIQUID WWT PLANT	FRA	OTHER	1996	\$1.0 K
FD-DUST	FUGITIVE DUST IRA	IRA	OTHER	1996	\$740.0 K
FD-DUST	FUGITIVE DUST IRA	FRA	OTHER	1996	\$1.0 K
NA-PE	NON-AGENT PROCESS EQUIPT REMOVAL	IRA	OTHER	1996	\$11,600.0 K
NA-PE	NON-AGENT PROCESS EQUIPT REMOVAL	FRA	OTHER	1996	\$1.0 K
PCB- STRUC.	PCB REMOVAL	IRA	OTHER	1996	\$500.0 K
PCB- STRUC.	PCB REMOVAL	FRA	OTHER	1996	\$1.0 K
UT-TANKS	UNDERGROUND STORAGE TANKS	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1996	\$1,000.0 K
W-MP	WESTERN/MOTOR POOL PLUME	FRA	GROUND WATER TREATMENT	1996	\$500.0 K
W-R	WESTERN/RAILYARD PLUME	FRA	GROUND WATER TREATMENT	1996	\$1.0 K
A-A	BASIN A NECK SYSTEM	FRA	GROUND WATER TREATMENT	1997	TBD
N-CF	NORTH/BASINS C & F PLUME	FRA	GROUND WATER TREATMENT	1997	TBD
N-NP	NORTH BOUNDARY CONTAINMENT SYSTEM	FRA	GROUND WATER TREATMENT	1997	TBD
NW-A	NORTHWEST BOUNDARY CONTAINMENT SYST	FRA	GROUND WATER TREATMENT	1997	TBD
NW-SC	NORTHWEST/SAND CREEK LATERAL PLUMES	FRA	GROUND WATER TREATMENT	1997	TBD
OU-N	NORTHERN PATHWAY	FRA	GROUND WATER TREATMENT	1997	TBD
OU-NW	FIRST CREEK	FRA	GROUND WATER TREATMENT	1997	TBD
A-PE	AGENT PROCESS EQUIPT REMOVAL	FRA	OTHER	1998	TBD
AS	ASBESTOS REMOVAL	FRA	OTHER	1998	TBD
NCSA-8A	SEWER SYSTEMS-SAN. SEWER TO STP	FRA	SOLIDIFICATION/STABILIZATION	1998	\$81.0 K
SPSA-11	SEWER SYSTEMS- SANITARY	FRA	SOLIDIFICATION/STABILIZATION	1998	\$81.0 K
SPSA-12C	SEWER SYSTEMS-PROCESS WATER	FRA	SOLIDIFICATION/STABILIZATION	1998	\$81.0 K
UT-TANKS	UNDERGROUND STORAGE TANKS	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1998	TBD
ESA-3A	-	FRA	CAPPING	1999	\$485.0 K
ESA-3B	AGENT TESTING-OLD TSY	FRA	CAPPING	1999	\$485.0 K

Completed F Site ID	Remedial Actions (Interim Reme Site Name	dial Actior Action	ns / Final Remedial Actions (IRA/FRA)) Remedy	FY	Cost
ESA-3G	AGENT TESTING - DRUM STORAGE/SPILL SITE	FRA	CAPPING	1999	\$485.0 K
SSA-1B	LAKE SEDIMENTS - UPPER DERBY LAKE	FRA	CAPPING	1999	\$606.5 K
SSA-1C	LAKE SEDIMENTS - LOWER DERBY LAKE	FRA	CAPPING	1999	\$606.5 K
A-S36BR	BASIN A/SEC 36 BEDROCK RIDGE PLUMES	FRA	GROUND WATER TREATMENT	2000	\$885.0 K
CSA-1A	DISPOSAL TRENCHES- SHELL TRENCHES	FRA	SOLIDIFICATION/STABILIZATION	2000	\$2,938.0 K
CSA-1C	DISPOSAL TRENCHES - COMPLEX TRENCHES	FRA	OTHER	2000	\$2,939.0 K
CSA-2C	MUNITIONS TESTING- INCEND MUNITIONS TS	FRA	CAPPING	2000	\$264.0 K
ESA-1A	MUNITIONS TESTING- SURFACE BURN 1	FRA	CAPPING	2000	\$264.0 K
ESA-1B	MUNITIONS TESTING- SURFACE BURN 2	FRA	CAPPING	2000	\$264.0 K
ESA-1C	MUNITIONS TESTING- SURFACE BURN 3	FRA	CAPPING	2000	\$264.0 K
ESA-1D	MUNITIONS TESTING - SURFACE BURN 4	FRA	CAPPING	2000	\$264.0 K
ESA-2A	UNDIFFERENTIATED-BURIAL TRENCHES/BURN PT	. FRA	CAPPING	2000	\$2,422.0 K
ESA-2C	UNDIFFERETIATED-UXO OPEN TRENCHES	FRA	CAPPING	2000	\$2,422.0 K
ESA-4A	MUNITIONS TESTING - IMPACT/UXO	FRA	CAPPING	2000	\$264.0 K
ESA-4B	MUNITIONS TESTING - DRMO AREA	FRA	CAPPING	2000	\$264.0 K
SSA-4	SANITARY LANDFILLS- TRASH DUMP	FRA	CAPPING	2000	\$943.0 K
WSA-2	SANITARY LANDFILLS-WEST LANDFILL	FRA	CAPPING	2000	\$943.0 K
WSA-3C	SANITARY LANDFILLS-EAST LANDFILL/MAIN AR	FRA	CAPPING	2000	\$943.0 K
WSA-5A	SANITARY LANDFILLS-N. LANDFILL TRENCH	FRA	CAPPING	2000	\$943.0 K
WSA-5C	SANITARY LANDFILLS-N. LANDFILL TRENCH	FRA	CAPPING	2000	\$943.0 K
WSA-5D	SANITARY LANDFILLS-N. LANDFILL TRENCHES	FRA	CAPPING	2000	\$943.0 K
NCSA-6A	SEWER SYSTEMS-SO. PLTS/BASIN F (CHEM.)	FRA	WASTE REMOVAL - SOILS	2001	TBD
SPSA-10	SEWER SYSTEMS-CHEM. SEWER	FRA	CAPPING	2001	\$1,087.0 K
SPSA-1E	LIME BASINS - M1 PITS	FRA	OTHER	2001	\$3,600.0 K
SPSA-1G	SOUTH PLANTS BALANCE- MISCELLANEOUS	FRA	CAPPING	2001	\$1,087.0 K
SPSA-3A	SOUTH PLANTS-DRAINAGE DITCHES	FRA	CAPPING	2001	\$1,087.0 K
SPSA-3E	SOUTH PLANTS BALANCE- MISCELLANEOUS	FRA	CAPPING	2001	\$1,087.0 K

Completed F Site ID	Remedial Actions (Interim Reme Site Name	edial Action Action	ns / Final Remedial Actions (IRA/FRA)) Remedy	FY	Cost
SPSA-4B	SOUTH PLANTS BALANCE- MISCELLANEOUS	FRA	CAPPING	2001	\$1,087.0 K
SPSA-5B	SOUTH TANKS BALANCE- MISCELLANEOUS	FRA	CAPPING	2001	\$1,087.0 K
SPSA-8A	SOUTH PLANTS BALANCE- SANITARY LANDFILL	FRA	CAPPING	2001	\$1,087.0 K
SPSA-8B		FRA	CAPPING	2001	\$1,087.0 K
SPSA-9A	SOUTH PLANTS-DRAINAGE DITCHES	FRA	CAPPING	2001	\$1,087.0 K
SPSA-9B	SOUTH PLANTS BALANCE- MISCELL/SURF. CONTM	FRA	CAPPING	2001	\$1,087.0 K
CSA-1B	UNDIFFERENTIATED-SEC. 36 BALANCE	FRA	CAPPING	2002	TBD
CSA-2A	UNDIFFERENTIATED-SEC. 36 BALANCE	FRA	CAPPING	2002	TBD
CSA-2B	DITCHES/DRAINAGE-SEC 36 METAL DEBRIS	FRA	CAPPING	2002	TBD
CSA-3	SEWER SYSTEMS - CHEM/BASINS A TO F	FRA	CAPPING	2002	TBD
CSA-4	UNDIFFERENTIATED-SEC. 36 BALANCE	FRA	CAPPING	2002	TBD
NCSA-1C	BURIED SEDIMENTS/DITCHES- NO.PLANTS DITCH	FRA	CAPPING	2002	\$405.0 K
NCSA-1D	DITCHES/DRAINAGE - RUNOFF STORAGE	FRA	CAPPING	2002	TBD
NCSA-1E	BURN SITE-SO. PLTS. OPERATIONS	FRA	CAPPING	2002	TBD
NCSA-1F	BURIED SEDIMENT/DITCHES-SO. PLTS DITCHES	FRA	CAPPING	2002	TBD
NCSA-2B	SECONDARY BASINS-BASIN D	FRA	CAPPING	2002	\$1,165.0 K
NCSA-2D	DITCHES/DRAINAGE-B TO D/B TO C DITCHES	FRA	CAPPING	2002	\$1,165.0 K
NCSA-4A	SECONDARY BASINS-DEEP WELL	FRA	CAPPING	2002	\$1,165.0 K
NCSA-5B	BURIED SEDIMENTS/DITCHES- A,B,C,D DITCHES	FRA	CAPPING	2002	\$405.0 K
NCSA-5C	BURIED SEDIMENTS/DITCHES-SAND CK. LATERL	FRA	CAPPING	2002	\$405.0 K
NCSA-5D	DITCHES/DRAINAGE- SURFACE CANAL/BASIN A	FRA	CAPPING	2002	\$405.0 K
NCSA-6B	SEWER SYSTEMS-NO. PLTS/BASIN F(CHEM)	FRA	CAPPING	2002	TBD
NFU-A	STRUCTURES - NO FUTURE USE, AGENT	FRA	CAPPING	2002	\$11,206.0 K
NFU-MP	STRUCTURES - NO FUTURE USE,MFG,PROCESS	FRA	CAPPING	2002	\$11,206.0 K
NPSA-1	SEWER SYSTEMS - CHEMICAL SEWERS	FRA	CAPPING	2002	TBD

Completed F Site ID	Remedial Actions (Interim Reme Site Name	edial Action	ns / Final Remedial Actions (IRA/FRA)) Remedy	FY	Cost
NPSA-3	AGENT TESTING-GB MANUFACTURING AREA	FRA	CAPPING	2002	TBD
NPSA-5	AGENT TESTING-SPECIAL WEAPONS PLANT	FRA	CAPPING	2002	TBD
NPSA-8C	SURFACE DRAINAGE AREA	FRA	CAPPING	2002	TBD
NPSA-9F	INVESTIGATED AREA- ARSENIC DETECTION	FRA	CAPPING	2002	TBD
SPSA-12A	SOUTH TANKS BALANCE- AERATION BASIN	FRA	CAPPING	2002	TBD
SPSA-12B	SOUTH PLANTS BALANCE- SEDIMENT POND	FRA	CAPPING	2002	TBD
SPSA-1B	SOUTH PLANTS BALANCE UNKNOWN MOUNDS	FRA	CAPPING	2002	TBD
SPSA-1C	SOUTH PLANTS BALANCE- LIME PITS	FRA	CAPPING	2002	TBD
SPSA-1D	SOUTH PLANTS-DRAINAGE DITCHES	FRA	CAPPING	2002	TBD
SPSA-2A	SOUTH PLANTS-SO. TANK FARM	FRA	CAPPING	2002	TBD
SPSA-2B	SOUTH PLANTS-OPEN STORAGE AREA	FRA	CAPPING	2002	TBD
SPSA-2C	SOUTH PLANTS BALANCE- SALVAGE YARD	FRA	CAPPING	2002	TBD
SPSA-2D	SOUTH PLANTS-DRAINAGE DITCHES	FRA	CAPPING	2002	TBD
SPSA-2E	SOUTH PLANTS BALANCE- SURFACE DEPOSITION	FRA	CAPPING	2002	TBD
SPSA-3B	SOUTH PLANTS BALANCE- STORAGE PAD	FRA	CAPPING	2002	TBD
SPSA-3C	SOUTH PLANTS BALANCE- TANK STORAGE AREA	FRA	CAPPING	2002	TBD
SPSA-3D	SOUTH PLANTS BALANCE- TANK STORAGE AREA	FRA	CAPPING	2002	TBD
SPSA-4A	SOUTH PLANTS-DRAINAGE DITCHES	FRA	CAPPING	2002	TBD
SPSA-5A	SOUTH PLANTS-DRAINAGE DITCHES	FRA	CAPPING	2002	TBD
SPSA-6	HYDRAZINE FUEL BLENDING/STORAGE FACILITY	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	2002	TBD
SPSA-7A	BALANCE SPSA/SURFACE	FRA	CAPPING	2002	TBD
SPSA-7B	SOUTH PLANTS BALANCE- DEPRESSION	FRA	CAPPING	2002	TBD
SPSA-7C	SOUTH PLANTS BALANCE- MISCELL/SURF. CONTM	FRA	CAPPING	2002	TBD
SPSA-8C	SPSA8 BALANCE/SURFACE CONTAMINATION	FRA	CAPPING	2002	TBD
CSA-1D	SANITARY LANDFILLS-SAN LANDFILL/INCIN834	FRA	CAPPING	2003	\$3,922.0 K
CSA-2D	MUNITIONS TESTING- NN3601 INCINERATOR CON	FRA	CAPPING	2003	\$3,922.0 K
NCSA-2A	SECONDARY BASINS-BASIN C	FRA	CAPPING	2003	\$1,165.0 K

Completed R Site ID	emedial Actions (Interim Reme Site Name	dial Action Action	s / Final Remedial Actions (IRA/FRA)) Remedy	FY	Cost
NCSA-5A	SECONDARY BASINS-BASIN B	FRA	CAPPING	2003	\$405.0 K
ESA-2B	SANITARY LANDFILLS-	FRA	CAPPING	2004	\$3,922.0 K
SPSA-1F	DISPOSAL TRENCHES-HEXA BARRELS	FRA	REMOVAL	2004	\$6,150.0 K
NCSA-1G	SECTION 36 BAL. OF AREAS SOIL REMED	FRA	CAPPING	2006	\$18,250.0 K
NPSA-6	NORTH PLANT SOIL REMEDIATION	FRA	CAPPING	2008	\$564.0 K
NCSA-8A	SEWER SYSTEMS-SAN. SEWER TO STP	FRA	CAPPING	2009	\$88.5 K
WSA-7A	SEWER SYSTEM-SANITARY SEWER SEDIMENTS	FRA	CAPPING	2009	\$88.5 K
CSA-1A	DISPOSAL TRENCHES- SHELL TRENCHES	FRA	CAPPING	2010	TBD
CSA-1C	DISPOSAL TRENCHES - COMPLEX TRENCHES	FRA	CAPPING	2010	TBD
NCSA-1A	BASIN A	FRA	CAPPING	2010	TBD
NCSA-1B	LIME BASINS-SETTLING BASINS	FRA	CAPPING	2010	TBD
NCSA-4B	SECONDARY BASINS-BASIN F EXTERIOR	FRA	CAPPING	2010	TBD
SPSA-1A	SOUTH PLANTS BALANCE CENTRAL PROCESSING	FRA	CAPPING	2010	TBD
NFU-MNP	STRUCTURES-NO FUTURE USE,MFG,NON-PROCESS	FRA	CAPPING	2011	TBD

#### **Duration of IRP**

Year of IRP Inception:197601Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC):201107/204309Date of IRP completion including Long Term Management (LTM):204309

### **IRP** Contamination Assessment

#### **Contamination Assessment Overview**

In 1975 the Army began an intensive investigation of the sources of contamination at the RMA. By 1983 the Army formally initiated a preliminary assessment/site inspection (PA/SI) for the arsenal under CERCLA. Results of the PA/SI, completed in 1984, indicated there were at least 178 sites on RMA with contamination above natural background levels, not including 15 individual contaminated groundwater plumes and hundreds of contaminated structures.

The RI results are summarized below by media:

Air: No ambient air problems were detected.

Biota: Some of the biota contain contaminants above biota "no effects" levels.

Structures: Approximately one-half of RMA structures were identified as potentially contaminated based on previous use. Water: Contaminated groundwater plumes were detected primarily in the vicinity of the disposal basins and North and South Plants. Plumes are primarily moving to the north and northwest. Surface waters did not show repeated detections, but were sporadically impacted by contaminated soils/sediment or by upgradient off-post sources.

Soils/Sediment: The heaviest contamination was detected in the disposal basins and the South Plants manufacturing area, covering approximately half of the central six sections of RMA. Contamination tended to decrease with depth.

The contaminants of greatest concern for RMA include organochlorine pesticides, arsenic, mercury, volatile halogenated organics, volatile aromatic organics, volatile hydrocarbons, semi-volatile halogenated organics, di-isopropylmethyl phosphonate (DIMP), organosulfur compounds, and organophosphorus compounds. The bulk of the contamination is contained in the central sections of RMA, in and around the manufacturing complexes, solid waste disposal areas, and liquid waste basins. Data from the RI regarding the levels and extent of contamination were used as the basis for the endangerment assessment (EA) to assess risks and develop preliminary health-based cleanup criteria and in the FS to determine sites requiring remediation as well as to develop, evaluate and select remedial alternatives for the cleanup.

In 1989 the Army initiated the FS for the on-post OU at RMA, developing a methodology that addressed the numerous soil sites, groundwater plumes, and structures using chemical data and historical information provided in the RI reports combined with human health and biota risk criteria developed in the EA to identify areas requiring evaluation. A range of alternatives, and the results of screening these alternatives based on effectiveness, ability to implement, and cost was presented in the development and screening of alternatives (DSA) report (Phase I of the FS), which was issued in final form on Dec. 21, 1992. A consensus was reached among the organizations and state (OAS) and was documented in the agreement for a conceptual remedy in June 1995. Phase II of the FS, the detailed analysis of alternatives (DAA), was completed and issued on Oct. 16, 1995 and in June 1996 the final on-post ROD was signed.

The major components of the selected remedy consist of implementing groundwater, structures, and soil alternatives. The groundwater alternative includes operation of all existing boundary systems and on-post groundwater IRA systems, installation of a new extraction and piping system, and development of an extended monitoring program. The structures alternative includes demolition of all NFU structures. These structures are defined as the agent history group, the significant contamination history group and the other contamination history group. The soil alternative includes the following:

- construction of a RCRA and Toxic Substances Control Act (TSCA) compliant HWL on post;
- consolidation of soil with low levels of contamination into Basins A and F and the South Plants central processing area;
- RCRA-equivalent covers for contaminated soil in Basins A and F, South Plants, and the Section 36 trenches sites;
- treatment of most principal threat (greater than or equal to 10 times the human health criteria) soil; and
- on-post landfilling of soil and debris, including the Basin F wastepile.

For the off-post OU, the RI, EA, and FS have been completed and a ROD has been signed. The only media (air, soil, surface water, groundwater, biota) determined to require treatment was groundwater in limited areas. The groundwater intercept and treatment systems were put in place through the IRA program and the off-post ROD was signed in December 1995.

#### **Cleanup Exit Strategy**

Five groundwater treatment systems will continue to operate at the boundaries, off-post and in the center of the installation (source area) until ROD remedial objectives are met. The RA objectives in the ROD are based on containment system remediation goals (CSRGs) and applicable or relevant and appropriate requirements. Between FY06 and FY11 RCRA or RCRA equivalent covers were placed on landfills and waste left in place. Army maintained areas will be implemented as outlined in the Long-Term Environmental Management System. LTM will occur at all sites where waste is left in place.

Site-specific exit strategies are included in cleanup strategies for each site.

	Title	Author	Date
1984			
	Number Two (2) (South Plants) Contract Number DAAK11-84-D-0017	RMA	MAR-1984
	RMA Offpost Contamination Assessment Technical Plan A003 Contract Number DAAK11-83-D-0007	Environmental Science & Engineering Inc. (ES&E)	NOV-1984
1985			
	South Plants Contamination Survey and Remedial Action (RA) Assessment Final Technical Plan Task	USATHAMA & EBASCO	JAN-1985
	South Plants Contamination Survey and Remedial Action (RA) Assessment Final Technical Plan Appendices Task Number 2 (South Plants) Contract Number DAAK11-84- D-0017	USATHAMA & EBASCO	MAR-1985
	RMA Section 36 Contamination Survey Technical Plan Volume I Task Number One (1) (Section 36) Contract Number DAAK11-84-0016	ES&E, RMA	MAR-1985
	RMA Section 36 Contamination Survey Technical Plan Volume II Task Number 1 (Section 36) DAAK11-84- 0016	ES&E, RMA	MAR-1985
	Technical Plan Supplement for Basin A and South Plants Area Contamination Surveys, RMA Environmental Division Response to Suspected Agent Presence During Contamination Surveys	RMA	APR-1985
	RMA Section 36 Contamination Survey Technical Plan Volume I Revision A Task Number 1 (Section 36) Contract Number DAAK11-84-0016	ES&E, USATHAMA	JUN-1985
	Final Technical Plan Revision I Task Number 2 (South Plants) Contract Number DAAK11-84-D-0017	USATHAMA & EBASCO	AUG-1985
	Appendix B to the Task 2 Technical Plan, Revision 1, Preliminary Building Profiles. Contract Number DAAK11- 84-D-0017	EBASCO	AUG-1985
	RMA Offpost Contamination Assessment Technical Plan A003 Revision A Contract Number DAAK11-83-D-0007	ES&E, RMA	AUG-1985
1986			
	Final Technical Plan Task Number 12 Phase I Survey of the Derby Lakes Area Contract Number DAAK11-84-D- 0017	RMA & EBASCO	FEB-1986
	Final Technical Plan Task Number 11 Hydrazine Blending and Storage Facility (HBSF) Contract Number DAAK11-84-D-0017	RMA & EBASCO	MAR-1986
	Final Technical Plan Task Number 17 Incineration/Fixation and Building 1611 Pilot Study for Basin F Wastes Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUN-1986
	Final Laboratory Test Plan for Incineration of Basin F Wastes at RMA Task Number 17 Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUN-1986
	Letter Technical Plan Combined Offpost Borehole and Monitor Well Drilling Program Tasks 25, 36 and 39 - Project Number 86942, 86946	ES&E	AUG-1986
	RMA Water Quantity/Quality Survey Final Technical Plan Task Number Four (4) Contract Number DAAK11-84- D-0016	ES&E, RMA	SEP-1986
	Report on an Accelerated Cleanup Plan for the Contamination at RMA Final Report Volume II Appendices Contract Number DAAK-11-84-D-0016	ES&E, RMA	SEP-1986
		1	1

	Title	Author	Date
1986			
	Report on an Accelerated Cleanup Plan for the Contamination at RMA Final Report Volume I Contract Number DAAK-11-84-D-0016	ES&E, RMA	SEP-1986
	Letter Technical Plan for Sediment Sampling in North Bog, Task 7	EBASCO	OCT-1986
	Technical Plan Determination of Partition Coefficients for the Primary Contaminant Sources of Section 36 Task Number 23	ES&E, RMA	OCT-1986
	Letter Technical Plan Task 25, 36 and 39 Offpost Monitoring Well Installation Program - Project Number 86946	ES&E, RMA	NOV-1986
	Technical Plan for Well Installation Task Number One (1)	ES&E, RMA	NOV-1986
	Letter Technical Plan, Follow-On Phase I Work, Site 2- 1, Drainage Ditch Task Number 7	EBASCO	DEC-1986
	Letter Technical Plan for the South Plants Regional Study Task Number Two (2)	RMA & EBASCO	DEC-1986
	Revised Letter Technical Plan for the South Plants Regional Study Task Number Two (2	RMA & EBASCO	DEC-1986
	Potential for UXOs in Site 30-4 at Proposed Phase I Follow-On Boring Locations	RMA & EBASCO	DEC-1986
1987			
	Final Phase I Contamination Assessment Report (CAR) Site 1-10 South Tank Farm Version 3.2 Task Number Two (2) - South Plants Contract	RMA & EBASCO	JAN-1987
	Evaluation/Selection of Innovative Technologies for Testing with Basin F Materials (Task Order Number Eight (8)) Final Report Contract Number DAAK11-85-D-0008	USATHAMA, Arthur D. Little Inc.	FEB-1987
	Final Technical Plan Task Number 7 Phase I Survey of Lower Lakes Area Contract Number DAAK11-84-D- 0017	RMA & EBASCO	FEB-1987
	Final Phase I Contamination Assessment Report (CAR) Site 1-5 Lime Pits Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	FEB-1987
	Final Phase I Contamination Assessment Report (CAR) Site 2-3 Lagoon Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	FEB-1987
	Final Phase I Contamination Assessment Report (CAR) Site 2-4 Excavation Pit Task Number 2 - South Plants	RMA & EBASCO	FEB-1987
	Final Phase I Contamination Assessment Report (CAR) Site 2-7 Aeration Basin Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	FEB-1987
	Final Phase I Contamination Assessment Report (CAR) Site 2-9 Open Storage Area Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	FEB-1987
	Final Phase I Contamination Assessment Report (CAR) Site 2-12 Revetted Tank Storage Area Task Number Two (2) - South Plants Contract Number DAAK11-84- D-0017	RMA & EBASCO	FEB-1987
	Final Technical Plan Volume II Task Number 18 (Air Monitoring) Contract Number DAAK11-84-D-0016	ES&E, RMA	FEB-1987
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Technical Plan for RMA Innovative Technology Development	Dept of the Army	MAR-1987
Wet Air Oxidation of Basin F Liquid (Liquid) Pilot Plant Study Final Report	Zimpro Inc	MAR-1987
Technical Plan for Task 7, Proposing to Include Site 1-6 in Unc-1 for Follow-On Phase I Drilling	EBASCO	MAR-1987
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Final Phase I Contamination Assessment Report (CAR) Site 36-20: Chemical Sewer (Version 3.2) Task Number One (1) (Section 36) Contract Number DAAK11-84- D0016	ES&E, RMA	APR-1987
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Final Phase I Contamination Assessment Report (CAR) Site 1-4 Borrow Pit Version 3.2 Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	APR-1987
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Final Phase I Contamination Assessment Report (CAR) Site 1-9 Open Storage Area Version 3.4 Task Number 7 - Lower Lakes Contract Number DAAK11-84-D-0017	RMA & EBASCO	MAY-198
Final Phase I Contamination Assessment Report (CAR) Site 36-1: Basin A (Version 3.1) Task Number One (1) (Section 36) Contract Number DAAK11-84-D0016	ES&E, RMA	MAY-1987
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Final Phase I Contamination Assessment Report (CAR) Site 6-2 Eastern Upper Derby Lake (Upper Derby Lake Overflow) Version 3.2 Task Number 12 Contract Number DAAK11-84-D-0017	RMA & EBASCO	MAY-1987
Final Phase I Contamination Assessment Report (CAR) Site 1-8 Salvage Yard Version 3.3 Task Number Two (2) - Army Sites South Contract Number DAAK11-84-D- 0017	RMA & EBASCO	MAY-1987
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Final Phase I Contamination Assessment Report (CAR) Site 1-1 Drainage Ditches (Version 3.4) Task Number 7 - Lower Lakes Contract Number DAAK11-84-D-0017	RMA & EBASCO	MAY-1987
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Site 36-15: Burning Site (Version 3.1) Task Number One (1) (Section 36) Contract Number DAAK11-84-D0016		
Final Phase I Contamination Assessment Report (CAR) Site 1-2 Upper and Lower Derby Lakes Version 3.2 Task Number 12 - Derby Lakes Area Contract Number	RMA & EBASCO	JUN-1987
DAAK11-84-D-0017		
Final Phase I Contamination Assessment Report (CAR) Site 11-1 Buried Lake Sludge Version 3.3 Task Number 12-Derby Lakes Area Contract Number DAAK11-84-D- 0017	RMA & EBASCO	JUN-1987
Final Phase I Contamination Assessment Report (CAR) Site 36-3: Insecticide Pit (Version 3.3) Task Number One (1) (Section 36) Contract Number DAAK11-84- D0016	ES&E, RMA	JUN-1987
Letter Technical Plan Project Number 86958 - Evaluation of North Boundary Water Treatment Effectiveness and Clogging of Recharge Wells	USAEHA, ES&E, RMA	JUN-1987
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Final Phase I Contamination Assessment Report Site 35-4: Basin A Drainage Ditches (Includes Site 26-7: Basins B and C, Drainage Ditch) (Version 3.2) Task Number 6/19 (Sections 26 and 35) Contract Number DAAK11-84-D0016	ES&E, RMA	JUL-1987
Final Phase I Contamination Assessment Report (CAR) Site 35-3: Basin B (Version 3.3) Task Number 6/19 (Sections 26 And 35) Contract Number DAAK11-84-D- 0016	ES&E, RMA	JUL-1987
Final Phase I Contamination Assessment Report (CAR) Site 26-5: Basin E (Version 3.2) Task Number 6/19 (Sections 26 And 35) Contract Number DAAK11-84- 0016	ES&E, RMA	JUL-1987
Final Phase I Contamination Assessment Report (CAR) Section 11 Uncontaminated Area Version 3.1 Task Number 15 - Army Sites-South Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUL-1987
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Final Phase I Contamination Assessment Report (CAR) Site 2-1 Drainage Ditches (Version 3.3) Task Number 7 • Lower Lakes Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUL-1987
Final Phase I Contamination Assessment Report (CAR) Site 2-17 Lake Ladora and Lake Mary (Version 3.2) Task Number 7 - Lower Lakes Area Contract Number DAAK11-84-D-001	RMA & EBASCO	JUL-1987
Final Phase I Contamination Assessment Report (CAR) Site 24-6 Sewage Treatment Plant (Version 3.2) Task	RMA & EBASCO	JUL-1987

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Number 7 - Lower Lakes Contract Number DAAK11-D- 0017		
Final Phase I Contamination Assessment Report (CAR) Site 30-4 Sanitary Landfill (Version 3.2) Task Number 7 Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUL-1987
Final Phase I Contamination Assessment Report (CAR) Site 1-11 Sanitary Landfill Version 3.3 Task Number Two (2) - South Plants Contract Number DAAK11-84- D-0017	RMA & EBASCO	JUL-1987
Final Phase I Contamination Assessment Report (CAR) Site 2-2 Test Site Version 3.2 Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUL-1987
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Ancillary Parameters for Lakes Region Sediment Samples (This document can be found in a packet under RMA Information Center (RIC) Number 88012R13	RMA & EBASCO	JUL-1987
Letter Technical Plan for Task Number 20 - Soil Gas Study at Site 3-4	RMA & EBASCO	JUL-1987
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Final Technical Plan Task Number 27 Hazardous Waste Land Disposal Facility Assessment Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUL-1987
RMA Water Quantity/Quality Survey Final Initial Screening Program Report Volume I Task Number Four (4) Contract Number DAAK11-84-ED-0016	ES&E, RMA	AUG-1987
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Revision to Letter Technical Plan for Task Number 20 Proposal to Drill Additional Borings for Follow-On Phase II Field Program at Site 1-1	RMA & EBASCO	SEP-1987
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Final Phase I Contamination Assessment Report (CAR)	ES&E, RMA	OCT-1987
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Final Western Tier Trichloroethylene (TCE) Investigation	RMA & EBASCO	OCT-1987
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Final Phase I Contamination Assessment Report (CAR)	ES&E, RMA	NOV-1987
Section 35 - Uncontaminated (35-Unc) (Version 3.3)		
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Final Phase I Contamination Assessment Report (CAR)	ES&E, RMA, Midwest	DEC-1987
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RMA Sections 26 and 35 Phase I Contamination Survey Final Technical Plan Task Number Six (6) (Sections 26 and 35) (Prepared under Task Number 19) Contract Number DAAK11-84-D-0016	ES&E, RMA	DEC-1987
Final Phase I Contamination Assessment Report (CAR) Section Number 27: Nonsource Area (Version 3.1) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D0016	ES&E, RMA	DEC-1987
RMA Northwest Boundary Containment / Treatment System Baseline Conditions, System Startup, and Operational Assessment Report for FY 00/00/85 - 00/00/86 (FY85 - FY86) Volume I Report	RMA	DEC-1987
RMA Northwest Boundary Containment / Treatment System (NWBCS) Baseline Conditions, System Startup, and Operational Assessment Report for FY 00/00/85 - 00/00/86 (FY85 - FY86) Volume II Plates	RMA	DEC-1987
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Phase I Survey of Army Sites - North Final Technical Plan Task Number 14 (Prepared under Task Number 21) Contract Number DAAK11-84-D-0016	ES&E, RMA	DEC-1987
Final Phase I Contamination Assessment Report (CAR) Section Number 28 - Nonsource Area (Version 3.1) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D0016	ES&E, RMA	DEC-1987
Final Phase I Contamination Assessment Report (CAR) Site 29-1: Burn Site, Incendiaries (Version 3.1) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D0016	ES&E, RMA	DEC-1987
Final Phase I Contamination Assessment Report (CAR) Section Number 31 Nonsource Area Version 3.2 Task Number 15 - Army Sites-South Contract Number DAAK11-84-D-0017	RMA & EBASCO	DEC-1987
Final Phase I Contamination Assessment Report (CAR) Section Number Nine (9) Nonsource Area Version 3.2 Task Number 15 - Army Sites-South Contract Number DAAK11-84-D-0017	RMA & EBASCO	DEC-1987
Final Phase I Contamination Assessment Report (CAR) Site 3-2/3-3 Drainage Ditch and Overflow Basin (Version 3.2) Task Number 7 - Lower Lakes Contract Number DAAK11-84-D-0017	RMA & EBASCO	DEC-1987
Final Phase I Contamination Assessment Report (CAR) Site 12-1 Buried Lake Sludge Version 3.2 Task Number 12 Derby Lakes Area Contract Number DAAK11-84-D- 0017	RMA & EBASCO	DEC-1987
Final Phase I Contamination Assessment Report (CAR) Section Number 22: Nonsource Area (Version 3.1) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D0016	ES&E, RMA	DEC-1987
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	Final Phase I Contamination Assessment Report (CAR) Section Number 27: Nonsource Area (Version 3.1) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D0016	ES&E, RMA	DEC-1987
	Final Phase I Contamination Assessment Report (CAR) Section Number 22: Nonsource Area (Version 3.1) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D0016	ES&E, RMA	DEC-1987
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	Technical Plan Version 3.1 Task Number 34 Hydrazine Blending and Storage Facility (HBSF) Wastewater Treatment and Decommissioning Assessment Contract Number DAAK11-84-D-0017	RMA, EBASCO, Robert L Stollar & Associates (Stollar)	JAN-1988
	Final Phase I Contamination Assessment Report (CAR) Site 30-1: Impact Area (Includes 30-7: Ground Disturbance) (Version 3.3) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D0016	ES&E, RMA	JAN-1988
	Final Baseline Contamination Assessment Basin F Tank Site Task Number 21 (Army Sites North) Contract Number DAAK11-84-D0016	ES&E, RMA	JAN-1988
	Final Phase I Contamination Assessment Report (CAR) Site 36-17: Complex Disposal Activity (Version 3.2) Task Number One (1) (Section 36) Contract Number DAAK11-84-D0016	ES&E, RMA	JAN-1988
	Final Phase I Contamination Assessment Report (CAR) Site 19-1: Burn Site, Incendiaries (Version 3.2) Task Number 14 (Army Sites North) (Prepared under Task Number 21) Contract Number DAAK11-84-D0016	ES&E, RMA	JAN-1988
	Final Phase I Contamination Assessment Report (CAR) Site 30-5 M34 Demilitarization Operation Area (Version 3.3) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D0016	ES&E, RMA	JAN-1988
	Final Phase I Contamination Assessment Report (CAR) Site 4-2 Burning Pit Version 3.2 Task Number 15 - Army Sites - South Contract Number DAAK11-84-D-0017	ES&E, RMA	JAN-1988
	Final Phase I Contamination Assessment Report (CAR) Section Number Five (5) Nonsource Area Version 3.1 Task Number 15 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	JAN-1988
	Contamination Assessment Report (CAR) Site 36-5: Mercury Spill (Version 3.2) Task Number One (1) (Section 36) Contract Number DAAK11-84-D0016	ES&E, RMA, Midwest	JAN-1988
	Final Phase I Contamination Assessment Report (CAR) 36-5: Mercury Spill (Version 3.3) Task Number One (1) (Section 36) Contract Number DAAK11-84-D0016	ES&E, RMA	JAN-1988
	Final Phase I Contamination Assessment Report (CAR) Section Number 30 - Nonsource Area (Version 3.1)	ES&E, RMA	JAN-1988
	Final Phase I Contamination Assessment Report (CAR) Site 36-10: Pit (Version 3.2) Task Number One (1) (Section 36) Contract Number DAAK11-84-D0016	ES&E, RMA	JAN-1988
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Final Summary Report Western Tier Trichloroethylene (TCE) Soil Gas Investigation RMA Version 3.2 Task Number 38 Contract Number DAAK11-84-D-017	RMA & EBASCO	JAN-1988
Letter Technical Plan Task Number 22 - RMA Section 32-Unc (Nonsource Areas) and Sites 32-5 and 32-6 (Burning Pits) Extended Phase I Unexploded Ordnance and Contaminant Investigation Aerial Geophysical Survey	RMA & EBASCO	FEB-1988
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Final Phase I Contamination Assessment Report (CAR) Site 36-2: Munitions Test Area and Incendiary Drop Site (Version 3.2) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D0016	ES&E, RMA	FEB-1988
Final Phase I Contamination Assessment Report (CAR) Site 36-18 Possible Trench Disposal Site (Version 3.2) Fask Number 14 (Army Sites North) Contract Number DAAK11-84-D0016	ES&E, RMA	FEB-1988
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Final Phase I Contamination Assessment Report (CAR) Site 30-6 Liquid Disposal Trenches (Version 3.2) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D0016	ES&E, RMA	FEB-1988
RMA North Boundary System (NBS) Component Response Action Assessment Final Technical Plan (Version 3.1) Task Number 36 Contract Number DAAK11-84-D-0016	ES&E, RMA	FEB-1988
Final Phase I Contamination Assessment Report (CAR) Site 4-5 Burning Pits Version 3.2 Task Number 15 - Army Sites - South Contract Number DAAK11-84-D- 0017	RMA & EBASCO	FEB-1988
Final Phase I Contamination Assessment Report (CAR) Site 36-7: Solid Waste Burial / Sanitary Pits (Version 3.1) Task Number One (1) (Section 36) Contract Number DAAK11-84-D0016	ES&E, RMA	FEB-1988
Final Technical Plan Abandoned Well Program Version 3.3 Task Number 37 Contract Number DAAK11-84-D- 0017	RMA & EBASCO	FEB-1988
Final Phase I Contamination Assessment Report (CAR) Section Number Three (3) Nonsource Area Version 3.2 Task Number 15 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	FEB-1988
Final Phase I Contamination Assessment Report (CAR) Site 1-3 Mounded Material Version 3.2 Task Number Two (2) - South Plants Contract Number DAAK11-84- D-0017	RMA & EBASCO	FEB-1988
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Groundwater Monitoring Well Network Task Number 44 Contract Number DAAK11-84-D-0016		
Letter Technical Plan Outlining Additional Stream and Lake Sediment Sampling and Analysis to be Performed in the Off-post Study Area for the Off-post Remedial Investigation (RI), Task 39	ES&E, RMA	MAR-1988
On-post / Off-post Ground / Surface Water (Groundwater) Monitoring Program Final Technical Plan Task Number 44 Contract Number DAAK11-84-D-0016	ES&E, RMA	MAR-1988
Final Phase I Contamination Assessment Report Site 26-1: Deep Disposal Well and Chemical Sewers (Version 3.2) Task Number Six (Sections 26 and 35) (Prepared under Task Number 19) Contract Number DAAK11-84-D-0016	ES&E, RMA	MAR-1988
Final Contamination Assessment Report (CAR) Site 3-4 Nemagon Spill Area Version 3.2 Task Number 7 - Lower Lakes Contract Number DAAK11-84-D-0017	RMA & EBASCO	MAR-1988
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Task 44 Technical Plan Addendum	RMA	MAR-1988
An Evaluation of Three Leading Innovative Technologies for Potential Application to Basin F Materials at RMA Contract Number DAAK11-85-D-0008	USATHAMA, Arthur D. Little Inc.	APR-1988
Final Contamination Assessment Report Site 29-4: Disposal Site, Explosives, and Incendiaries (Version 3.2) Task Number 14 (Army Sites North) (Prepared under Task Number 21) Contract Number DAAK11-84-D0016	ES&E, RMA	APR-1988
Number 14 (Army Sites North) Contract Number DAAK11-84-D0016	RMA	APR-1988
Final Contamination Assessment Report (CAR) Sanitary Sewer - North Plants Version 3.2 Task Number 10 Contract Number DAAK11-84-D-0017	RMA & EBASCO	APR-1988
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Sewer Interceptor Line Version 3.2 Task Number 10 Contract Number DAAK11-84-D-0017		
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Site 4-3 Burning Pit Version 3.2 Task Number 15 - Army		
Sites - South Contract Number DAAK11-84-D-0017		
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Site 4-4 Open Storage and Salvage Yard Support Areas		
Version 3.2 Task Number 15 - Army Sites - South		
Contract Number DAAK11-84-D-0017		
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RMA Chemical Index Volume III Chemical Specific	RMA & EBASCO	MAY-1988
Applicable or Relevant and Appropriate Requirements		
(ARAR) for On-post Operable Unit (OU), RMA		
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2 Potential Mustard (H) and Distilled Mustard (HD)		
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Final Contamination Assessment Report (CAR) Site 2-8 Former Tank Storage Area Version 3.2 Task Number Two (2) - South Plants Contract Number DAAK11-84- D-0017	RMA & EBASCO	MAY-1988
RMA Chemical Index Volume I-II	RMA & EBASCO	MAY-1988
Final Phase I Contamination Assessment Report (CAR) Site 26-6: Basin F (Version 3.3) Task Number Six (6) (Sections 26 and 35) (Prepared under Task Number 19) Contract Number DAAK11-84-D0016	ES&E, RMA	MAY-1988
Final Phase I Contamination Assessment Report (CAR) Site 36-23: Scrap Metal Storage / Parking Lot (Version 3.1) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D0016	ES&E, RMA	MAY-1988
Final Decision Document for the Interim Response Action (IRA) for the Closure of Abandoned Wells at RMA	RMA	JUN-1988
Final Phase I Contamination Assessment Report (CAR) Section Number 24-Nonsource Area (Version 3.2) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D0016	ES&E, RMA	JUN-1988
Final Report Hydrazine Blending and Storage Facility (HBSF) Wastewater Treatment and Decommissioning Assessment - Version 3.1 Contract Number DAAK11- 84-D-0017	RMA & EBASCO	JUN-1988
Final Contamination Assessment Report (CAR) Sanitary Sewer - South Plants Version 3.2 Task Number 10 Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUN-1988
Final Phase I Contamination Assessment Report (CAR) Site 32-5 Burning Pits Version 3.1 Task Number 15 - Army Sites-South Contract Number DAAK11-84-D- 0017	RMA & EBASCO	JUN-1988
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Final Phase I Contamination Assessment Report (CAR) Section Number Six (6) Nonsource Area Version 3.1 Task 15 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUN-1988
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Overall Soil Assessment and Groundwater Integration Final Technical Plan (Version 3.1) Volume I Task Number 23 Contract Number DAAK11-84-D-0016	ES&E, RMA	JUN-1988
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Off-post Remedial Investigation / Feasibility Study RI/FS) Final Technical Plan Task Number 39 Contract Number DAAK11-84-D-0016	ES&E, RMA	JUL-1988
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Final Phase I Contamination Assessment Report (CAR) Sites 1-13 and 2-18 South Plants Manufacturing Complex Shell Chemical Company (SCC) Spill Sites Version 3.1 Task Number Two (2) - South Plants Contr	RMA & EBASCO	JUL-1988
Final Decision Document for the Interim Response Action (IRA) for the Improvement of the North Boundary System (NBS) at RMA Via Construction of Groundwater Recharge Trenches	RMA	JUL-1988
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Final Contamination Assessment Report (CAR) Site 4-6 Motor Pool Area Version 3.1 Task Number 38 Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUL-1988
Biota Assessment Letter Technical Plan Task Number Nine (9) Contract Number DAAK11-84-D-0016	ES&E, RMA	JUL-1988
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Final Phase II Data Addendum Site 19-1: Burn Site (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	AUG-1988
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Final Phase II Data Addendum Site 29-4: Disposal Site, Explosives, and Incendiaries (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	AUG-1988
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Final Phase II Data Addendum Site 35-7: Firing Range (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	AUG-1988
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Final Phase I Contamination Assessment Report (CAR) Site 32-6 Burning Pits Version 3.2 Task Number 15 - Army Sites - South Contract Number DAAK11-84-D- 0017	RMA & EBASCO	AUG-1988
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Final Phase II Data Addendum Site 36-8: Chemical Drainage Ditches (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	AUG-1988
Final Phase II Data Addendum Site 36-11: Liquid Storage Pool (Version 3.1) Contract Number DAAK11- 84-D-0016	ES&E, RMA	AUG-1988
Final Phase II Data Addendum Site 36-15: Burning Site (Version 3.1) Contract Number DAAK11-84-D-D0016	ES&E, RMA	AUG-1988

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	Final Phase II Data Addendum Site 36-20: Chemical Sewer (Version 3.1) Contract Number DAAK11-84-D- 0016	ES&E, RMA	AUG-1988
	Final Phase II Data Addendum Site 36-21: Drainage Ditch (Version 3.1) Contract Number DAAK11-84-D- 0016	ES&E, RMA	AUG-1988
	RMA Air Remedial Investigation (RI) Final Report Volume I (Version 3.1) Task Number 18 (Air Monitoring) Contract Number DAAK11-84-D-0016	ES&E, RMA	AUG-1988
	RMA Air Remedial Investigation (RI) Final Report Volume II (Version 3.1) Task Number 18 (Air Monitoring) Contract Number DAAK11-84-D-0016	ES&E, RMA	AUG-1988
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	Final Phase II Data Addendum Site 36-8: Chemical Drainage Ditches (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	AUG-1988
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	Final Phase I Contamination Assessment Report (CAR) Site 1-7 Hydrazine Blending and Storage Facility (HBSF) Version 3.2 Task Number 11 Contract Number DAAK11- 84-D-0017	RMA & EBASCO	SEP-1988
	Final Basin A Neck Groundwater Intercept and Treatment System Interim Response Action (IRA) Alternatives Assessment Version 3.2	RMA & EBASCO	SEP-1988
	Final Phase II Data Addendum Site 26-6: Basin F (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	SEP-1988
	Final Sanitary Sewer Remediation Interim Response Action (IRA) Alternatives Assessment Version 3.2 Contract Number DAAK11-84-D-0017	RMA & EBASCO	SEP-1988
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	Final Phase II Data Addendum Site 36-4: Lime Settling Basins (Version 3.1) Contract Number DAAK11-84-D- 0016	ES&E, RMA	SEP-1988
	Final Phase II Data Addendum Site 36-17: Complex Disposal Activity (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	SEP-1988
	Final Phase I Data Presentation Report Army Spill Sites South Plants Manufacturing Complex Version 3.2 Task Number 24 Contract Number DAAK11-84-D-0017	RMA & EBASCO	SEP-1988
	Final Phase II Data Addendum Site 36-7: Solid Waste Burial / Sanitary Pit (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	SEP-1988
	Final Phase II Data Addendum Site 36-3: Insecticide Pit (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	SEP-1988
	Final Phase I Contamination Assessment Report (CAR) Site 36-9 Incendiary or Munitions Test Area (Version 3.3) Task Number 14 (Army Sites North) Contract	ES&E, RMA	SEP-1988

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Final Volume Number Two (2) Selection of Incineration Technology for Basin F Wastes at RMA Task Number 17 Contract Number DAAK11-84-D-0017	RMA & EBASCO	SEP-1988
Final Volume Number Three (3) Analysis of Pilot Plant Alternatives for the Incineration of Basin F Wastes at RMA Task Number 17 Contract Number DAAK11-84- D-0017	RMA & EBASCO	SEP-1988
Final Volume Number Four (4) Bench-Scale Laboratory Incineration of Basin F Wastes RMA Task Number 17 Contract Number DAAK11-84-D-0017	RMA & EBASCO	SEP-1988
Final Volume Five (5) Bench-Scale Laboratory Incineration of Section Number 36 Wastes (Expansion Program) RMA Task Number 17 Contract Number DAAK11-84-D-0017	RMA & EBASCO	SEP-1988
Final Volume Six (6) Full-Scale Incineration System Conceptual Design for Basin F Wastes RMA Task Number 17 Contract Number DAAK11-84-D-0017	RMA & EBASCO	SEP-1988
Final Phase II Data Addendum Site 26-3: Basin C (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	SEP-1988
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Final Phase II Data Addendum Site 26-5: Basin E (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	SEP-1988
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Final Report Task Number 27 Volume I - Report Hazardous Waste Land Disposal Facility Assessment Contract Number DAAK11-84-D-0017	RMA & EBASCO	SEP-1988
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	Final Phase II Data Addendum Site 30-1: Impact Area (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	SEP-1988
	Final Phase I Contamination Assessment Report (CAR) Site 30-2: Burn Site, Incendiaries (Version 3.2) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D0016	ES&E, RMA	SEP-1988
	Final Phase II Data Addendum Site 30-5: M34 Demilitarization Operation Area (Incorrectly identified as Liquid Disposal Trenches) (Version 3.1) Contract Number DAAK11-84-D-D0016	ES&E, RMA	SEP-1988
	Implementation Document for Interim Response Action (IRA) to Improve the North Boundary System (NBS) Via Construction of Groundwater Recharge Trenches Final	Morrison-Knudsen Engineers Inc. & Shell Oil Co.	SEP-1988
	Final Phase II Data Addendum Site 30-6: Liquid Disposal Trenches (Version 3.1) Contract Number DAAK11-84-D-D0016	ES&E, RMA	SEP-1988
	Final Phase I Contamination Assessment Report (CAR) Site 35-6: Possible Munitions Test Area (Version 3.2) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D0016	ES&E, RMA	SEP-1988
	Final Phase II Data Addendum Site 36-2: Munitions Test Area and Incendiary Drop Site (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	SEP-1988
	Final Phase II Data Addendum Site 25-17: Probable Test Site with Trench (Formerly designated as 36-6) (Version 3.1) Contract Number DAAK11-84-D-0016:	ES&E, RMA	SEP-1988
	Final Phase I Contamination Assessment Report (CAR) Site 36-13: Trenches (Version 3.2) Task Number 14 (Army Sites North) Contract Number DAAK11-84- D0016	ES&E, RMA	SEP-1988
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	Final Phase II Data Addendum Site 36-1: Basin A (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	SEP-1988
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	Final Phase II Data Addendum Site 2-2 Test Site Version 3.1 Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	SEP-1988
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Final Phase II Data Addendum Site 2-13 Former Open	RMA & EBASCO	SEP-1988
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Final Phase II Data Addendum Site 4-3 Burning Pit	RMA & EBASCO	OCT-1988
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Final Phase II Data Addendum Site 32-5 Burning Pits	RMA& EBASCO	OCT-1988
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Final Phase II Data Addendum Site 4-2 Burning Pit	RMA & EBASCO	OCT-1988
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Final Phase II Data Addendum Site 5-2 Potential	RMA & EBASCO	OCT-1988
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Final Phase II Data Addendum Site 6-6 Former Toxic	RMA & EBASCO	OCT-1988
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Final Phase II Data Addendum Site 3-2/3-3 Drainage	RMA & EBASCO	OCT-1988
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Final Phase II Data Addendum Site 6-2 Eastern Upper	RMA & EBASCO	OCT-1988
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	Trial Burn Summary Report for the Interim Response Action (IRA) Basin F (Liquid) Submerged Quench Incinerator (SQI) Project Volume I Final	Weston	DEC-1993
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	Final Chemical Process Related Activities Nonagent, Non-process External Piping Implementation Letter Plan Version 3.1	Jacobs Engineering Group Inc.	FEB-1994
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	Final Implementation Letter (IL) for Element Two (2) (PCB) of the CERCLA Hazardous Wastes Interim Response Action (IRA)	Weston	MAR-1994
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	Existing (Sanitary) Landfill Remediation Project 100 Percent Design Package Design Analysis	Shell Oil Co., Tetra Tech EC Inc.	APR-1998
	Sanitary and Chemical Sewer Plugging Project Construction Completion Report (CCR) (Phase I) Shell Oil Co	Morrison Knudsen Corp.	APR-1998
	Hazardous Waste Landfill Design (Double Lined) Landfill Wastewater Treatment System (LWST) Final (100 Percent) Design Package (Includes Plans: Health / Safety Program Requirements, Construction Quality Assurance Plan (CQAP)	Morrison-Knudsen Corp. & Corps of Engineers	APR-1998
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	North Boundary Containment System (NBS) System Modifications for Treatment of N-Nitrosodimethylamine (NDMA) Construction and Startup Completion Report (CCR) Rocky Mountain Arsenal (CO) Remediation	Shell Oil Co.	JUN-1998
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	Existing (Sanitary) Landfill Remediation Project 100 Percent Design Package; Includes 08/24/1998 Plans: Construction Quality Assurance Plan (CQAP), Health / Safety Requirements, Project Completion, Air Monitoring, Haul Roads Operations, and Borrow Areas, Rocky Mountain Arsenal (CO) Remediation Venture	Foster Wheeler Environmental Corp.	AUG-1998
	Stage I Haul Roads 100 Percent Design Package (Includes Plans: Subcontractor Health and Safety Requirements, Construction Quality Assurance Plan (CQAP), and Haul Roads Operations - RVO Responses to the 06/00/1998 95 Percent Design for Stage I are Appended)	RMA	AUG-1998
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South Plants Structure Demolition and Removal Project Phase 1 (Final 100 Percent) Design Package - Updated with Technical Specifications Sections 01420 Decontamination, 01422 Temporary Remote Decontamination Operations, and 01425 South Plants Decontamination Operations	Shell Oil Co., Foster Wheeler Environmental Corp.	OCT-1998
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Basin A Operator Support Facility Project 100 Percent Design Package (Includes 12/08/1998 Plans: Health and Safety Requirements, and Construction Quality Assurance Plan (CQAP))	USFWS & Shell Oil Co.	DEC-1998
Confined Flow System (CFS) Well Closure Final (100 Percent) Design Report, Undefined	Shell Oil Co., Foster Wheeler Environmental Corp.	DEC-1998
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Addenda Number 2 for Existing (Sanitary) Landfill Remediation Project, 100 Percent Design (Replacement Pages),	Shell Oil Co., Foster Wheeler Environmental Corp.	DEC-1998
SACWSD Henderson Pipeline Construction Completion Report (CCR)	Shell Oil Co., Foster Wheeler Environmental Corp.	DEC-1998
Confined Flow System Well Closure Final (100 Percent) Design Report (Updated with Appendix H - RVO Responses to CDPHE Comments)	Shell Oil Co., Black & Veatch	JAN-1999
Toxic Storage Yards Soil Remediation Project 100 Percent Design Package (Includes Project Plans: Subcontractor Health and Safety Requirements, Construction Quality Assurance Plan (CQAP), Site- specific Air Monitoring	RMA, Remediation Venture, Foster Wheeler Environmental Corp.	MAR-1999
Toxic Storage Yards Soil Remediation Project 100 Percent Design Analysis Package, Revision A, Shell Oil Co, Foster Wheeler Environmental Corp 03/1999 Section 36 Bedrock Ridge Groundwater Plume Extraction System 100 Percent Design Package		MAR-1999
Section 36 Bedrock Ridge Groundwater Plume Extraction System 100 Percent Design Package (Includes Project Plans: Contractor Health and Safety	Shell Oil Co., Foster Wheeler Environmental	MAR-1999

(Includes Project Plans: Contractor Health and Safety

Plan Requirements, and Construction Quality Assurance

Corp.

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Existing (Sanitary) Landfill Remediation Project Health and Safety Requirements Project, Section 4 Landfills, Recovered Chemical Warfare Materiel (RCWM) Safety Plan (Appendix B of the Health and Safety Requirements	Shell Oil Co., Foster Wheeler Environmental Corp.	APR-1999
Final RMA Off-post Well Abandonment Construction Completion Report (CCR)	Shell Oil Co., Morrison Knudsen Corp.	MAY-1999
Addenda and Clarifications to the 03/00/1999 Section 36 Bedrock Ridge Groundwater Plume Extraction System 100 Percent Design Package	Shell Oil Co., Foster Wheeler Environmental Corp.	MAY-1999
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Lower Derby Lake Shoreline Expansion Project 100 Percent Design Package (Includes Plans: Health and Safety Requirements and Construction Quality Assurance Plan (CQAP))	Shell Oil Co., Foster Wheeler Environmental Corp.	JUL-1999
Final Construction Completion Report (CCR) for the Supplemental Operational Monitoring Well Installation Project	Shell Oil Co., Foster Wheeler Environmental Corp.	JUL-1999
South Plants Structure Demolition and Removal - Phase 2 100 Percent Design Package (Includes plans Subcontractor Health and Safety Requirements, Construction Quality Assurance Plan (CQAP), Chemical Agent and Testing	Shell Oil Co., Foster Wheeler Environmental Corp.	AUG-1999
RMA 100 Percent Design Corrective Action Management Unit (CAMU) Soils Remediation Completion and Support Project Statement of Work (SOW), Revision 1	Shell Oil Co., Foster Wheeler Environmental Corp.	AUG-1999
South Plants Structure Demolition and Removal - Phase 2 100 Percent Design Package Construction Quality Assurance Plan (CQAP), Revision C	Shell Oil Co., Arcadis Geraghty & Miller Team, Los Alamos Technical Assoc Inc.	AUG-1999
SACWSD Henderson Pipeline Construction Completion Report (CCR) (Final),	Shell Oil Co., Foster Wheeler Environmental Corp.	SEP-1999
South Plants Structure Demolition and Removal Phase 2 (100 Percent) Design Package (Final) (Includes plans: Subcontractor Health / Safety Requirements, Construction Quality Assurance Plan (CQAP), Chemical Screening Agent	Shell Oil Co., Foster Wheeler Environmental Corp.	OCT-1999
Miscellaneous Northern Tier Soil Remediation Project Construction Completion Report (CCR), Revision B	Shell Oil Co., Foster Wheeler Environmental Corp.	OCT-1999
Specification Section 02444 Groundwater Extraction Trench and Well, Revision 2 (for the 09/1997 Complex Trenches and Shell Section 36 Trenches Groundwater Barrier (Slurry Wall) Project 100 Percent Design Package)	Shell Oil Co., Black & Veatch	NOV-1999
Burial Trenches and Munitions (Testing) Soil Remediation Draft 100 Percent Design Package Design	Shell Oil Co., Foster Wheeler Environmental	NOV-1999

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1999	Analysis for Internal RVO, Review, Revision D	Corp.	
	Lake Sediments Remediation Project Draft Construction Completion Report (CCR), Revision A	Shell Oil Co., Foster Wheeler Environmental Corp.	NOV-1999
	Burial Trenches and Munitions (Testing) Soil Remediation Project Phase 1 100 Percent Design Package (Final) (Includes Plans: Construction Quality Assurance (CQAP), Project Completion, and Borrow Area 10 and Site ESA-3C Chemical Agent Screening)	Shell Oil Co., Foster Wheeler Environmental Corp.	DEC-1999
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	Existing (Sanitary) Landfill Remediation Section One (1) Construction Completion Report (CCR), Revision 0 (Final)	Morrison Knudsen Corp.	JAN-2000
	Corrective Action Management Unit (CAMU) Soils Remediation Completion and Support Project Construction Completion Report (CCR), Revision A	Shell Oil Co., Foster Wheeler Environmental Corp.	FEB-2000
	Addendum Number One (1) to the 12/00/1999 Final Burial Trenches and Munitions (Testing) Soil Remediation Project Phase 1 100 Percent Design Package	Shell Oil Co., Foster Wheeler Environmental Corp.	FEB-2000
	Miscellaneous Southern Tier Soil Remediation Project Construction Completion Report (CCR), Revision 0	Shell Oil Co., Foster Wheeler Environmental Corp.	FEB-2000
	Lake Sediments Remediation Project Construction Completion Report (CCR), Revision 0	Shell Oil Co., Foster Wheeler Environmental Corp.	FEB-2000
	Miscellaneous Northern Tier Soil Remediation Project Construction Completion Report (CCR), Revision 0	Shell Oil Co., Foster Wheeler Environmental Corp.	FEB-2000
	Replacement pages per the 12/08/1999 USEPA Comments on the 10/00/1999 South Plants Structure Demolition and Removal Phase 2 100 Percent Design Package	Shell Oil Co., Foster Wheeler Environmental Corp.	MAR-2000
	South Plants Balance of Areas and Central Processing Area Soil Remediation Project - Phase 1 (Final 100 Percent) Design Package (Includes plans: Construction Quality Assurance Plan (CQAP), Chemical Agent Materiel Screening	Shell Oil Co., Foster Wheeler Environmental Corp.	MAR-2000
	Attachment 1 - Recovered Chemical Warfare Materiel (RCWM) Integrated Air Monitoring Procedure (for Appendix L RCWM Safety Plan in the 03/00/2000 South Plants Balance of Areas and Central Processing Area Soil Remediation Project	Shell Oil Co., Foster Wheeler Environmental Corp.	MAR-2000
	Miscellaneous Northern Tier Soil Remediation Project Construction Completion Report (CCR), Revision 1 (Final)	Shell Oil Co., Foster Wheeler Environmental Corp.	MAR-2000
	Interior Building Chemical Related Activities for South Plants Construction Completion Report (CCR), Revision 0	Shell Oil Co., Foster Wheeler Environmental Corp.	MAR-2000
	South Plants Balance of Areas and Central Processing Area Soil Remediation Project - Phase 1 100 Percent Design Package	Shell Oil Co., Foster Wheeler Environmental Corp.	MAR-2000
	Lake Sediments Remediation Project Construction	Shell Oil Co., Foster	MAR-2000

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Completion Report (CCR), Revision 1 (updated Revised Final)	Wheeler Environmental Corp.	
Miscellaneous Northern Tier Soil Remediation Project Construction Completion Report (CCR), Revision 1 (Updated Revised Final)	Shell Oil Co., Foster Wheeler Environmental Corp.	MAR-2000
Lake Sediments Remediation Project Construction Completion Report (CCR), Revision 1 (Final)	Shell Oil Co., Foster Wheeler Environmental Corp.	MAR-2000
Existing (Sanitary) Landfills Remediation Section 4 Construction Completion Report (CCR), Revision 0	Shell Oil Co., Foster Wheeler Environmental Corp.	MAR-2000
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Existing (Sanitary) Landfill Remediation Section One (1) Construction Completion Report (CCR), Revision 1	Shell Oil Co., Foster Wheeler Environmental Corp.	APR-2000
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Miscellaneous Southern Tier Soil Remediation Project Construction Completion Report (CCR), Revision 1 (Updated with missing 02/00/2000 Revision 0	Shell Oil Co., Foster Wheeler Environmental Corp.	JUN-2000
South Plants Structure Demolition and Removal Project Phase 1 Construction Completion Report (CCR), Revision 0	Dames & Moore	JUL-2000
Existing (Sanitary) Landfills Remediation Section 4 Construction Completion Report (CCR), Revision 2	Shell Oil Co., Foster Wheeler Environmental Corp.	JUL-2000
Secondary Basins Soil Remediation Project Part 1 100 Percent Design Package (Includes Plans: Health and Safety, Construction Quality Assurance Plan (CQAP), and Project Completion)	Shell Oil Co., Foster Wheeler Environmental Corp.	AUG-2000
Basin F / Basin F Exterior Remediation Project Part 1 100 Percent Design Package (Includes Plans: Health and Safety, Construction Quality Assurance Plan (CQAP), and Project Completion)	Shell Oil Co., Foster Wheeler Environmental Corp.	AUG-2000
Secondary Basins Soil Remediation Project Part 1 100 Percent Design Package	Shell Oil Co., Foster Wheeler Environmental Corp.	AUG-2000
Landfill Wastewater Treatment System (LWTS) Project Construction Completion Report (CCR), Revision 1 (Final)	Shell Oil Co., Foster Wheeler Environmental Corp.	AUG-2000
Final RCRA Equivalent Cover Demonstration Project Construction Completion Report (CCR), Revision 1	Shell Oil Co., Foster Wheeler Environmental Corp.	AUG-2000
Secondary Basins Soil Remediation Project Part 1 100 Percent Design Package	Shell Oil Co., Foster Wheeler Environmental Corp.	AUG-2000
Section 26 Human Health Exceedance (HHE) and Biota	Gannett Fleming, Inc.	SEP-2000

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Final Lake Ladora Dam Reconstruction Project	Shell Oil Co., Foster	SEP-2000
Construction Completion Report (CCR)	Wheeler Environmental Corp.	
Final Interior Building Chemical Related Activities for	Shell Oil Co., Foster	SEP-2000
South Plants Construction Completion Report (CCR)	Wheeler Environmental	
Revision 1	Corp.	
RMA Sanitary and Chemical Sewer Plugging Project	Shell Oil Co., Foster	SEP-2000
Construction Completion Report (CCR) (Updated with	Wheeler Environmental	
Appendices from the 08/03/1998 CCR)	Corp.	
Draft Buried M-1 Pits Soil Remediation Project 100	Shell Oil Co., Foster	SEP-2000
Percent Design Analysis	Wheeler Environmental	
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South Plants Structure Demolition and Removal Project	Shell Oil Co., Foster	SEP-2000
Phase 1 Final Construction Completion Report (CCR)	Wheeler Environmental	
Revision 1	Corp.	
Final Corrective Action Management Unit (CAMU) Soils	Shell Oil Co., Foster	SEP-2000
Remediation Completion and Support Project	Wheeler Environmental	
Construction Completion Report (CCR)	Corp.	
Complex Army Trenches Groundwater Barrier Project	Shell Oil Co., Foster	SEP-2000
Draft Construction Completion Report (CCR), Revision A	Wheeler Environmental	
	Corp.	
RMA Record of Decision (ROD) for the On-Post	Shell Oil Co., Foster	OCT-2000
Operable Unit (OU)	Wheeler Environmental	
	Corp.	
Explanation of Significant Differences (ESD) for South Plants Balance of Areas and Central Processing Area Soil Remediation Project RMA Federal Facility Site (Fully Executed)	RMA	NOV-2000
Explanation of Significant Differences (ESD) for	Dodson, Max H.	NOV-2000
Chemical Sewer Remediation (Section 35 and Section	Environmental Protection	
26) RMA Federal Facility Site (Fully Executed)	Agency, Roitman, Howard	
	A. Colorado Dept Of Public	
	Health & Environment,	
	Scharmann, Charles T.	
	Program Manager RMA	
South Plants Balance of Areas and Central Processing	Shell Oil Co., Foster	DEC-2000
Area Soil Remediation Project Phase 2 100 Percent	Wheeler Environmental	
Design Package, Revision F	Corp.	
Final Buried M-1 Pits Soil Remediation Project 100	Shell Oil Co., Foster	JAN-2001
Percent Design Analysis (Updated with the 02/01/2001	Wheeler Environmental	
Final M-1 Pits Soil Remediation Project Construction	Corp.	
Quality Assurance Plan (CQAP), 100 Percent		
Final M-1 Pits Soil Remediation Project Construction	Dodson, Max H.	FEB-2001
Quality Assurance Plan (CQAP) 100 Percent Design,	Environmental Protection	
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	A. Colorado Dept of Public	
	Health & Environment,	
	Scharmann, Charles T.	
	Program Manager RMA	
Hex Pit Remediation Draft 100 Percent Design Analysis	Shell Oil Co., Foster	FEB-2001
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Hex Pit (Soil) Remediation Final 100 Percent Design Package (Updated with the 03/27/2001 Record of Decision (ROD), Implementation Schedule, for Appendix G)	Shell Oil Co., Foster Wheeler Environmental Corp.	MAR-2001
Final Hazardous Waste Landfill Phase II Project Construction Completion Report (CCR), Revision 0	Shell Oil Co., Foster Wheeler Environmental Corp.	MAR-2001
Complex Army Trenches Groundwater Barrier Project Construction Completion Report (CCR), Revision 0 (Final)	Program Manager RMA (CO), Terratherm	MAR-2001
Hex Pit (Soil) Remediation Final 100 Percent Design Package	Shell Oil Co., Foster Wheeler Environmental Corp.	MAR-2001
Munitions (Testing) Soil Remediation Project Construction Completion Report (CCR), Revision 0	Shell Oil Co., Foster Wheeler Environmental Corp.	MAR-2001
Destruction of Equipment in the GB (Sarin) Production and Fill Facilities 100 Percent Design Analysis, Revision C	Program Manager RMA (CO), Terratherm	MAR-2001
Complex Army Trenches Groundwater Barrier Project Construction Completion Report (CCR), Revision 1 (Final)	Program Manager RMA (CO), Terratherm	APR-2001
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Munitions (Testing) Soil Remediation Project Construction Completion Report (CCR), Revision 1	Shell Oil Co., Foster Wheeler Environmental Corp.	MAY-2001
Shell Section 36 Trenches Groundwater Barrier Project Construction Completion Report (CCR), Revision 0 (Final)	Shell Oil Co., Foster Wheeler Environmental Corp.	MAY-2001
South Plants Balance of Areas and Central Processing Area Soil Remediation Project Phase 2 100 Percent Design Package Volume 1	Shell Oil Co., Foster Wheeler Environmental Corp.	JUN-2001
North Plants Structure Demolition and Removal Project 100 Percent Design Package, Revision G	Shell Oil Co., Foster Wheeler Environmental Corp.	JUN-2001
Excerpts from the 07/13/2001 North Plants Structure Demolition and Removal Project 100 Percent Design Analysis, Revision 0	Dodson, Max H. Environmental Protection Agency, Roitman, Howard A. Colorado Dept of Public Health & Environment, Scharmann, Charles T. Program Manager RMA (CO)	JUL-2001
Operation and Maintenance (O&M) Asbestos Remediation Projects Construction Completion Report (CCR), Revision 1	Shell Oil Co., Foster Wheeler Environmental Corp.	JUL-2001
Final Remediation Design and Implementation Schedule (RDIS) Annual Update FY00/01/2002 (FY2002) (Appendix G) and minor corrections to Appendix B Project Descriptions	Shell Oil Co., Foster Wheeler Environmental Corp.	OCT-2001

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	RMA Remediation Design and Implementation Schedule (RDIS) Update	None noted	OCT-2001
	Operations and Maintenance (O&M) Asbestos Remediation Projects Final Construction Completion Report (CCR), Revision 1	Beardslee, Richard L. Program Manager RMA (CO)	OCT-2001
	Secondary Basins Soil Remediation Project Human Health Exceedance (HHE) Soil Removal Draft Construction Completion Report (CCR), Revision A	Shell Oil Co, Foster Wheeler Environmental Corp	NOV-2001
	Final Explanation of Significant Difference (ESD) for Endrin Containment System Remediation Goal (CSRQ) in On-Post and Off-Post Records of Decision (ROD) for RMA Federal Facility Site (Fully Executed)	Beardslee, Richard L. Program Manager RMA (CO)	NOV-2001
	South Plants Structure Demolition and Removal Project Phase 2 Construction Completion Report (CCR), Revision 0	Shell Oil Co, Foster Wheeler Environmental Corp.	DEC-2001
	RMA Record of Decision (ROD) for the On-Post Operable Unit (OU) Remediation Design and Implementation Schedule (RDIS)	USFWS, Shell Oil Co., Arcadis Geraghty & Miller Team, Los Alamos Technical Assoc Inc.	DEC-2001
	South Plants Balance of Areas and Central Processing Area Soil Remediation Project Phase 1 Construction Completion Report (CCR), Revision 0	Shell Oil Co., Foster Wheeler Environmental Corp.	DEC-2001
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	Final Explanation of Significant Differences (ESD for Secondary Basins B, C and D Remediation RMA Federal Facility Site, Rocky Mountain Arsenal (CO) Remediation Venture	None noted	JAN-2002
	Miscellaneous Northern Tier Soil Remediation Project Construction Completion Report (CCR), Revision 2	USFWS, Shell Oil Co., Foster Wheeler Environmental Corp.	FEB-2002
	Section 35 Soil Remediation Project 100 Percent Design Package (Updated with 03/19/2002 Errata / Replacement Pages)	Foster Wheeler Environmental Corp.	FEB-2002
	Section 35 Soil Remediation Project 100 Percent Design Package (Includes plans: Health / Safety, Construction Quality Assurance Plan (CQAP), and Project Completion)	Shell Oil Co., Foster Wheeler Environmental Corp.	FEB-2002
	Section 35 Soil Remediation Project Draft 100 Percent Design Package Design Analysis for RVO / PMC Internal Review, Revision 0	Shell Oil Co., Foster Wheeler Environmental Corp.	FEB-2002
	Section 35 Soil Remediation Project 100 Percent Design Package (Updated with 03/19/2002 Errata / Replacement Pages)	Foster Wheeler Environmental Corp.	MAR-2002
	South Plants Balance of Areas and Central Processing Area Soil Remediation Project - Phase 1 Construction Completion Report (CCR), Revision A	Shell Oil Co., Foster Wheeler Environmental Corp.	MAR-2002
	South Plants Structure Demolition and Removal Project Phase 2 Construction Completion Report (CCR), Revision 0 (Final)	Shell Oil Co., Foster Wheeler Environmental Corp.	MAR-2002
	Buried M-1 Pits Soil Remediation Project Final Construction Completion Report (CCR), Revision 0	Shell Oil Co., Foster Wheeler Environmental Corp.	MAR-2002
	South Plants Balance of Areas and Central Processing Area Soil Remediation Project Phase 1 Construction	Shell Oil Co., Foster Wheeler Environmental	MAR-2002

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Completion Report (CCR), Appendix F, Soil Excavation / Volume Verification Calculations	Corp.	
Errata / Replacement Pages for the 02/00/2002 Section 35 Soil Remediation Project 100 Percent Design	Shell Oil Co., Foster Wheeler Environmental	MAR-200
Package, Shell Oil Co, Foster Wheeler Environmental Corp.	Corp.	
Existing (Sanitary) Landfill Remediation Project 100	Shell Oil Co, Foster	APR-2002
Percent Design Package Technical Specifications	Wheeler Environmental Corp.	
Buried M-1 Pits Soil Remediation Project Construction	Foster Wheeler	APR-2002
Completion Report (CCR), Revision 0 (Updated with signed Certification Page)	Environmental Corp.	
Munitions (Testing) Soil Remediation Project Construction Completion Report (CCR) Part I, Revision 2	Foster Wheeler Environmental Corp.	APR-2002
Burial Trenches Soil Remediation Project Construction Completion Report (CCR) Part I, Revision 0	Shell Oil Co., Foster Wheeler Environmental Corp.	APR-2002
Enhanced Hazardous Waste Landfill (ELF) 100 Percent Design Analysis, Revision J	Shell Oil Co., Foster Wheeler Environmental Corp.	MAY-200
Miscellaneous RMA Structure Demolition and Removal Project Phase 1 Construction Completion Report (CCR), Revision 0 (Final)	Shell Oil Co., Foster Wheeler Environmental Corp.	JUN-2002
Enhanced Hazardous Waste Landfill (ELF) 100 Percent Design Analysis, Volume II (Calculations)	None noted	JUL-2002
Signed Cover Page for the Enhanced Hazardous Waste Landfill (ELF) 100 Percent Design Analysis, Revision 0	Shell Oil Co., Foster Wheeler Environmental Corp.	JUL-2002
Enhanced Hazardous Waste Landfill (ELF) 100 Percent Design Analysis, Volume III (Calculations)	Shell Oil Co., Foster Wheeler Environmental Corp.	JUL-2002
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South Plants Balance of Areas and Central Processing Area Soil Remediation Project Phase I - Construction Completion Report (CCR), Revision 0 (Final)	Shell Oil Co., Foster Wheeler Environmental Corp.	AUG-200
Final Burial Trenches Soil Remediation Project Construction Completion Report (CCR) Part I, Revision 1	Shell Oil Co., Foster Wheeler Environmental Corp.	SEP-2002
Basin F Wastepile Remediation Project 100 Percent Design Package, Revision F	Foster Wheeler Environmental Corp.	SEP-2002
RMA Record of Decision (ROD) for the On-Post Operable Unit (OU) Remediation Design and Implementation Schedule (RDIS)	Shell Oil Co., Foster Wheeler Environmental Corp.	NOV-200
Basin F Wastepile Remediation Project 100 Percent Design Package, Revision 0	Shell Oil Co., Foster Wheeler Environmental Corp.	NOV-200

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Extraction System Final Construction Report (CCR)	International	

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Explanation of Significant Differences (ESD) for Section 36 Balance of Areas (BOA) Soil Remediation Project Final, Revision 0	Shell Oil Co., Foster Wheeler Environmental Corp.	APR-2003
Explanation of Significant Differences (ESD) for Section	Foster Wheeler	APR-2003
36 Balance of Areas (BOA) Soil Remediation Project 100	Environmental Corp.	AI 10-2003
Percent Design Package. Revision 0		
Amendment to the Record of Decision (ROD) for the On-	Shell Oil Co., Foster	APR-2003
Post Operable Unit, RMA Federal Facility Site Hex Pit	Wheeler Environmental	
Remediation Final, Revision 0	Corp.	
Miscellaneous RMA Structure Demolition and Removal	Foster Wheeler	MAY-2003
Project Phase I Construction Completion Report (CCR)	Environmental Corp.	
Section 36 Balance of Areas (BOA) Soil Remediation	Foster Wheeler	JUN-2003
Project 100 Percent Design Package Design Analysis,	Environmental Corp.	
Revision 1 (Revisions only include Table of Changes)		
Section 36 Balance of Areas (BOA) Soil Remediation	Foster Wheeler	JUN-2003
Project 100 percent Design Package Design Analysis	Environmental Corp.	
Revision 1 (Revisions only includes Table of Changes)		
Draft Miscellaneous RMA Structure Demolition and	Shell Oil Co., Foster	JUN-2003
Removal Project 100 Percent Design Package Design	Wheeler Environmental	
Analysis	Corp.	
North Plants Structure Demolition and Removal	Shell Oil Co., Wheeler	JUL-2003
Remediation Project Construction Completion Report	Environmental Corp.	
(CCR) Draft, Revision B		
Enhanced Hazardous Waste Landfill (ELF) Contingent	Foster Wheeler	AUG-2003
Contaminated Storm water Control System 100 Percent	Environmental Corp.	
Design Analysis		
South Plants Balance of Areas and Central Processing	Foster Wheeler	AUG-2003
Area Soil Remediation Project - Phase 2 Construction Completion Report (CCR), Revision B	Environmental Corp.	
Hex Pit Soil Remediation Project 100 Percent Design	Shell Oil Co., Foster	OCT-2003
Analysis, Revision F	Wheeler Environmental	
	Corp.	
RMA Hex Pit Soil Remediation Project Final 100 Percent	Shell Oil Co., Foster	OCT-2003
Design Package, Revision 0	Wheeler Environmental	
J	Corp.	
RMA Section 35 Soil Remediation Project Construction	Foster Wheeler Corp.	NOV-2003
Completion Report (CCR) (Final), Revision 0		
RMA Burial Trenches Soil Remediation Project Final	Foster Wheeler Corp.	NOV-2003
Construction Completion Report (CCR) Part I, Revision 2	•	
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Construction Completion Report (CCR) Part I, Revision 2		
(revised with pages transmitted on 07/29/2004)		
Burial Trenches Soil Remediation Project Final	Foster Wheeler Corp.	NOV-2003
Construction Completion Report (CCR) Part 1, Revision		
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Appendix I: Remediation Design and Implementation	RMA	NOV-2003
Schedule (RDIS) Annual Update Fiscal Year 00/00/2004		
(FY04)		
Appendix B: Project Descriptions to RMA Record of	RMA	NOV-2003
Decision (ROD) for the On-Post Operable Unit		
Remediation Design and Implementation Schedule		

2003	Title	Author	Date
2003	RMA Record of Decision (ROD) for the On-Post Operable Unit Remediation Design and Implementation Schedule (RDIS) (incorrect date on document)	RMA	NOV-2003
	Existing (Sanitary) Landfill Remediation Section 1 Construction Completion Report (CCR) Addendum 1	USFWS, Shell Oil Co. & Dept of the Army	DEC-2003
	Section 26 Human Health Exceedance (HHE) and Biota Exceedance Soils Removal Project Construction Completion Report (CCR), Addendum 1, Revision A	Shell Oil Co., Foster Wheeler Environmental Corp.	DEC-2003
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	RMA Section 26 Human Health Exceedance(HHE) and Biota Exceedance Soils Removal Project Construction Completion Report (CCR) Addendum 1, Revision 0	USFWS, Shell Oil Co. & Dept of the Army	FEB-2004
	RMA Existing (Sanitary) Landfill Remediation Section 1 Construction Completion Report (CCR) Addendum 1, Revision 0	USFWS, Shell Oil Co. & Dept of the Army	FEB-2004
	RMA Record of Decision (ROD) for the On-Post Operable Unit Remediation Design and Implementation Schedule (RDIS) (Fiscal Year 00/00/2004 (FY04) Update)	USFWS, Shell Oil Co. & Dept of the Army	FEB-2004
	RMA South Lakes Groundwater Investigation Construction Completion Report (CCR) Revision A	USFWS, Shell Oil Co. & Dept of the Army	FEB-2004
	RMA North Plant (Plants) Structure Demolition and Removal Remediation Project and Destruction of Equipment in the GB Production and Fill Facilities Project, Construction Completion Report (CCR) Revised	Tetra Tech EC, Inc.	MAR-2004
	RMA Hex Pit Soil Remediation Project [Redesign] Draft Construction Completion Report (CCR), Revision A	USFWS, Shell Oil Co. & Dept of the Army	MAR-2004
	RMA Munitions (Testing) Soil Remediation Project Construction Completion Report (CCR) Part 1, Revision 5 (revised with pages transmitted on 07/29/2004),	Tetra Tech EC, Inc.	MAR-2004
	RMA Munitions (Testing) Soil Remediation Project Construction Completion Report (CCR) Part 1, Revision 5 (Revised)	Tetra Tech EC, Inc.	MAR-2004
	RMA Shutdown Monitoring for the Motor Pool Extraction System Construction Completion Report (CCR), Revision A,	USFWS, Shell Oil Co. & Dept of the Army	APR-2004
	RMA Secondary Basins Soil Remediation Project Construction Completion Report (CCR), Revision 1	Tetra Tech EC, Inc.	APR-2004
	Section 35 Soil Remediation Project Construction Completion Report (CCR), Revision 1 (Revised 05/18/2004, 06/22/2004, and 10/14/2004)	Tetra Tech EC, Inc.	APR-2004
	RMA Section 35 Soil Remediation Project Construction Completion Report (CCR), Revision 1	Tetra Tech EC, Inc.	APR-2004
	RMA Remediation Design and Implementation Schedule (RDIS 04/08/2004 Update) 4/8/2004RMA Section 36 Existing (Sanitary) Landfills Remediation Project, Construction Completion Report (CCR) Revision 0	Shell Oil Co., Tetra Tech EC, Inc.	APR-2004
	Remediation Design and Implementation Schedule (RDIS 06/10/2004 Update)	Tetra Tech EC, Inc.	JUN-2004
	Explanation of Significant Differences (ESD) for Burial Trenches Soil Remediation Project RMA Federal Facility Site, Revision 0 (Signed)	Shell Oil Co., Tetra Tech EC, Inc.	JUN-2004
	HEX Pit Soil Remediation Project (Redesign) Construction Completion Report (CCR), Revision 0 (Revised 06/29/2004)	Tetra Tech EC, Inc.	JUN-2004

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RMA Hex Pit Soil Remediation Project [Redesign] Construction Completion Report (CCR), Revision 0	Tetra Tech EC, Inc.	JUN-2004
RMA Termination of Operations at the Groundwater Intercept and Treatment System North of Basin F Well Construction Completion Report (CCR) Final	Tetra Tech EC, Inc.	JUN-2004
Explanation of Significant Differences (ESD) for North Plants Structure Demolition and Removal Project RMA Federal Facility Site, Revision C	Environmental Protection Agency, USFWS, Shell Oil Co. & Tetra Tech EC, Inc.	AUG-2004
Fact Sheet - Explanation of Significant Differences (ESD) for the North Plants Soil Remediation	RMA	AUG-2004
North Plant Structure Demolition and Removal Remediation Project and Destruction of Equipment in the GB Production and Fill Facilities Project Construction Completion Report (CCR)	Tetra Tech EC, Inc.	SEP-2004
RMA North Plants Structure Demolition and Removal Remediation Project and Destruction of Equipment in the GB Production and Fill Facilities Project, Construction Completion Report (CCR), Revision 1	Colorado Dept of Public Health & Environment, Dept of the Army, Environmental Protection Agency, USFWS, Shell Oil Co. & Tetra Tech EC, Inc.	SEP-2004
Explanation of Significant Differences (ESD) for North Plants Structure Demolition and Removal Project RMA Federal Facility Site, Revision 0	Tetra Tech EC, Inc.	SEP-2004
RMA Burial Trenches Soil Remediation Project Final Construction Completion Report (CCR) Part II, Revision 0	Tetra Tech EC, Inc.	SEP-2004
Record of Decision (ROD) for the On-Post Operable Unit Remediation Design and Implementation Schedule (RDIS)	Colorado Dept of Public Health & Environment, Dept of the Army, Environmental Protection Agency, USFWS, Shell Oil Co. & Tetra Tech EC, Inc.	OCT-2004
RMA Shell Disposal Trenches Remediation Project Subgrade Construction 100 Percent Design Package Design Analysis, Revision C	Shell Oil Co., Tetra Tech EC, Inc.	NOV-2004
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Shell Disposal Trenches Remediation Project Subgrade Construction 100 Percent Design Package Design Analysis, Revision 0	Shell Oil Co., Tetra Tech EC, Inc.	DEC-2004
RMA Irondale Containment System Shutdown for the Motor Pool Extraction System Construction Completion Report (CCR) Final, Revision 1	Shell Oil Co., Washington Group International	JAN-2005
Explanation of Significant Differences (ESD) for Existing (Sanitary) Landfills (ESL) Soil Remediation Project RMA Federal Facility Site, Revision C	Tetra Tech EC, Inc.	FEB-2005
RMA Complex (Army) Disposal Trenches Remediation Project Subgrade Construction 100 Percent Design	Shell Oil Co., Tetra Tech EC, Inc.	FEB-2005

Package Design Analysis, Revision C

Package Design Analysis, Revision 0

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Project Subgrade Construction 100 Percent Design

2004

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2005

MAR-2005

Shell Oil Co., Tetra Tech

EC, Inc.

Title	Author	Date
Errata Sheet for the 12/23/2004 Shell Disposal Trenches Remediation Project Subgrade Construction 100 Percent Design Package Design Analysis, Revision 0	Shell Oil Co., Tetra Tech EC, Inc.	APR-2005
RMA Miscellaneous RMA Structure Demolition and Removal Project - Phase II Draft Construction Completion Report (CCR), Revision C	Shell Oil Co., Tetra Tech EC, Inc.	APR-2005
RMA Section 30 Existing (Sanitary) Landfills Remediation Project Construction Completion Report (CCR), Revision 0	Colorado Dept of Public Health & Environment, Environmental Protection Agency, Fish & Wildlife Service, Shell Oil Co., Tetra Tech EC, Inc.	MAY-2005
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Explanation of Significant Differences (ESD) for Shell Disposal Trenches Remediation Project RMA Federal Facility Site, Revision C	Shell Oil Co., Tetra Tech EC, Inc.	JUN-2005
RMA Section 30 Existing (Sanitary) Landfills Remediation Project Construction Completion Report (CCR), Revision 1	Tetra Tech EC, Inc.	JUL-2005
RMA South Plants Balance of Areas (BOA) and Central Processing Area (CPA) Soil Remediation Project - Phase 2, Part 1 and Part 2, Construction Completion Report (CCR), Revision 0	Tetra Tech EC, Inc.	SEP-2005
RMA Residual Ecological Risk Soil Remediation - Part 1 Draft Construction Completion Report (CCR), Revision A,	Colorado Dept of Public Health & Environment, Environmental Protection Agency, Fish & Wildlife Service, Shell Oil Co., Tetra Tech EC, Inc.	SEP-2005
Amendment to the Record of Decision (ROD) for the On- Post Operable Unit RMA Federal Facility Site Section 36 Lime Basins Remediation Basin F Principal Threat Soil Remediation, Revision 0 (Signed)	Tetra Tech EC, Inc.	OCT-2005
RMA Shell Disposal Trenches Remediation Project RCRA Equivalent Cover Construction 100 Percent Design Package Design Analysis, Revision E	Shell Oil Co., Tetra Tech EC, Inc.	OCT-2005
RMA Record of Decision (ROD) for the On-Post Operable Unit Remediation Design and Implementation Schedule (RDIS),	RMA	NOV-2005
Miscellaneous RMA Structure Demolition and Removal Project Phase II Construction Completion Report (CCR), Revision 0	Tetra Tech EC, Inc.	NOV-2005
Basin F / Basin F Exterior Remediation Project - Part 1 Final Construction Completion Report (CCR), Revision 0	Shell Oil Co., Tetra Tech EC, Inc.	NOV-2005
Explanation of Significant Differences (ESD) for Groundwater Remediation RMA Federal Facility Site, Revision A	Shell Oil Co., Tetra Tech EC, Inc.	DEC-2005
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RMA Section 36 Bedrock Ridge Groundwater Plume Extraction System, Construction Completion Report (CCR)	Washington Group International	JAN-2006
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Section 26 Human Health Exceedance and Biota Exceedance Soils Removal Project Construction Completion Report (CCR) Addendum 1, Revision 1	USFWS, Shell Oil Co. & Dept of the Army	JAN-2006
Existing (Sanitary) Landfill Remediation Section 1, Construction Completion Report (CCR) Addendum 1, Revision 1	Shell Oil Co., Washington Group International	JAN-2006
Former Basin F Principal Threat Soil Remediation Project 100 Percent Design Package, Revision 0	Tetra Tech EC, Inc.	JAN-2006
Shell Disposal Trenches Remediation Project RCRA Equivalent Cover Construction 100 Percent Design Package, Design Analysis, Revision 1	Tetra Tech EC, Inc.	JAN-2006
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Three Errata Pages for The RMA Treatment Plant Effluent Plant Effluent Water Quality Data All Quarters Fiscal Year 00/00/2005	Tetra Tech EC, Inc.	FEB-2006
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RMA South Tank Farm/Lime Basins Groundwater Mass Removal Project Sampling and Analysis Plan, Revision 0 (Plan Effective Fiscal Year 00/00/2006 (FY06))	Washington Group International	APR-2006
RMA Groundwater Mass Removal Project Start Up and Testing Plan Final (Includes RVO Responses to the	Washington Group International	APR-2006

#### 2006

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RMA Treatment Plant Effluent Water Quality Data First Quarter Fiscal Year 00/00/2006 (FY06)	Remediation Venture Office	APR-2006
Basin F Closure And Post Closure Groundwater Monitoring Plan Final, Revision 1 (Revised Title Page sent to Regulatory Agencies 05/11/2006)	Tetra Tech EC, Inc.	APR-2006
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Explanation of Significant Differences (ESD) for the Shell Disposal Trenches Remediation Project, Revision 0 (Signed)	Tetra Tech EC, Inc.	MAY-2006
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RMA Treatment Plant Effluent Water Quality Data First and Second Quarters FY06 (Fiscal Year 00/00/2006)	Remediation Venture Office	JUL-2006
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Landfill Wastewater Treatment System Quarterly Discharge Monitoring Report For Reporting Period 07/01/2006 to 09/30/2006	Washington Group International	SEP-2006
RMA Treatment Plant Effluent Water Quality Data First, Second, and Third Quarters FY06 (Fiscal Year 00/00/2006)	Remediation Venture Office	OCT-2006
Enhanced Hazardous Waste Landfill (Elf) Liner Construction Project Construction Completion Report (CCR) Final, Revision 0	Tetra Tech EC, Inc.	OCT-2006
Hazardous Waste Landfill (HWL) Landfill Wastewater Treatment System and Enhanced Hazardous Waste Landfill (ELF) Annual Groundwater Monitoring Report for 07/002004 - 06/00/2005, Revision 1	Tetra Tech EC, Inc.	NOV-2006
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Off-post Groundwater Intercept and Treatment System Sampling and Analysis Plan, Revision 0, Plan Effective FY 00/00/2007 (Signed)	Washington Group International	JAN-2007
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Landfill Wastewater Treatment System Quarterly Discharge Monitoring Report for Reporting Period 10/01/2006 to 12/31/2006	Washington Group International	JAN-2007
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Hazardous WasteLandfill (HWL) and Facilities Operations Project Construction Completion Report (CCR), Revision 0 (Signed)	Tetra Tech EC, Inc.	JAN-2007
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RMA Section 36 Bedrock Ridge Groundwater Plume Extraction System Construction Completion Report (CCR) Draft Final, Revision 4	Washington Group International	FEB-2007
Former Basin F Principal Threat Remediation Project 100 Percent Design Package, Revision 0 (Revised 03/29/2007)	Tetra Tech EC, Inc.	FEB-2007
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Treatment Plant Effluent Water Quality Data First Quarter FY07 (Fiscal Year 00/00/2007)	Remediation Venture Office	MAR-2007
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Section 36 Lime Basins Soil Remediation Project Slurry/Barrier Wall Design 100 Percent Design Package, Revision 0	Tetra Tech EC, Inc.	APR-2007
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Enhanced Hazardous Waste Landfill (ELF) 100 Percent Design Package, Revision 2 (Design Change Notice DCN-ELF-005)	Tetra Tech EC, Inc.	MAY-2007
RMA Treatment Plant Effluent Water Quality Data First and Second Quarters FY07	RMA	MAY-2007
Section 36 Lime Basins Soil Remediation Project Slurry/Barrier Wall Design 100 Percent Design Package, Revision 1 (Includes RVO Responses to USEPA Comments)	Tetra Tech EC, Inc.	JUN-2007
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Landfill Wastewater Treatment System Toxicity Identification Evaluation/Toxicity Reduction Evaluation Report	Washington Group International	JUL-2007
Integrated Cover System Design Project Revised 100 Percent Design Package, Design Analysis, Revision 1	Tetra Tech EC, Inc.	JUL-2007
Replacement Pages (Table of Contents) Integrated Cover System Design Project Revised 100 Percent Design Package, Revision 1	Tetra Tech EC, Inc.	AUG-2007

2007

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2007			
	Hazardous Waste Landfill (HWL), Landfill Wastewater Treatment System, and Enhanced Hazardous Waste Landfill (ELF) Annual Groundwater Monitoring Report for 07/00/2005 through 06/00/2006, Revision 0 (Final)	Tetra Tech EC, Inc.	AUG-2007
	Munitions (Testing) Soil Remediation Project Construction Completion Report (CCR) Part III, Revision 0 (Signed)	Tetra Tech EC, Inc.	SEP-2007
	Landfill Wastewater Treatment System Quarterly Discharge Monitoring Report for Reporting Period 07/01/2007 to 09/30/2007	Washington Group International	OCT-2007
	RMA Treatment Plant Effluent Water Quality Data First, Second and Third Quarters FY07	RMA	OCT-2007
	Integrated Cover System (ICS) Design Project Revised 100 Percent Design Package, Revision 2	Tetra Tech EC, Inc.	OCT-2007
	Hazardous Waste Landfill (HWL) and Facilities Operations Project Construction Completion Report (CCR), Revision 1 (Signed)	Tetra Tech EC, Inc.	NOV-2007
	Munitions (Testing) Soil Remediation Project Construction Completion Report (CCR) Part II, Revision 0 (Signed)	Tetra Tech EC, Inc.	NOV-2007
	Sanitary Sewer Manhole Plugging Project - Phase II 100 Percent Design Package Design Analysis, Revision 0	Tetra Tech EC, Inc.	NOV-2007
	RMA Treatment Plant Effluent Water Quality Data, All Quarters Fiscal Yea 2007	RMA	DEC-2007
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	Landfill Wastewater Treatment System Quarterly Discharge Monitoring Report for the Period of 10/01/2007 to 12/31/2007	Washington Group International	JAN-2008
	RMA Treatment Plant Effluent Water Quality Data First Quarter Fiscal Year 00/00/2008 (FY08)	RMA	JAN-2008
	Basin F/Basin F Exterior Remediation Project - Part 2 (Basin F Cove) Revised 100 Percent Design Package Design Analysis, Revision 0 (Contains Replacement Pages Transmitted on 03/18/2008 and 04/01/2008	Tetra Tech EC, Inc.	JAN-2008
	Landfill Wastewater Treatment Systems (LWTS) Quarterly Discharge Monitoring Report for Reporting Period 10/01/2007 to 12/31/2007	Washington Group International	JAN-2008
	Complex Army Disposal Trenches Remediation Project Subgrade Construction Completion Report (CCR), Revision 0 (Signed)	Tetra Tech EC, Inc.	FEB-2008
	Munitions (Testing) Soil Remediation Project Construction Completion Report (CCR) Part II, Revision 1 (Signed Final)	Tetra Tech EC, Inc.	FEB-2008
	Munitions (Testing) Soil Remediation Project Construction Completion Report (CCR) Part II, Revision 1 (Signed Final)	Tetra Tech EC, Inc.	MAR-2008
	Explanation of Significant Differences (ESD) for the Sand Creek Lateral and Other Ditches Remediation Miscellaneous Southern Tier Soil Remediation Project and Section 35 Soil Remediation Project RMA Federal Facility Site, Revision 0	Tetra Tech EC, Inc.	APR-2008
	RMA North Plants Petroleum Release Evaluation and Action Plan (PREAP) for Light Non-Aqueous Phase Liquid (LNAPL) Associated with Groundwater, Revision 0	Tetra Tech EC, Inc.	APR-2008

Title	Author	Date
Landfill Wastewater Treatment System (LWTS) Quarterly Discharge Monitoring Report for Reporting Period: 01/01/2008 to 03/31/2008	Washington Group International	MAY-2008
RMA Treatment Plant Effluent Water Quality Data First and Second Quarters Fiscal Year 00/00/2008 (FY08)	RMA	MAY-2008
Basin F Wastepile Remediation Project Construction Completion Report (CCR), Revision 0 (Signed)	Tetra Tech EC, Inc.	MAY-2008
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Sand Creek Lateral Miscellaneous Southern Tier Soil Remediation Project and Section 35 Soil Remediation Project Construction Completion Report (CCR), Revision 0 (Signed)	Tetra Tech EC, Inc.	JUN-2008
Final Long Term Monitoring Program RMA Annual Data Summary of Sites Addressed by USGS Monitoring Programs 00/00/2007 Water Year	U.S. Geological Survey	JUN-2008
Landfill Wastewater Treatment System (LWTS) Quarterly Discharge Monitoring Report for Reporting Period 04/01/2008 to 06/30/2008	Washington Group International	JUN-2008
Explanation of Significant Differences (ESD) for Off-site Waste Disposal and Cost Increases for On-site Disposal Facility Projects, Revision 0 (Signed)	Tetra Tech EC, Inc.	AUG-2008
Fiscal Year 2009 (00/00/2009) (FY2009) Sampling and Analysis Plan, Off-post Groundwater Treatment and Intercept System, Revision 0 (Fully Executed)	Washington Group International	SEP-2008
Fiscal Year 2009 (00/00/2009) (FY2009) Sampling and Analysis Plan, South Tank Farm/Lime Basins Groundwater Mass Removal Project, Revision 0 (Fully Executed)	Washington Group International	SEP-2008
Fiscal Year 2009 (00/00/2009) (FY2009) Sampling and Analysis Plan, Landfill Wastewater Treatment System, Revision 0 (Fully Executed)	Washington Group International	SEP-2008
RMA Treatment Plant Effluent Water Quality Data First, Second, and Third Quarters Fiscal Year 00/00/2008 (FY08)	RMA	SEP-2008
Final RMA Section 36 Bedrock Ridge Groundwater Plume Extraction System Construction Completion Report (CCR), Revision 6 (Signed)	Washington Group International	SEP-2008
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Deionized Water System Sampling and Analysis Plan, Fiscal Year 00/00/2009, Revision 0	Washington Group International	OCT-2008
Final RMA Section 36 Bedrock Ridge Groundwater Plume Extraction System Construction Completion Report (CCR), Revision 6 (Signed)	Tetra Tech EC, Inc.	OCT-2008
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Munitions (Testing) Soil Remediation Project RMA		
Federal Facility Site, Revision 0 (Signed)		
(Final) Shell Disposal Trenches Remediation Project	Tetra Tech EC, Inc.	NOV-2008
RCRA Equivalent Cover Subgrade Construction, RCRA		
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Monitoring Report for 07/00/2006 - 06/00/2007, Revision		
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RMA Treatment Plant Effluent Water Quality Data All	RMA	DEC-2008
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Final Explanation of Significant Differences (ESD) for	Tetra Tech EC, Inc.	DEC-2008
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Revision 0 (Signed)		
Landfill Wastewater Treatment System (LWTS) Quarterly	URS Washington Group	JAN-2009

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Final Explanation of Significant Differences (ESD) for North Plants Soil Remediation Project RMA Federal Facility Site, Revision 0 (Fully Executed)	Tetra Tech EC, Inc.	JAN-2009
Final Section 36 Balance of Areas (BOA) Soil Remediation Project - Part I, Construction Completion Report (CCR), Revision 0 (Signed)	Tetra Tech EC, Inc.	FEB-2009
Enhanced Hazardous Waste Landfill (ELF) and Facilities Operations Project Construction Completion Report (CCR), Revision 0 (Signed)	Tetra Tech EC, Inc.	MAR-2009
Treatment Plant Effluent Water Quality Data First Quarter Fiscal Year 00/00/32009 (FY2009)	RMA	MAR-2009
Basin F Principal Threat (PT) Soil Remediation Project and Basin F Wastepile Drying Facility Demolition Construction Completion Report (CCR), Revision 0 (Signed)	Tetra Tech EC, Inc.	MAR-2009
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Final RMA Co-Located Groundwater Sampling Project Fiscal Year 00/00/2007 and 2008 (FY2007 and FY2008) Report	USEPA	APR-2009
RMA Secondary Basins Soil Remediation Project NCSA-2D (Basin B Drainage Ditch) Contingent Soil Volume (CSV) (NCSA-2D CSV Project) Construction	Tetra Tech EC, Inc.	MAY-2009

#### 2009

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URS Washington Group	JUN-2009
Tetra Tech EC, Inc.	JUN-2009
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Project 100 Percent Design Package Design Analysis		
Report (Signed)		
Final Groundwater Mass Removal Project FY 00/00/2008 (FY2008) Annual Operations Report	URS Washington Division	JAN-2010
Basin F Closure Groundwater Monitoring Report 00/00/2008, Revision 0	Tetra Tech EC Inc	JAN-2010
Landfill Wastewater Treatment System (LWTS) Quarterly Discharge Monitoring Report for Reporting Period: 10/01/2009 to 12/31/2009	URS Corporation	JAN-2010
Final Lime Basins Groundwater Treatment Relocation Project 100 Percent Design Package Design Analysis Report (Signed)	URS Washington Division	JAN-2010
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Final Long Term Monitoring Plan (LTMP) for Groundwater and Surface Water, Revision 0	Tetra Tech EC Inc	MAR-2010
Decision Document (DD-Basin A- 16) - Revisions to the Basin A Consolidation and Remediation Project Groundwater Monitoring Plan Requirements Incorporated Into the 00/00/2010 Long Term Monitoring Plan (LTMP) for Groundwater and Surface Water (Signed)	URS Washington Division	MAR-2010
Final Lime Basins Dense Non Aqueous Phase Liquid (DNAPL) Remedial Investigation/Feasibility Study (RI/FS) Work Plan, Revision 0	Tetra Tech EC Inc	MAR-2010
Final Oversight Sampling Program FY 00/00/2007 (FY2007) Report	Pacific Western Technologies, LTD.	MAR-2010
RMA Treatment Plant Effluent Water Quality Data Report First Quarter FY 00/00/2010 (FY2010)	RMA	APR-2010
Landfill Wastewater Treatment System (LWTS) Quarterly Discharge Monitoring Report for Reporting Period: 01/01/2010 to 03/31/2010	URS Corporation	APR-2010
Final Explanation of Significant (ESD) Differences for Section 36 Balance of Areas (BOA) Soil Remediation Project, Revision 0 (Signed)	Tetra Tech EC Inc	APR-2010
Long Term Monitoring Program (LTMP) RMA Annual Data Summary of Sites Addressed by USGS Monitoring Programs 00/00/2009 Water Year	USGS	MAY-2010
Basin F Closure Groundwater Monitoring Report 00/00/2009, Revision 0	Tetra Tech EC Inc	JUN-2010
Hazardous Waste Landfill (HWL) Final Cap Construction Project Construction Completion Report (CCR), Revision 0 (Signed)	Tetra Tech EC Inc	JUN-2010
Final Basin F/Basin F Exterior Remediation Project Part 2 Basin F Cover Project) Construction Completion Report (CCR) - Part 1, Revision 0 (Signed)	Tetra Tech EC Inc	JUN-2010
RMA Treatment Plant Effluent Water Quality Data Report Second Quarter FY 00/00/2010 (FY2010)	RMA	JUL-2010
Landfill Wastewater Treatment System (LWTS) Quarterly Discharge Monitoring Report for Reporting Period: 04/01/2010 to 06/30/2010	URS Corporation	JUL-2010

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Section 36 Lime Basins Soil Remediation Project Slurry/Barrier Wall Construction, Construction Completion Report (CCR), Revision 0 (Signed)	Tetra Tech EC Inc	AUG-2010
RMA Treatment Plant Effluent Water Quality Data Report, Third Quarter FY2010 (Fiscal Year 00/00/2010)	RMA	SEP-2010
Final Construction Quality Assurance (CQA) for the Integrated Cover System (ICS) RCRA Equivalent Cover Construction, Revision 0	Golder Associates, Inc	SEP-2010
Final Construction Quality Assurance (CQA) for the Enhanced Hazardous Waste Landfill (ELF) Final Cover Construction, Revision 0, Consists of two binders (Volume 1 of 2 and Volume 2 of 2)	Golder Associates, Inc	SEP-2010
Final Integrated Cover System (ICS) Project (Basin A, Complex Army Trenches, Lime Basins, Shell Disposal Trenches (SDT), South Plants) Subgrade and Cover Construction, Construction Completion Report (CCR) - Part 1, Revision 0 (Signed)	Tetra Tech EC Inc	SEP-2010
Landfill Wastewater Treatment System (LWTS) and Enhanced Hazardous Waste Landfill (ELF), Annual Groundwater Monitoring Report for 07/00/2008 - 06/00/2009, Revision 0	Tetra Tech EC Inc	OCT-2010
Final 2009 (00/00/2009) Annual Biomonitoring Report	USFWS	OCT-2010
Landfill Wastewater Treatment System (LWTS) Quarterly Discharge Monitoring Report for Reporting Period 07/01/2010 to 09/30/2010	URS Corporation	NOV-2010
Final Enhanced Hazardous Waste Landfill (ELF) Final Cap Construction Completion Report (CCR), Revision 0 (Signed)	Tetra Tech EC Inc	DEC-2010
RMA Treatment Plant Effluent Water Quality Data Report, All Quarters FY2010 (Fiscal Year 00/00/2010)	RMA	DEC-2010

## **ROCKY MOUNTAIN ARSENAL**

Non-BRAC Excess Installation Restoration Program Site Descriptions

### Site ID: A-A Site Name: BASIN A NECK SYSTEM



Parcel: Retain (1000 acres)

Regulatory Driver: CERCLA RRSE: HIGH

Contaminants of Concern: Dense nonaqueous phase liquid (DNAPL), Metals, Pesticides, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA	197601	198410
SI	197601	198410
RI/FS	198410	199606
RD	198901	199612
IRA	198901	199007
RA(C)	198906	199612
RA(O)	199612	204309
RIP Date:	199612	
RC Date:	204309	

## SITE DESCRIPTION

The Basin A Neck System is an interior treatment facility consisting of a slurry wall, extraction wells, carbon adsorption treatment, and recharge trenches. Contaminated groundwater flow in the South Plants north plume and the Basin A plume occurs principally within saturated alluvium, with lesser flow through the underlying weathered bedrock; however, in the Section 36 bedrock ridge area, the water table generally lies below the alluvium and groundwater flows predominantly within weathered bedrock. Total groundwater flow through this area is about 20 gallons per minute (gpm). The major contaminants detected in the Basin A plume group are chloroform, organosulfur compounds related to mustard agent and herbicides, organophosphorus compounds related to pesticides, methylene chloride, DIMP, TCE, DBCP, arsenic, mercury and benzene. Carbon and air stripping are the primary treatment processes.

Operation of the Basin A Neck System includes a flow from the Section 36 Bedrock Ridge Groundwater Plume Extraction System of approximately 3.3 gpm and a flow from the Complex (Army) Disposal Trench-Extraction Trench of approximately 1.7 gpm. Modification to the Basin A Neck System began in 2009 and was completed in 2011 and will continue to operate in the future. These modifications allow for the operations of the long term Lime Basins dewatering flow, previously treated at the CERCLA Wastewater Treatment System.

In 2009, DNAPL was detected in two dewatering wells inside of the Lime Basins Slurry Wall. Costs incurred to address DNAPL are reflected under this site.

The final LTMP for groundwater and surface water was issued in March 2010. The groundwater treatment system will be operated until remedial objectives (ROD requirements) are met. The estimated cost includes operations until 2043; however, operations are expected to continue until state and federal regulatory requirements have been met.

### CLEANUP/EXIT STRATEGY

The initial LTMP for groundwater was issued in December 1999 and was replaced with a revised version, the 2010 LTMP for groundwater and surface water, in March 2010. The groundwater treatment system will be operated until remedial objectives

### Site ID: A-A Site Name: BASIN A NECK SYSTEM

(ROD requirements) are met (estimated cost includes operation until 2041, and includes plant maintenance/refurbishing costs every 10 years); however, operations are expected to continue until CSRGs are met.

#### Site ID: ELF Site Name: ENHANCED HAZARDOUS WASTE LANDFILL



Parcel: Retain (1000 acres)

Regulatory Driver: CERCLA RRSE: NOT EVALUATED

Phases	Start	End
PA	199612	199612
LTM	201006	204309
RIP Date:	N/A	
RC Date:	199612	

### SITE DESCRIPTION

The triple lined enhanced landfill cell is a 37-acre site located in the western portion of Section 25, just south of the double-lined HWL. The ELF was a keystone project during the middle and latter years of the RMA remedy. The facility permanently stores waste from the Basin F Wastepile (site FWASTEPILE) and Basin F Principal Threat Soils (site NCSA-3) projects in two separate cells. Design, construction, operations, and closure of the ELF is considered part of the remediation costs of these two sites. The ELF AEDB-R site was created to address the need for LTM.

The total designed capacity of the ELF is approximately 1.1 million bank cubic yards (bcy). At the conclusion of FY08, a total of 1,100,930 compacted cubic yards (ccy) of material had been placed in the ELF and all scheduled waste placement operations were complete. Cover construction activities began immediately following the completion of Operations activity. The ELF Cap construction project was completed in May 2010. The ELF Post-Closure Plan received CDPHE approval in August 2010, and acceptance from the other regulatory agencies by October 2010. The cover footprint is approximately 26.0 acres. The 2012 Annual covers Report for RCRA Caps, documenting both HWL and ELF Post-Closure activities for the period beginning May 2011 through April 2012 was issued in June 2012. The report included the 2011 HWL and ELF Post-Closure Groundwater Monitoring results as Appendices.

### CLEANUP/EXIT STRATEGY

The LTM will include cover inspection and maintenance, groundwater monitoring, leachate collection and treatment, leak detection, and periodic evaluation of vegetation. This site is subject to five-year reviews and will be retained by the Army. The Enhanced Landfill Construction was completed in May 2010 and the ELF Post-Closure Plan received CDPHE approval in August 2010 and TCH and USEPA acceptance in October 2010. LTM began in Oct 2010 (FY11) and will continue for a minimum of 30 years through at least FY41. The current LTM plan extends 30 years through FY43.

### Site ID: HWL Site Name: HAZARDOUS WASTE LANDFILL



Parcel: Retain (1000 acres)

Regulatory Driver: CERCLA RRSE: NOT EVALUATED

Phases	Start	End
PA	199612	199612
LTM	200911	204309
RIP Date:	N/A	
RC Date:	199612	

### SITE DESCRIPTION

The HWL is a 35-acre site located in the western portion of Section 25, just north of the ELF. It was the keystone project in the early and middle years of the RMA remedy. Nine separate projects were solely dependent upon the landfill availability to accept hazardous wastes, which are tracked in the on-site waste tracking database. An additional nine projects were dependent upon both the HWL and the Basin A consolidation area. In late FY06 the landfill reached maximum capacity; it holds a total of 1,799,826 ccy of material. In July 2006 the HWL closure plan was completed and was approved by the regulatory agencies in September that year. Construction of the RCRA cover is complete. The cover footprint is approximately 29.5 acres.

LTM includes cover inspection and maintenance, groundwater monitoring, leachate collection and treatment, leak detection, and periodic evaluation of vegetation.

This site was added to AEDB-R upon approval from USAEC because the landfill is expected to have LTM costs until state and federal regulatory requirements have been met. No other phases are associated with this site.

### CLEANUP/EXIT STRATEGY

LTM includes cover inspection and maintenance, groundwater monitoring, leachate collection and treatment, leak detection, and periodic evaluation of vegetation. This site is subject to five-year reviews and will be retained by the Army. LTM began at physical completion and will continue for a minimum of 30 years. LTM costs will be tracked under HWL.

### Site ID: ICS Site Name: INTEGRATED COVER SYSTEM



Parcel: Retain (1000 acres)

Regulatory Driver: CERCLA RRSE: NOT EVALUATED

Phases	Start	End
PA	199612	199612
LTM	201001	204309
RIP Date:	N/A	
RIP Date.	IN/A	

#### SITE DESCRIPTION

The ICS is a contigouous RCRA-equivalent soil cover that was the final remediation for five sites. These include CSA-1A, CSA-1C, NCSA-1A, NCSA-1B, and SPSA-1A.

Construction of the ICS Cover was completed in April 2010. The Final ICS CQA Certification Report was transmitted to the Regulatory Agencies in September 2010. The Final ICS CCR was transmitted to the Regulatory Agencies in September 2010.

Long-term maintenance of RCRA-Equivalent, two- and three-foot covers includes the inspection of three cover elements (soil cover, surface drainage system, and engineering and access controls); the monitoring of vegetation, percolation and groundwater; and routine maintenance and repairs. The purpose of LTM is to ensure the integrity of the cover systems. Although LTM will continue until state and regulatory requirements have been met, as indicated in the RCRA-Equivalent, Two-, and Three-Foot Covers Long-Term Care Plan, only 30 years have been included in the CTC estimate.

### CLEANUP/EXIT STRATEGY

Long-term maintenance of RCRA-Equivalent, two- and three-foot covers includes the inspection of three cover elements (soil cover, surface drainage system, and engineering and access controls); the monitoring of vegetation, percolation and groundwater; and routine maintenance and repairs. The purpose of LTM is to ensure the integrity of the cover systems.

This area will remain as an Army maintained area. As written in the RCRA-Equivalent, Two-, and Three-Foot Covers Long-Term Care Plan. The LTM began at physical completion and will continue for a minimum of 30 years.

#### Site ID: N-NP Site Name: NORTH BOUNDARY CONTAINMENT SYSTEM



Parcel: Retain (1000 acres)

#### Regulatory Driver: CERCLA RRSE: MEDIUM

Contaminants of Concern: Light non-aqueous phase liquids (LNAPL), Metals, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA	197601	198410
SI	197601	198410
RI/FS	198401	199510
RD	197801	199606
IRA	197801	198001
RA(C)	198001	199612
RA(O)	199612	204309
RIP Date:	199612	
RC Date:	204309	



The NBCS, located in Section 23 and 24, consists of extraction and recharge wells and trenches, a slurry wall, and a carbon adsorption system for removal of organics. A modification to the system uses ultraviolet oxidation, following the carbon adsorption treatment, to treat for NDMA. Other contaminants include VOCs, organosulfur compounds related to mustard agent and herbicides, DIMP, organophosphorus compounds related to pesticides, arsenic, and the fluoride anions. Chloride and sulfates are expected to attenuate naturally.

In January 2008, as part of an ESD that eliminated the need for a soil cover in NPSA-6, the requirement for ongoing evaluation and characterization of the presence of LNAPL in several monitoring locations were transferred to this site to be more appropriately associated with the groundwater remedy and this plume. In order to minimize the spread of contamination to the extent practicable, a product recovery system was designed and installed in FY09. Monitoring of the recovery and monitoring wells continued through April 2010 which marked the completion of one year of monitoring and by agreement, the requirement to prepare an Operations Evaluation Report for review and comment by the Regulatory Agencies. The draft North Plants LNAPL Operations Evaluation Report was submitted to the Regulatory Agencies in June 2010. The draft report recommended the continued monitoring of the system for LNAPL for an additional year. At the end of the additional year of monitoring another evaluation report was prepared and a final report was issued in February 2012. Future actions include an agreement to continue quarterly monitoring of water levels and LNAPL thickness through the end of the five-year review period ending in September 2014.

Operation of the NBCS continues within effluent parameters at approximately 198 gpm. The final long-term monitoring plan (LTMP) for groundwater and surface water was issued in March 2010. The groundwater treatment system will be operated until remedial objectives (ROD requirements) are met. The estimated cost includes operation until 2043, and includes plant maintenance / refurbishing costs. However, operations are expected to continue until state and federal regulatory requirements have been met. Additionally, five years of LTM is expected after the treatment system is turned off.

### CLEANUP/EXIT STRATEGY

Monitoring will continue for LNAPL in the recovery and monitoring wells. If sufficient accumulation of LNAPL has been observed in the recovery wells during the additional year of monitoring, bail down tests will be conducted to predict the potential yield of LNAPL. Following the completion of the bail down test, LNAPL recovery pumps will be installed in the recovery wells and operation will begin active removal of LNAPL. The monitoring data, results of the bail down tests and operations/maintenance data will be compiled in a Pilot System Report that will be submitted to the regulatory agencies for review. Contained within the report will be

### Site ID: N-NP Site Name: NORTH BOUNDARY CONTAINMENT SYSTEM

recommendations for remedial action, if any, that could include the installation of additional LNAPL recovery wells.

Operation of the NBCS continues within effluent parameters at approximately 198 gpm. The initial LTMP for groundwater was issued in December 1999 and was replaced with a revised version, the 2010 LTMP for groundwater and surface water, in March 2010. The groundwater treatment system will be operated until remedial objectives (ROD requirements) are met (estimated cost includes operation until 2041 and refurbishing every 10 years); however, operations are expected to continue until CSRGs are met.

#### Site ID: NCSA-3 Site Name: SECONDARY BASINS - FORMER BASIN F



Parcel: Retain (1000 acres)

#### Regulatory Driver: CERCLA RRSE: LOW

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

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	197601	198410
SI	197601	198410
RI/FS	198401	199606
RD	199606	199612
IRA	199301	199507
RA(C)	200201	201101
LTM	201101	204309
RIP Date:	N/A	
RC Date:	201101	

## SITE DESCRIPTION

This site project addresses principal threat soil within the surficial soil - Former Basin F, a surface impoundment/lagoon, which is a subgroup of the Basin F medium group. The site consisted of the former basin area including the area beneath the Basin F wastepile. Basin F received wastewater through the chemical sewer system and the site contained elevated levels of salts. From 1993 to 1995 the Basin F IRA was conducted to remove Basin F liquid and sludge, the asphalt liner of the basin, and highly contaminated soil from beneath the liner. The soil, sludge, and liner material were placed in the Basin F wastepile during the IRA. The existing site contained contaminated soil that was not removed during the IRA. A two to five-foot thick soil cover (at an average thickness of three feet) and up to ten feet of gradefill were placed over the Former Basin F following construction of the wastepile. At the conclusion of the IRA, the soil cover was re-vegetated.

The Former Basin F contained soil contaminated by wastewater that infiltrated during Basin F operations. The human health criteria were exceeded by average and maximum concentrations of pesticides and chloroacetic acid. Concentrations of aldrin and dieldrin also exceeded the principal threat criteria in specific areas. The human health COCs were found from zero to ten feet below ground surface, but were primarily detected in the zero to five-foot depth interval. Residual contamination existed from below ten feet to the water table (approximately 40 feet).

In October 2005, a ROD amendment changed the RA from solidification to excavation of soil and placement in the ELF. Excavation of principal threat soils and placement in the ELF began in June 2007 and was completed in November that year. A total of 212,204 bcy of principal threat soil were removed from Basin F and disposed of in the ELF. Residual contamination that exists remains in place and was covered with a RCRA equivalent cover system performed under NCSA-4B. Short-term monitoring and maintenance of the RCRA-Equivalent Cover began in April 2010 after completion of the first season of irrigation (completed in September 2009) and final inspection activities (completed in March 2010).

A draft of the ESD for the Basin F/Basin F Exterior was submitted in September 2010. The CCR for the Basin F RCRA-Equivalent Cover was submitted in August 2010. The closure certification report for the entire Basin F Remediation project was submitted in August 2010 and the regulatory agencies approval was received on Sept. 29, 2010.

### Site ID: NCSA-3 Site Name: SECONDARY BASINS - FORMER BASIN F

#### **CLEANUP/EXIT STRATEGY**

The LTM will include cover inspection and maintenance, groundwater monitoring, infiltration measurements, and periodic evaluation of vegetation. This site is subject to five-year reviews and will be retained by the Army. The LTM began at physical completion and will continue for a minimum of 30 years.

#### Site ID: NW-A Site Name: NORTHWEST BOUNDARY CONTAINMENT SYST



Parcel: Retain (1000 acres)

Regulatory Driver: CERCLA RRSE: HIGH

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

Media of Concern: Groundwater

Phases	Start	End
PA	197601	198410
SI	197601	198410
RI/FS	198401	199510
RD	198201	199606
IRA	198705	199307
RA(C)	198301	199612
RA(O)	199612	203709
LTM	203710	204309
RIP Date:	199612	
RC Date:	203709	



The Northwest Boundary Containment System (NW-A), located in Sections 22 and 27, consists of extraction and recharge wells and trenches, a slurry wall, and carbon adsorption for removal of organics. Contaminants for which CSRGs have been established in the ROD include volatile halogenated organics, DIMP, NDMA, organochlorine pesticides, and arsenic.

Operation of the NBCS continues within effluent parameters at approximately 825 gpm. The final LTMP for Groundwater and Surface Water was issued in March 2010.

### **CLEANUP/EXIT STRATEGY**

The groundwater treatment system will be operated until remedial objectives (ROD requirements) are met. Estimated cost includes operation until 2037, and includes plant maintenance / refurbishing costs. Additionally, five years of post-operations LTM is expected after the treatment system is turned off, FY38-42. After the post-operations monitoring, the NBCS will be scheduled for demolition in 2043.

### Site ID: OU-N Site Name: NORTHERN PATHWAY



Parcel: Retain (1000 acres)

Regulatory Driver: CERCLA RRSE: HIGH

Contaminants of Concern: Chemical weapon munitions (CWM)/Chemical agent, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA	197601	198410
SI	197601	198410
RI/FS	198401	199512
RD	198901	199606
IRA	198705	199310
RA(C)	199310	199612
RA(O)	199612	202709
LTM	202710	203209
RIP Date:	199612	
RC Date:	202709	

### SITE DESCRIPTION

The Off-Post Groundwater Intercept and Treatment System was designed to extract and treat contaminated alluvial groundwater from the First Creek (site OU-NW) and Northern Pathways (site OU-N) downgradient of the NBCS, and return treated water to the alluvial aquifer. The system consists of a network of upgradient extraction wells, located in two separate well fields, an activated carbon adsorption treatment system for removal of organics, and a network of recharge wells or trenches. Contaminants for which CSRGs have been established in the Implementation Plant for the off-post OU include volatile halogenated organics, volatile hydrocarbon compounds, volatile aromatic organics, organosulfur compounds, DIMP, organophosphorus pesticides, organochlorine pesticides, DBCP, NDMA, arsenic, and the anions fluoride, chloride, and sulfate. The Army and Shell will continue to operate the system until the shutdown criteria identified in the implementation plan for the off-post OU have been met.

### CLEANUP/EXIT STRATEGY

Operation of the off-post system continues within effluent parameters, designated by the off-post ROD containment system remediation goal listing, at approximately 275 gpm. The final LTMP for groundwater and surface water was issued in March 2010.

The groundwater treatment system will be operated until remedial objectives (ROD requirements) are met. Cost assumes operation for site OU-N Through FY 27. LTM includes groundwater monitoring and a five-year review to be completed in 2032.

### Site ID: OU-NW Site Name: FIRST CREEK



Parcel: Retain (1000 acres)

Regulatory Driver: CERCLA RRSE: HIGH

Contaminants of Concern: Chemical weapon munitions (CWM)/Chemical agent, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA	197601	198410
SI	197601	198410
RI/FS	198401	199512
RD	198901	199606
RA(C)	199101	199612
RA(O)	199612	203309
LTM	203310	203909
RIP Date:	199612	
RC Date:	203309	

### SITE DESCRIPTION

The Off-Post Groundwater Intercept and Treatment System was designed to extract and treat contaminated alluvial groundwater from the First Creek (site OU-NW) and Northern Pathways (site OU-N) downgradient of the NBCS, and return treated water to the alluvial aquifer. The system consists of a network of upgradient extraction wells, located in two separate well fields, an activated carbon adsorption treatment system for removal of organics, and a network of recharge wells or trenches. Contaminants for which CSRGs have been established in the Implementation Plant for the off-post OU include volatile halogenated organics, volatile hydrocarbon compounds, volatile aromatic organics, organosulfur compounds, DIMP, organophosphorus pesticides, organochlorine pesticides, DBCP, NDMA, arsenic, and the anions fluoride, chloride, and sulfate. The Army and Shell will continue to operate the system until the shutdown criteria identified in the Implementation Plan for the off-post OU have been met.

### CLEANUP/EXIT STRATEGY

Operation of the off-post system continues within effluent parameters, designated by the off-post ROD containment system remediation goal listing, at approximately 275 gpm. The final LTMP for groundwater and surface water was issued in March 2010. The groundwater treatment system will be operated until remedial objectives (ROD requirements) are met. Cost assumes operation for site OU-NW through FY 33. LTM includes groundwater monitoring, a five-year review and anticipated demolition of the water treatment facility in FY39.

### Site ID: SWP Site Name: SITE-WIDE PROGRAM



Parcel: Retain (1000 acres)

Regulatory Driver: CERCLA RRSE: NOT EVALUATED

Phases	Start	End
PA	200502	200502
LTM	200503	204309
RIP Date:	N/A	
RC Date:	200503	



This phase of the project addresses the remedy and operations support projects. The Site-Wide Program (SWP) site is used to plan and program funding for all RMA non AEDB-R specific remediation support and oversight programs that require the use of ER,A funds and aid in the completion of the remedy. Projects under SWP are defined in the following four main categories:

- A. Field / Specific Projects
- B. Facility Maintenance and Operations
- C. Data Management and Information Services
- D. Operations oversight and Management

Activities included under each of these categories is as follows:

A. Field / Specific Projects: Biota Monitoring Support from USFWS

This program is provided through the USFWS and provides support to the Remedy Cleanup program including wildlife and aquatic health monitoring per the RMAs Contaminant Biomonitoring Plan

Site-Wide Well Abandonment

The Well Abandonment project includes maintenance of existing Site-Wide monitoring wells and abandonment of wells that will not be used in long-term groundwater monitoring. On an annual basis, a listing of all remaining wells are reviewed and all wells not needed for monitoring purposes are included in a list of wells available for closure. Wells from this list will be closed based on available funding.

Land Use Controls

Field monitoring and record keeping supporting annual land use control monitoring report and development of exceedance maps for:

**Containment System Remediation Goals** 

**Operations Waste Management** 

Collection, Delivery, and Tracking wastes generated from ongoing RA(O) and O&M activities.

**Operations and Maintenance Contract Management** 

### Site ID: SWP Site Name: SITE-WIDE PROGRAM

Overall Administrative and Management activities including OH charges, vehicles and maintenance, fee for the Operations and Maintenance Contract (OMC).

B. Facility Maintenance and Operations

**Facility Operations** 

Water Systems (potabale, non-potable, and sewer) operations maintenance and monitoring. Standard facility operations and service orders, including site maintenance, ground control, building HVAC, plumbing, electrical service and repairs.

#### C. Data Management

Data Management and Information Services

Includes site information services including communications systems (phones, PBX) and maintenance, long distance, cell phones, Blackberries, Defense printing costs. Also includes Data Management and Administrative Records Contracts.

D. Operations Oversight

Includes costs for regulatory oversight, Army and Shell Site Management Labor, RDECOM contracting support, Utilities costs.

#### CLEANUP/EXIT STRATEGY

The SWP will support all RA(O) and LTM sites. Some costs contained within this site will continue throughout the LTM phase.

### Site ID: W-MP Site Name: WESTERN/MOTOR POOL PLUME



Parcel: Retain (1000 acres)

Regulatory Driver: CERCLA RRSE: MEDIUM

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA	197601	198410
SI	197601	198410
RI/FS	198401	199510
RD	199003	199606
IRA	198809	199204
RA(C)	199101	199606
RA(O)	199204	201409
LTM	201410	202009
RIP Date:	199606	
RC Date:	201409	



The Irondale System, located in Sections 33 and 28, consisted of extraction and recharge wells and carbon adsorption for removal of organic contaminants. In addition, extraction systems located in Sections 3 and 4 removed contaminants from the rail classification yard and motor pool plumes. Contaminants for which CSRGs have been established in the ROD include TCE and DBCP.

The original Irondale Treatment plant was replaced by skid mounted adsorber units in FY01 and the original plant was demolished in FY02. The skid mounted adsorber units treat groundwater from two wells from the railyard plume and operate at approximately 120 gallons per minute (gpm).



The initial LTMP for Groundwater was issued in December 1999 and was replaced with a revised version, the 2010 LTMP for Groundwater and Surface Water, in March 2010. The skid mounted adsorber units will be operated until remedial objectives in the ROD are met (expected in 2014). LTM will include five years of groundwater monitoring and a five-year review. Facility demolition is expected in FY20.

Site ID	Site Name	NFA Date	Documentation
A-PE	AGENT PROCESS EQUIPT REMOVAL	199712	Interim Response Action Summary Report. All Required Cleanup Completed
A-S36BR	BASIN A/SEC 36 BEDROCK RIDGE PLUMES	200609	This site was RC in 200609 in order to consolidate funds for the Basin A Neck System under site A-A
A-SPN	BASIN A/SOUTH PLANTS NO. PLUME	200609	This site was RC in 200609 in order to consolidate funds for the Basin A Neck System under site A-A
AS	ASBESTOS REMOVAL	199712	Interim Response Action Summary Report Asbestos Remediation. All Required Cleanup Completed
AT	ABOVE GROUND STORAGE TANKS IRA	199606	CCR Chemical Process Related Activities Free Standing Tank Removal. All Required Cleanup Completed
AW	ABANDONED WELLS CLOSURE IRA	199606	Interim Response Action Summary Report Closure of Abandoned Wells at RMA. All Required Cleanup Completed
B1727	B1727 SUMP IRA-WASTEWATER	199606	Interim Response Action Summary Report Building 1727 Sump Liquid. All Required Cleanup Completed
CERCLA-LW	CERCLA LIQUID WWT PLANT	201008	CCR being prepared
CSA-1A	DISPOSAL TRENCHES-SHELL TRENCHES	201009	Final Integrated Cover System (ICS) Project (Basin A, Complex Army Trenches, Lime Basins, Shell Disposal Trenches, South Plants) Subgrade and Cover Construction Completion Report (CCR) - Part 1, Revision 0
CSA-1B	UNDIFFERENTIATED-SEC. 36 BALANCE	200209	Part of Site NCSA-1G remediation. All Required Cleanup Completed
CSA-1C	DISPOSAL TRENCHES - COMPLEX TRENCHES	201009	Final Integrated Cover System (ICS) Project (Basin A, Complex Army Trenches, Lime Basins, Shell Disposal Trenches, South Plants) Subgrade and Cover Construction Completion Report (CCR) - Part 1, Revision 0
CSA-1D	SANITARY LANDFILLS-SAN LANDFILL/INCIN834	200307	Section 36 Existing Sanitary Landfills Remediation CCR. All Required Cleanup Completed
CSA-2A	UNDIFFERENTIATED-SEC. 36 BALANCE	200209	Burial Trenches Soil CCR. All Required Cleanup Completed
CSA-2B	DITCHES/DRAINAGE-SEC 36 METAL DEBRIS	200209	Part of Site NCSA-1G remediation - All Required Cleanup Completed
CSA-2C	MUNITIONS TESTING-INCEND MUNITIONS TS	200009	Munitions Testing Soil Remediation CCR - All Required Cleanup Completed
CSA-2D	MUNITIONS TESTING-NN3601 INCINERATOR CON	200307	Section 36 Existing Sanitary Landfills Remediation CCR - All Required Cleanup Completed
CSA-3	SEWER SYSTEMS - CHEM/BASINS A TO F	200209	Part of Site NCSA-1G remediation - All Required Cleanup Completed

Site ID	Site Name	NFA Date	Documentation
CSA-4	UNDIFFERENTIATED-SEC. 36 BALANCE	200209	Part of Site NCSA-1G remediation - All Required Cleanup Completed
ESA-1A	MUNITIONS TESTING-SURFACE BURN 1	200009	Munitions Testing Soil Remediation CCR. All Required Cleanup Completed
ESA-1B	MUNITIONS TESTING-SURFACE BURN 2	200009	Munitions Testing Soil Remediation CCR. All Required Cleanup Completed
ESA-1C	MUNITIONS TESTING-SURFACE BURN 3	200009	Munitions Testing Soil Remediation CCR. All Required Cleanup Completed
ESA-1D	MUNITIONS TESTING - SURFACE BURN 4	200009	Munitions Testing Soil Remediation CCR. All Required Cleanup Completed
ESA-2A	UNDIFFERENTIATED-BURIAL TRENCHES/BURN PT	200009	Burial Trenches Soil Remediation Project CCR. All Required Cleanup Completed
ESA-2B	SANITARY LANDFILLS-SANIT. LANDFILL	200408	ROD - 199606. All Required Cleanup Completed
ESA-2C	UNDIFFERETIATED-UXO OPEN TRENCHES	200009	Burial Trenches soil CCR Part II. All Required Cleanup Completed
ESA-3A	AGENT TESTING-STORAGE YD.	199909	CCR Toxic Storage Yards Soil Remediation Project. All Required Cleanup Completed
ESA-3B	AGENT TESTING-OLD TSY	199909	CCR Toxic Storage Yards Soil Remediation Project. All Required Cleanup Completed
ESA-3C	AGENT TESTING-NEW TSY	199606	ROD - 199606. Study Complete NFA
ESA-3D	AGENT TESTING-TOXIC YARD PLOTS	199606	ROD - 199606. Study Complete NFA
ESA-3E	AGENT TESTING-DEMIL PAD	199606	ROD - 199606. Study Complete NFA
ESA-3F	AGENT TESTING - RR/DOCK SPILL SITE	199606	ROD - 199606. Study Complete NFA
ESA-3G	AGENT TESTING - DRUM STORAGE/SPILL SITE	199909	CCR Toxic Storage Yards Soil Remediation Project. All Required Cleanup Completed
ESA-3H	AGENT TESTING - STORAGE AREA/SPILL SITE	199606	ROD - 199606. Study Complete NFA
ESA-3I	AGENT TESTING - TOXIC STORAGE PLOTSDITCH	199606	ROD - 199606. Study Complete NFA
ESA-3J	TOXIC STORAGE YD FENCE SPRAYING	199510	ROD - 199606. Study Complete NFA
ESA-3K	TRASH PIT - SO. OF PLOT 8	199510	ROD - 199606. Study Complete NFA
ESA-4A	MUNITIONS TESTING - IMPACT/UXO	200009	ROD - 199606. Study Complete NFA
ESA-4B	MUNITIONS TESTING - DRMO AREA	200009	Munitions Testing - Soil Remediation. All Required Cleanup Completed
ESA-4C	TRENCH/MOVED-UNKNOWN USE/SCRAP METAL	199510	ROD - 199606. Study Complete NFA
ESA-5	UNDIFFERENTIATED - FUZE REMOVAL AREA	199510	ROD - 199606. Study Complete NFA

Site ID	Site Name	NFA Date	Documentation
ESA-6A	TC STORAGE AREA - HEAVY METALS DETECTION	199510	ROD - 199606. Study Complete
ESA-6B	UNDIFFERENTIATED-TRENCH/DETECTION F2CA	199510	ROD - 199606. Study Complete NFA
ESA-6C	BURIED SEDIMENTS/DITCHES - AS DETECTION	199510	ROD - 199606. Study Complete NFA
ESA-6D	HEXACHLOROBENZENE DETECTION	199510	ROD - 199606. Study Complete NFA
FD-DUST	FUGITIVE DUST IRA	199606	Interim Response Action Summary Report Fugitive Dust Control. All Required Cleanup Completed
FWASTEPILE	BASIN F WASTEPILE	201008	Final Construction Quality Assurance (CQA) for the Basin F Closure (Closure of the Basin F Wastepile and Closure of the Basin F Surface Impoundment), Revision 0
N-CF	NORTH/BASINS C & F PLUME	200609	This site was RC in 200609 in order to consolidate funds for the North Boundary System under site N-NP.
NA-PE	NON-AGENT PROCESS EQUIPT REMOVAL	199606	Interim Response Action Final Report - All Required Cleanup Completed
NCSA-1A	BASIN A	201009	Final Integrated Cover System (ICS) Project (Basin A, Complex Army Trenches, Lime Basins, Shell Disposal Trenches, South Plants) Subgrade and Cover Construction Completion Report (CCR) - Part 1, Revision 0
NCSA-1B	LIME BASINS-SETTLING BASINS	201009	Final Integrated Cover System (ICS) Project (Basin A, Complex Army Trenches, Lime Basins, Shell Disposal Trenches, South Plants) Subgrade and Cover Construction Completion Report (CCR) - Part 1, Revision 0
NCSA-1C	BURIED SEDIMENTS/DITCHES-NO.PLANTS DITCH	200209	Section 35 Soil Remediation Project CCR - All Required Cleanup Completed
NCSA-1D	DITCHES/DRAINAGE - RUNOFF STORAGE	200209	Part of Site NCSA-1G remediation - All Required Cleanup Completed
NCSA-1E	BURN SITE-SO. PLTS. OPERATIONS	200209	Part of Site NCSA-1A remediation. All Required Cleanup Completed
NCSA-1F	BURIED SEDIMENT/DITCHES-SO. PLTS DITCHES	200209	Part of Site NCSA-1G remediation. All Required Cleanup Completed
NCSA-1G	SECTION 36 BAL. OF AREAS SOIL REMED	200606	Section 36 Balance of Areas Soil Remediation Project Part II CCR- Site Grading 200706
NCSA-2A	SECONDARY BASINS-BASIN C	200303	Secondary Basins Soil Remediation CCR. All Required Cleanup Completed
NCSA-2B	SECONDARY BASINS-BASIN D	200209	Secondary Basins Soil Remediation CCR. All Required Cleanup Completed

Site ID	Site Name	NFA Date	Documentation
NCSA-2C	SECONDARY BASINS-BASIN E	199606	ROD - 199606. Study Complete
NCSA-2D	DITCHES/DRAINAGE-B TO D/B TO C DITCHES	200209	Secondary Basins Soil Remediation CCR. All Required Cleanup Completed
NCSA-4A	SECONDARY BASINS-DEEP WELL	200209	Part of Site NCSA-4B remediation. All Required Cleanup Completed
NCSA-4B	SECONDARY BASINS-BASIN F EXTERIOR	201009	Final Basin F/Basin F Exterior Remediation Project Part 2 (Basin F Cover Project) Construction Completion Report (CCR) - Part 1, Revision 0 (Signed)
NCSA-5A	SECONDARY BASINS-BASIN B	200303	Section 35 Soil Remediation Project CCR. All Required Cleanup Completed
NCSA-5B	BURIED SEDIMENTS/DITCHES-A,B,C,D DITCHES	200209	Section 35 Soil Remediation Project CCR. All Required Cleanup Completed
NCSA-5C	BURIED SEDIMENTS/DITCHES-SAND CK. LATERL	200209	Secondary Basins Soil Remediation CCR & Section 35 Soil Remediation Project CCR. All Required Cleanup Completed
NCSA-5D	DITCHES/DRAINAGE-SURFACE CANAL/BASIN A	200209	Section 35 Soil Remediation Project CCR. All Required Cleanup Completed
NCSA-6A	SEWER SYSTEMS-SO. PLTS/BASIN F (CHEM.)	200011	Section 35 Soil Remediation Project CCR. All Required Cleanup Completed
NCSA-6B	SEWER SYSTEMS-NO. PLTS/BASIN F(CHEM)	200209	Part of Site NCSA-1G remediation. All Required Cleanup Completed
NCSA-7	LAKE SEDIMENTS-NORTH BDRY BOG	199510	ROD - 199606. Study Complete NFA
NCSA-8A	SEWER SYSTEMS-SAN. SEWER TO STP	200901	Sanitary Sewer Manhole Plugging Project - Phase 2, Construction Completion Report
NCSA-8B	DITCHES/DRAINAGE-STP AREA	199910	Miscellaneous Northern Tier Soil Remediation Project CCR. All Required Cleanup Completed
NCSA-8C	DITCHES/DRAINAGE-HG DETECTION/LIFT STA#2	199510	ROD - 199606. Study Complete NFA
NCSA-9A	INVESTIGATED AREA-DIMP DETECTION	199510	ROD - 199606. Study Complete NFA
NCSA-9B	INVESTIGATED AREA-CD DETECTION	199510	ROD - 199606. Study Complete NFA
NCSA-9C	INVESTIGATED AREA-CD DETECTION	199510	ROD - 199606. Study Complete NFA
NCSA-9D	INVESTIGATED AREA-CD DETECTION	199510	ROD - 199606. Study Complete NFA
NCSA-9E	INVESTIGATED AREA-ZINC DETECTION	199510	ROD - 199606. Study Complete NFA
NCSA-9F	INVESTIGATED AREA,ZN/CU DETECTION	199510	ROD - 199606. Study Complete NFA
NCSA-9G	INVESTIGATED AREA-METHYLENE CHLORIDE DET	199510	ROD - 199606. Study Complete NFA
NCSA-9H	INVESTIGATED AREA-CD DETECTION	199510	ROD - 199606. Study Complete NFA

Site ID	Site Name	NFA Date	Documentation
NCSA-9I	INVESTIGATED AREA - BUTOXYETHANOL DETECT	199510	ROD - 199606. Study Complete
NCSA-9J	INVESTIGATED AREA-HG DETECTION	199510	ROD - 199606. Study Complete NFA
NCSA-9K	INVESTIGATED-TRICHLOROPROPENE DETECTION	199510	ROD - 199606. Study Complete NFA
NCSA-9L	INVESTIGATED AREA-AS DETECTION	199510	ROD - 199606. Study Complete NFA
NCSA-9M	INVESTIGATED AREA-ZN DETECTION	199510	ROD - 199606. Study Complete NFA
NCSA-9N	INVESTIGATED AREA-TRICHLOROPROPENE DETEC	199510	ROD - 199606. Study Complete NFA
NCSA-9O	INVESTIGATED AREA-AS DETECTION	199510	ROD - 199606. Study Complete NFA
NCSA-9P	INVESTIGATED AREA-AS,HG,CU,ZN DETECTION	199510	ROD - 199606. Study Complete NFA
NCSA-9Q	INVESTIGATED AREA-HQ DETECTION	199510	ROD - 199606. Study Complete NFA
NCSA-9R		199510	ROD - 199606. Study Complete NFA
NCSA-9S	INVESTIGATED AREA-HG DETECTION	199510	ROD - 199606. Study Complete NFA
NFU-A	STRUCTURES - NO FUTURE USE, AGENT	200209	South Plants Structure Demolitions & Removal Project Phase I CCR. All Required Cleanup Completed
NFU-MNP	STRUCTURES-NO FUTURE USE,MFG,NON-PROCESS	201107	CCR approved in July 2011, Remedy complete date 201107
NFU-MP	STRUCTURES - NO FUTURE USE,MFG,PROCESS	200209	North Plants Structure Demolitions & Removal & Destruction of Equipments in the GB. All Required Cleanup Completed
NPSA-1	SEWER SYSTEMS - CHEMICAL SEWERS	200209	North Plants Structure Demolitions & Removal & Destruction of Equipments in the GB. All Required Cleanup Completed
NPSA-2	TANK FARM 1403 AREA	199510	ROD - 199606. All Required Cleanup Completed
NPSA-3	AGENT TESTING-GB MANUFACTURING AREA	200209	North Plants Structure Demolitions & Removal & Destruction of Equipments in the GB. All Required Cleanup Completed
NPSA-4	BURIED SED/DITCHES-FUZE & DETONATOR MAG.	199910	Miscellaneous Northern Tier Soil Remediation Project CCR. All Required Cleanup Completed
NPSA-5	AGENT TESTING-SPECIAL WEAPONS PLANT	200209	North Plants Structure Demolitions & Removal & Destruction of Equipments in the GB. All Required Cleanup Completed
NPSA-6	NORTH PLANT SOIL REMEDIATION	200808	Final Explanation of Significant Differences (ESD) for North Plants Soil Remediation Project, Revision ( (Signed).
NPSA-7	SURFACE SPILL AREA	199606	ROD - 199606. All Required Cleanup Completed
NPSA-8A	SURFACE DRAINAGE AREA	199510	ROD - 199606. All Required Cleanup Completed

Site ID	Site Name	NFA Date	Documentation
NPSA-8B	SURFACE DRAINAGE AREA	199606	ROD - 199606. All Required Cleanup Completed
NPSA-8C	SURFACE DRAINAGE AREA	200209	North Plants Structure Demolitions & Removal & Destruction of Equipments in the GB. All Required Cleanup Completed
NPSA-9A	INVESTIGATED AREA-AROMATIC DETECTION	199510	ROD - 199606. All Required Cleanup Completed
NPSA-9B	INVESTIGATED AREA-CHROMIUM DETECTION	199510	ROD - 199606. All Required Cleanup Completed
NPSA-9C	INVESTIGATED AREA-ZINC DETECTION	199510	ROD - 199606. All Required Cleanup Completed
NPSA-9D	INVESTIGATED AREA-BENZENE/ZN DETECTION	199510	ROD - 199606. All Required Cleanup Completed
NPSA-9E	INVESTIGATED AREA-DETECTION ALONG RR TRK	199510	ROD - 199606. All Required Cleanup Completed
NPSA-9F	INVESTIGATED AREA-ARSENIC DETECTION	200209	North Plants Structure Demolitions & Removal & Destruction of Equipments in the GB. All Required Cleanup Completed
NW-SC	NORTHWEST/SAND CREEK LATERAL PLUMES	200609	This site was RC in 200609 in order to consolidate funds for the Northwest Boundary Containment System under site NW-A.
PCB-STRUC.	PCB REMOVAL	199606	Interim Response Action Summary Report Element Two PCBs Final. All Required Cleanup Completed
S-SPN	SOUTH PLANTS/SO. PLANTS NORTH PLUME	199606	ROD - 199606. All Required Cleanup Completed
S-SPSE	SOUTH PLANTS/SO. PLANTS SE PLUME	199510	ROD - 199606. All Required Cleanup Completed
SANSEWER	SANITARY SEWER IRA	199606	RMA Interim Response Action Summary Report Sanitary Sewers. All Required Cleanup Completed
SP-SPSW	SOUTH PLANTS/SO. PLANTS SW PLUME	199510	ROD - 199606. All Required Cleanup Completed
SP-STF	SOUTH PLANTS/SO. TANK FARM PLUME	199606	Interim Response Action Summary Report South Tank Farm Plume Final
SPSA-10	SEWER SYSTEMS-CHEM. SEWER	200109	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-11	SEWER SYSTEMS-SANITARY	199802	Sanitary and Chemical Sewer Plugging Project CCR. All Required Cleanup Completed
SPSA-12A	SOUTH TANKS BALANCE-AERATION BASIN	200209	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-12B	SOUTH PLANTS BALANCE-SEDIMENT POND	200209	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-12C	SEWER SYSTEMS-PROCESS WATER	199802	Sanitary and Chemical Sewer Plugging Project CCR. All Required

Site ID	Site Name	NFA Date	Documentation
			Cleanup Completed
SPSA-1A	SOUTH PLANTS BALANCE CENTRAL PROCESSING	201009	Final Integrated Cover System (ICS) Project (Basin A, Complex Army Trenches, Lime Basins, Shell Disposal Trenches, South Plants) Subgrade and Cover Construction Completion Report (CCR) - Part 1, Revision 0
SPSA-1B	SOUTH PLANTS BALANCE UNKNOWN MOUNDS	200209	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-1C	SOUTH PLANTS BALANCE-LIME PITS	200209	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-1D	SOUTH PLANTS-DRAINAGE DITCHES	200209	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-1E	LIME BASINS - M1 PITS	200109	ROD - 199606. All Required Cleanup Completed
SPSA-1F	DISPOSAL TRENCHES-HEXA BARRELS	200406	Hex Pit Soil Remediation (Redesign) CCR. All Required Cleanup Completed
SPSA-1G	SOUTH PLANTS BALANCE-MISCELLANEOUS	200109	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-2A	SOUTH PLANTS-SO. TANK FARM	200209	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-2B	SOUTH PLANTS-OPEN STORAGE AREA	200209	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-2C	SOUTH PLANTS BALANCE-SALVAGE YARD	200209	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-2D	SOUTH PLANTS-DRAINAGE DITCHES	200209	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-2E	SOUTH PLANTS BALANCE-SURFACE DEPOSITION	200209	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-3A	SOUTH PLANTS-DRAINAGE DITCHES	200109	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-3B	SOUTH PLANTS BALANCE-STORAGE PAD	200209	South Plants Balance of Areas & Central Processing Area Soil

Site ID	Site Name	NFA Date	Documentation
			Remediation Phase I CCR. All Required Cleanup Completed
SPSA-3C	SOUTH PLANTS BALANCE-TANK STORAGE AREA	200209	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-3D	SOUTH PLANTS BALANCE-TANK STORAGE AREA	200209	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-3E	SOUTH PLANTS BALANCE-MISCELLANEOUS	200109	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-4A	SOUTH PLANTS-DRAINAGE DITCHES	200209	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-4B	SOUTH PLANTS BALANCE-MISCELLANEOUS	200109	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-5A	SOUTH PLANTS-DRAINAGE DITCHES	200209	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-5B	SOUTH TANKS BALANCE-MISCELLANEOUS	200109	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-6	HYDRAZINE FUEL BLENDING/STORAGE FACILITY	200209	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-7A	BALANCE SPSA/SURFACE CONTAMINATION	200209	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-7B	SOUTH PLANTS BALANCE-DEPRESSION	200209	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-7C	SOUTH PLANTS BALANCE-MISCELL/SURF. CONTM	200209	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-8A	SOUTH PLANTS BALANCE-SANITARY LANDFILL	200109	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-8B	SOUTH PLANTS-DRAINAGE DITCHES	200109	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-8C	SPSA8 BALANCE/SURFACE CONTAMINATION	200209	South Plants Balance of Areas & Central Processing Area Soil

Site ID	Site Name	NFA Date	Documentation
			Remediation Phase I CCR. All Required Cleanup Completed
SPSA-9A	SOUTH PLANTS-DRAINAGE DITCHES	200109	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SPSA-9B	SOUTH PLANTS BALANCE-MISCELL/SURF. CONTM	200109	South Plants Balance of Areas & Central Processing Area Soil Remediation Phase I CCR. All Required Cleanup Completed
SSA-1A	E. UPPER DERBY LAKE	199510	ROD - 199606. All Required Cleanup Completed
SSA-1B	LAKE SEDIMENTS - UPPER DERBY LAKE	199909	ROD - 199606. All Required Cleanup Completed
SSA-1C	LAKE SEDIMENTS - LOWER DERBY LAKE	199909	ROD - 199606. All Required Cleanup Completed
SSA-1D	ROD/GUN CLUB POND	199510	ROD - 199606. All Required Cleanup Completed
SSA-1E	LAKE SEDIMENTS - LAKE LADORA	199510	ROD - 199606. All Required Cleanup Completed
SSA-1F	LAKE MARY	199510	ROD - 199606. All Required Cleanup Completed
SSA-2A	DITCHES/DRAINAGE - PROCESS DITCH	199912	Miscellaneous Southern Tier Soil Remediation CCR. All Required Cleanup Completed
SSA-2B	BURIED SEDIMENTS/DITCHES-SAND CK. LATERL	199912	Miscellaneous Southern Tier Soil Remediation CCR. All Required Cleanup Completed
SSA-2C	DITCHES/DRAINAGE-LAKES OVERFLOW BASIN	199912	Miscellaneous Southern Tier Soil Remediation CCR. All Required Cleanup Completed
SSA-3A	BURIED SEDIMENTS/DITCHES-LAKE LADORA	199606	ROD - 199606. All Required Cleanup Completed
SSA-3B	BURIED SEDIMENTS/DITCHES-DERBY LAKES	199912	Miscellaneous Southern Tier Soil Remediation CCR. All Required Cleanup Completed
SSA-4	SANITARY LANDFILLS-TRASH DUMP	200002	CCR Existing Sanitary Landfill Remediation Section 1 & Miscellaneous Northern Tier Soil Remediation Project CCR. All Required Cleanup Completed
SSA-5A	INVESTIGATED AREA - DBCP DETECTION	199510	ROD - 199606. All Required Cleanup Completed
SSA-5B	LAKE SEDIMENTS-HAVANA/PEORIA PONDS/DTCHS	199510	ROD - 199606. All Required Cleanup Completed
SSA-5C	INVESTIGATED AREA - PB DETECTION	199510	ROD - 199606. All Required Cleanup Completed
SSA-5D	INVESTIGATED AREA - PB DETECTION	199510	ROD - 199606. All Required Cleanup Completed
SSA-5E	INVESTIGATED AREA - UVALDA DITCH	199510	ROD - 199606. All Required Cleanup Completed
UT-TANKS	UNDERGROUND STORAGE TANKS	199712	Interim Response Action Final Report. All Required Cleanup Completed
W-R	WESTERN/RAILYARD PLUME	200308	Irondale Containment System Shut down for the Motor Pool Extraction

Site ID	Site Name	NFA Date	Documentation
			System CCR. All Required Cleanup Completed
W-W	WESTERN/WESTERN PLUME	199510	ROD - 199606. All Required Cleanup Completed
WSA-1A	RAILYARD-PYRENE/FLUOSANTHENE DETECTION	199510	ROD - 199606. All Required Cleanup Completed
WSA-1B	RAILYARD-WOOD PRESERVATIVE	199510	ROD - 199606. All Required Cleanup Completed
WSA-1C	RAILYARD-WOOD PRESERVATIVE	199510	ROD - 199606. All Required Cleanup Completed
WSA-1D	RAILYARD-ZINC DETECTION	199510	ROD - 199606. All Required Cleanup Completed
WSA-1E	RAILYARD-DBCP AREA	199510	ROD - 199606. All Required Cleanup Completed
WSA-1F	DITCHES-RAILYARD/PESTICIDE DETECTION	199912	Miscellaneous Southern Tier Soil Remediation CCR. All Required Cleanup Completed
WSA-1G	RAILYARD-MERCURY DETECTION	199510	ROD - 199606. All Required Cleanup Completed
WSA-2	SANITARY LANDFILLS-WEST LANDFILL	200002	CCR Existing Sanitary Landfill Remediation Section 4. All Required Cleanup Completed
WSA-3A	EAST LANDFILL-SOLVENT/METALS DETECTION	199510	ROD - 199606. All Required Cleanup Completed
WSA-3B	EAST LANDFILL-DISPOSAL PIT	199510	ROD - 199606. All Required Cleanup Completed
WSA-3C	SANITARY LANDFILLS-EAST LANDFILL/MAIN AR	200002	CCR Existing Sanitary Landfill Remediation Section 4. All Required Cleanup Completed
WSA-3D	EAST LANDFILL-METHYLISOBUTLY KETONE DET.	199510	ROD - 199606. All Required Cleanup Completed
WSA-4A	OPEN STORAGE YDMETHYLCYCLOEXANE DETECT	199510	ROD - 199606. All Required Cleanup Completed
WSA-4B	OPEN STORAGE YARD-MAIN AREA	199510	ROD - 199606. All Required Cleanup Completed
WSA-5A	SANITARY LANDFILLS-N. LANDFILL TRENCH	200002	CCR Existing Sanitary Landfill Remediation Section 4 - All Required Cleanup Completed
WSA-5B	NORTH LANDFILL BURN PIT	199510	ROD - 199606. Study Complete NFARC
WSA-5C	SANITARY LANDFILLS-N. LANDFILL TRENCH	200002	CCR Existing Sanitary Landfill Remediation Section 4 - All Required Cleanup Completed
WSA-5D	SANITARY LANDFILLS-N. LANDFILL TRENCHES	200002	CCR Existing Sanitary Landfill Remediation Section 4 - All Required Cleanup Completed
WSA-6A	BURIED SED/DITCHES-MOTOR POOL DITCH	199912	Miscellaneous Southern Tier Soil Remediation CCR - All Required Cleanup Completed
WSA-6B	MOTOR POOL-TANKS AREA	199510	ROD - 199606. Study Complete NFARC
WSA-6C	MOTOR POOL-ROUNDHOUSE AREA (BLDG 631)	199510	ROD - 199606. Study Complete NFARC
WSA-6D	MOTOR POOL-DRAINAGE AREA	199510	ROD - 199606. Study Complete NFARC

Site ID	Site Name	NFA Date	Documentation
WSA-6E	MOTOR POOL-CULVERT OUTFALL	199510	ROD - 199606. Study Complete NFARC
WSA-7A	SEWER SYSTEM-SANITARY SEWER SEDIMENTS	200901	Sanitary Sewer Manhole Plugging Project - Phase 2, Construction Completion Report
WSA-7B	SANITARY SEWER-OVERFLOW AREA	199510	ROD - 199606. Study Complete NFARC
WSA-8A	INVESTIGATED AREA-COPPER DETECTION	199510	ROD - 199606. Study Complete NFARC
WSA-8B	INVESTIGATED AREA-ZINC DETECTION	199510	ROD - 199606. Study Complete NFARC
WSA-8C	INVESTIGATED AREA-SALVAGE AREA TCE DETCT	199510	ROD - 199606. Study Complete NFARC
WSA-8D	INVESTIGATED AREA-PHOSPHERIC ACID	199510	ROD - 199606. Study Complete NFARC
WSA-8E	INVESTIGATED AREA-PHOSPHERIC ACID DETCT	199510	ROD - 199606. Study Complete NFARC
WSA-8F	INVESTIGATED AREA-METHYNAPHTHALENE DETCT	199510	ROD - 199606. Study Complete NFARC

Date of IRP Inception: 197601

 Past Phase Completion Milestones

 1980
 IRA
 (N-NP - NORTH BOUNDARY CONTAINMENT SYSTEM)

 1985

1985

PA

(NCSA-4A - SECONDARY BASINS-DEEP WELL, NCSA-4B - SECONDARY BASINS-BASIN F EXTERIOR, NCSA-5A - SECONDARY BASINS-BASIN B, NCSA-5B - BURIED SEDIMENTS/DITCHES-A,B,C,D DITCHES, A-A - BASIN A NECK SYSTEM, A-PE - AGENT PROCESS EQUIPT REMOVAL, A-S36BR - BASIN A/SEC 36 BEDROCK RIDGE PLUMES, A-SPN -BASIN A/SOUTH PLANTS NO. PLUME. AS - ASBESTOS REMOVAL. AT - ABOVE GROUND STORAGE TANKS IRA. NCSA-8C - DITCHES/DRAINAGE-HG DETECTION/LIFT STA#2, NCSA-9A -INVESTIGATED AREA-DIMP DETECTION, NCSA-9B - INVESTIGATED AREA-CD DETECTION, NCSA-9C - INVESTIGATED AREA-CD DETECTION, NCSA-9D - INVESTIGATED AREA-CD DETECTION, NCSA-9E - INVESTIGATED AREA-ZINC DETECTION, NCSA-9F - INVESTIGATED AREA, ZN/CU DETECTION, NCSA-9G - INVESTIGATED AREA-METHYLENE CHLORIDE DET, NCSA-9H - INVESTIGATED AREA-CD DETECTION, ESA-3I - AGENT TESTING - TOXIC STORAGE PLOTSDITCH, ESA-3J - TOXIC STORAGE YD. - FENCE SPRAYING, ESA-3K - TRASH PIT - SO. OF PLOT 8, ESA-4A - MUNITIONS TESTING - IMPACT/UXO, ESA-4B - MUNITIONS TESTING -DRMO AREA, ESA-4C - TRENCH/MOVED-UNKNOWN USE/SCRAP METAL, ESA-5 -UNDIFFERENTIATED - FUZE REMOVAL AREA, ESA-6A - TC STORAGE AREA - HEAVY METALS DETECTION, ESA-6B - UNDIFFERENTIATED-TRENCH/DETECTION F2CA, ESA-6C - BURIED SEDIMENTS/DITCHES - AS DETECTION, ESA-6D - HEXACHLOROBENZENE DETECTION, FD-DUST - FUGITIVE DUST IRA, FWASTEPILE - BASIN F WASTEPILE, N-CF - NORTH/BASINS C & F PLUME, N-NP - NORTH BOUNDARY CONTAINMENT SYSTEM, NA-PE - NON-AGENT PROCESS EQUIPT REMOVAL, NCSA-1A - BASIN A, NCSA-1B - LIME BASINS-SETTLING BASINS, NCSA-1C - BURIED SEDIMENTS/DITCHES-NO.PLANTS DITCH, NCSA-1D - DITCHES/DRAINAGE - RUNOFF STORAGE, NCSA-1E - BURN SITE-SO. PLTS. OPERATIONS, AW - ABANDONED WELLS CLOSURE IRA, B1727 - B1727 SUMP IRA-WASTEWATER, CERCLA-LW - CERCLA LIQUID WWT PLANT, CSA-1A - DISPOSAL TRENCHES-SHELL TRENCHES, CSA-1B - UNDIFFERENTIATED-SEC. 36 BALANCE, CSA-1C - DISPOSAL TRENCHES - COMPLEX TRENCHES, CSA-1D -SANITARY LANDFILLS-SAN LANDFILL/INCIN834, CSA-2A - UNDIFFERENTIATED-SEC. 36 BALANCE, CSA-2B - DITCHES/DRAINAGE-SEC 36 METAL DEBRIS, CSA-2C - MUNITIONS TESTING-INCEND MUNITIONS TS, CSA-2D - MUNITIONS TESTING-NN3601 INCINERATOR CON, CSA-3 - SEWER SYSTEMS - CHEM/BASINS A TO F, NCSA-5C - BURIED SEDIMENTS/DITCHES-SAND CK. LATERL, NCSA-5D - DITCHES/DRAINAGE-SURFACE CANAL/BASIN A, NCSA-6A -SEWER SYSTEMS-SO. PLTS/BASIN F (CHEM.), NCSA-6B - SEWER SYSTEMS-NO. PLTS/BASIN F(CHEM), NCSA-7 - LAKE SEDIMENTS-NORTH BDRY BOG, NCSA-8A - SEWER SYSTEMS-SAN. SEWER TO STP, NCSA-8B - DITCHES/DRAINAGE-STP AREA, NCSA-1F - BURIED SEDIMENT/DITCHES-SO. PLTS DITCHES, NCSA-1G - SECTION 36 BAL. OF AREAS SOIL REMED, NCSA-2A - SECONDARY BASINS-BASIN C, NCSA-2B - SECONDARY BASINS-BASIN D, NCSA-2C - SECONDARY BASINS-BASIN E, NCSA-2D - DITCHES/DRAINAGE-B TO D/B TO C DITCHES, NCSA-3 - SECONDARY BASINS - FORMER BASIN F, CSA-4 - UNDIFFERENTIATED-SEC. 36 BALANCE, ESA-1A - MUNITIONS TESTING-SURFACE BURN 1, ESA-1B - MUNITIONS TESTING-SURFACE BURN 2, ESA-1C - MUNITIONS TESTING-SURFACE BURN 3, ESA-1D - MUNITIONS TESTING - SURFACE BURN 4, ESA-2A - UNDIFFERENTIATED-BURIAL TRENCHES/BURN PT, ESA-2B - SANITARY LANDFILLS-SANIT. LANDFILL, ESA-2C - UNDIFFERETIATED-UXO OPEN TRENCHES, ESA-3A - AGENT TESTING-STORAGE YD., ESA-3B - AGENT TESTING-OLD TSY, ESA-3C - AGENT TESTING-NEW TSY, ESA-3D - AGENT TESTING-TOXIC YARD PLOTS, ESA-3E - AGENT TESTING-DEMIL PAD, ESA-3F - AGENT TESTING - RR/DOCK SPILL SITE, ESA-3G -AGENT TESTING - DRUM STORAGE/SPILL SITE, ESA-3H - AGENT TESTING - STORAGE AREA/SPILL SITE, W-MP - WESTERN/MOTOR POOL PLUME, W-R - WESTERN/RAILYARD PLUME, W-W - WESTERN/WESTERN PLUME, WSA-1A - RAILYARD-PYRENE/FLUOSANTHENE DETECTION, WSA-1B - RAILYARD-WOOD PRESERVATIVE, WSA-1C - RAILYARD-WOOD PRESERVATIVE, WSA-1D - RAILYARD-ZINC DETECTION, WSA-1E - RAILYARD-DBCP AREA, WSA-1F - DITCHES-RAILYARD/PESTICIDE DETECTION, WSA-1G - RAILYARD-MERCURY DETECTION, WSA-2 - SANITARY LANDFILLS-WEST LANDFILL, WSA-3A - EAST LANDFILL-SOLVENT/METALS DETECTION, WSA-3B - EAST LANDFILL-DISPOSAL PIT, NPSA-2 - TANK FARM 1403 AREA)

1985

SI

(NCSA-3 - SECONDARY BASINS - FORMER BASIN F. NCSA-4A - SECONDARY BASINS-DEEP WELL, NCSA-4B - SECONDARY BASINS-BASIN F EXTERIOR, NCSA-5A - SECONDARY BASINS-BASIN B, NCSA-5B - BURIED SEDIMENTS/DITCHES-A, B, C, D DITCHES, A-A - BASIN A NECK SYSTEM, A-PE - AGENT PROCESS EQUIPT REMOVAL, A-S36BR - BASIN A/SEC 36 BEDROCK RIDGE PLUMES, A-SPN - BASIN A/SOUTH PLANTS NO. PLUME, AS - ASBESTOS REMOVAL. NCSA-8B - DITCHES/DRAINAGE-STP AREA. NCSA-8C - DITCHES/DRAINAGE-HG DETECTION/LIFT STA#2, NCSA-9A - INVESTIGATED AREA-DIMP DETECTION, NCSA-9B -INVESTIGATED AREA-CD DETECTION, NCSA-9C - INVESTIGATED AREA-CD DETECTION, NCSA-9D - INVESTIGATED AREA-CD DETECTION, NCSA-9E - INVESTIGATED AREA-ZINC DETECTION, NCSA-9F - INVESTIGATED AREA, ZN/CU DETECTION, NCSA-9G - INVESTIGATED AREA-METHYLENE CHLORIDE DET, ESA-3H - AGENT TESTING - STORAGE AREA/SPILL SITE, ESA-3I - AGENT TESTING - TOXIC STORAGE PLOTSDITCH, ESA-3J - TOXIC STORAGE YD. -FENCE SPRAYING, ESA-3K - TRASH PIT - SO. OF PLOT 8, ESA-4A - MUNITIONS TESTING -IMPACT/UXO, ESA-4B - MUNITIONS TESTING - DRMO AREA, ESA-4C - TRENCH/MOVED-UNKNOWN USE/SCRAP METAL, ESA-5 - UNDIFFERENTIATED - FUZE REMOVAL AREA, ESA-6A - TC STORAGE AREA - HEAVY METALS DETECTION, ESA-6B - UNDIFFERENTIATED-TRENCH/DETECTION F2CA, ESA-6C - BURIED SEDIMENTS/DITCHES - AS DETECTION, ESA-6D -HEXACHLOROBENZENE DETECTION, FD-DUST - FUGITIVE DUST IRA, FWASTEPILE - BASIN F WASTEPILE, N-CF - NORTH/BASINS C & F PLUME, N-NP - NORTH BOUNDARY CONTAINMENT SYSTEM, NA-PE - NON-AGENT PROCESS EQUIPT REMOVAL, NCSA-1A - BASIN A, NCSA-1B -LIME BASINS-SETTLING BASINS, NCSA-1C - BURIED SEDIMENTS/DITCHES-NO.PLANTS DITCH, NCSA-1D - DITCHES/DRAINAGE - RUNOFF STORAGE, AT - ABOVE GROUND STORAGE TANKS IRA, AW - ABANDONED WELLS CLOSURE IRA, B1727 - B1727 SUMP IRA-WASTEWATER, CERCLA-LW - CERCLA LIQUID WWT PLANT, CSA-1A - DISPOSAL TRENCHES-SHELL TRENCHES, CSA-1B - UNDIFFERENTIATED-SEC. 36 BALANCE, CSA-1C - DISPOSAL TRENCHES - COMPLEX TRENCHES, CSA-1D - SANITARY LANDFILLS-SAN LANDFILL/INCIN834, CSA-2A -UNDIFFERENTIATED-SEC. 36 BALANCE, CSA-2B - DITCHES/DRAINAGE-SEC 36 METAL DEBRIS, CSA-2C - MUNITIONS TESTING-INCEND MUNITIONS TS, CSA-2D - MUNITIONS TESTING-NN3601 INCINERATOR CON, NCSA-5C - BURIED SEDIMENTS/DITCHES-SAND CK. LATERL, NCSA-5D - DITCHES/DRAINAGE-SURFACE CANAL/BASIN A, NCSA-6A - SEWER SYSTEMS-SO. PLTS/BASIN F (CHEM.), NCSA-6B - SEWER SYSTEMS-NO. PLTS/BASIN F(CHEM), NCSA-7 - LAKE SEDIMENTS-NORTH BDRY BOG, NCSA-8A - SEWER SYSTEMS-SAN. SEWER TO STP, NCSA-1E - BURN SITE-SO. PLTS. OPERATIONS, NCSA-1F - BURIED SEDIMENT/DITCHES-SO. PLTS DITCHES, NCSA-1G - SECTION 36 BAL. OF AREAS SOIL REMED, NCSA-2A - SECONDARY BASINS-BASIN C, NCSA-2B - SECONDARY BASINS-BASIN D, NCSA-2C - SECONDARY BASINS-BASIN E, NCSA-2D - DITCHES/DRAINAGE-B TO D/B TO C DITCHES, CSA-3 - SEWER SYSTEMS -CHEM/BASINS A TO F, CSA-4 - UNDIFFERENTIATED-SEC. 36 BALANCE, ESA-1A - MUNITIONS TESTING-SURFACE BURN 1, ESA-1B - MUNITIONS TESTING-SURFACE BURN 2, ESA-1C -MUNITIONS TESTING-SURFACE BURN 3, ESA-1D - MUNITIONS TESTING - SURFACE BURN 4, ESA-2A - UNDIFFERENTIATED-BURIAL TRENCHES/BURN PT, ESA-2B - SANITARY LANDFILLS-SANIT. LANDFILL, ESA-2C - UNDIFFERETIATED-UXO OPEN TRENCHES, ESA-3A - AGENT TESTING-STORAGE YD., ESA-3B - AGENT TESTING-OLD TSY, ESA-3C - AGENT TESTING-NEW TSY, ESA-3D - AGENT TESTING-TOXIC YARD PLOTS, ESA-3E - AGENT TESTING-DEMIL PAD, ESA-3F - AGENT TESTING - RR/DOCK SPILL SITE, ESA-3G - AGENT TESTING - DRUM STORAGE/SPILL SITE, W-MP - WESTERN/MOTOR POOL PLUME, W-R - WESTERN/RAILYARD PLUME, W-W - WESTERN/WESTERN PLUME, WSA-1A - RAILYARD-PYRENE/FLUOSANTHENE DETECTION, WSA-1B - RAILYARD-WOOD PRESERVATIVE, WSA-1C - RAILYARD-WOOD PRESERVATIVE, WSA-1D - RAILYARD-ZINC DETECTION, WSA-1E - RAILYARD-DBCP AREA, WSA-1F - DITCHES-RAILYARD/PESTICIDE DETECTION, WSA-1G - RAILYARD-MERCURY DETECTION, WSA-2 - SANITARY LANDFILLS-WEST LANDFILL, WSA-3A - EAST LANDFILL-SOLVENT/METALS DETECTION, WSA-3B - EAST LANDFILL-DISPOSAL PIT, NCSA-9H -INVESTIGATED AREA-CD DETECTION, NPSA-2 - TANK FARM 1403 AREA)

1989	
RI/FS	(AT - ABOVE GROUND STORAGE TANKS IRA)
RD	(AT - ABOVE GROUND STORAGE TANKS IRA)
IRA	(FWASTEPILE - BASIN F WASTEPILE)
1990	
IRA	(A-A - BASIN A NECK SYSTEM, A-SPN - BASIN A/SOUTH PLANTS NO. PLUME, AW - ABANDONED WELLS CLOSURE IRA, B1727 - B1727 SUMP IRA-WASTEWATER)
1991	
IRA	(N-CF - NORTH/BASINS C & F PLUME, W-R - WESTERN/RAILYARD PLUME)
1992	
IRA	(CERCLA-LW - CERCLA LIQUID WWT PLANT, CSA-1A - DISPOSAL TRENCHES-SHELL TRENCHES, SANSEWER - SANITARY SEWER IRA, SPSA-6 - HYDRAZINE FUEL BLENDING/STORAGE FACILITY, W-MP - WESTERN/MOTOR POOL PLUME)
1993	
IRA	(NW-A - NORTHWEST BOUNDARY CONTAINMENT SYST, SPSA-1E - LIME BASINS - M1 PITS)
1994	
IRA	(NCSA-1B - LIME BASINS-SETTLING BASINS, OU-N - NORTHERN PATHWAY)
1995	
IRA	(CSA-1C - DISPOSAL TRENCHES - COMPLEX TRENCHES, NCSA-3 - SECONDARY BASINS - FORMER BASIN F)
1996	,
IRA	(A-PE - AGENT PROCESS EQUIPT REMOVAL, AS - ASBESTOS REMOVAL, AT - ABOVE GROUND STORAGE TANKS IRA, FD-DUST - FUGITIVE DUST IRA, NA-PE - NON-AGENT PROCESS EQUIPT REMOVAL, PCB-STRUC PCB REMOVAL, UT-TANKS - UNDERGROUND STORAGE TANKS)

1996

RI/FS

(NCSA-3 - SECONDARY BASINS - FORMER BASIN F. NCSA-4A - SECONDARY BASINS-DEEP WELL, NCSA-4B - SECONDARY BASINS-BASIN F EXTERIOR, NCSA-5A - SECONDARY BASINS-BASIN B, NCSA-5B - BURIED SEDIMENTS/DITCHES-A, B, C, D DITCHES, A-A - BASIN A NECK SYSTEM, A-PE - AGENT PROCESS EQUIPT REMOVAL, A-S36BR - BASIN A/SEC 36 BEDROCK RIDGE PLUMES, A-SPN - BASIN A/SOUTH PLANTS NO. PLUME, AS - ASBESTOS REMOVAL. NCSA-8B - DITCHES/DRAINAGE-STP AREA. NCSA-8C - DITCHES/DRAINAGE-HG DETECTION/LIFT STA#2, NCSA-9A - INVESTIGATED AREA-DIMP DETECTION, NCSA-9B -INVESTIGATED AREA-CD DETECTION, NCSA-9C - INVESTIGATED AREA-CD DETECTION, NCSA-9D - INVESTIGATED AREA-CD DETECTION, NCSA-9E - INVESTIGATED AREA-ZINC DETECTION, NCSA-9F - INVESTIGATED AREA, ZN/CU DETECTION, NCSA-9G - INVESTIGATED AREA-METHYLENE CHLORIDE DET, ESA-3I - AGENT TESTING - TOXIC STORAGE PLOTSDITCH, ESA-3J - TOXIC STORAGE YD. - FENCE SPRAYING, ESA-3K - TRASH PIT - SO. OF PLOT 8, ESA-4A - MUNITIONS TESTING - IMPACT/UXO, ESA-4B - MUNITIONS TESTING - DRMO AREA, ESA-4C - TRENCH/MOVED-UNKNOWN USE/SCRAP METAL, ESA-5 - UNDIFFERENTIATED -FUZE REMOVAL AREA, ESA-6A - TC STORAGE AREA - HEAVY METALS DETECTION, ESA-6B -UNDIFFERENTIATED-TRENCH/DETECTION F2CA, ESA-6C - BURIED SEDIMENTS/DITCHES - AS DETECTION, ESA-6D - HEXACHLOROBENZENE DETECTION, FD-DUST - FUGITIVE DUST IRA, FWASTEPILE - BASIN F WASTEPILE, N-CF - NORTH/BASINS C & F PLUME, N-NP - NORTH BOUNDARY CONTAINMENT SYSTEM, NA-PE - NON-AGENT PROCESS EQUIPT REMOVAL, NCSA-1A - BASIN A, NCSA-1B - LIME BASINS-SETTLING BASINS, NCSA-1C - BURIED SEDIMENTS/DITCHES-NO.PLANTS DITCH, NCSA-1D - DITCHES/DRAINAGE - RUNOFF STORAGE, AW - ABANDONED WELLS CLOSURE IRA, B1727 - B1727 SUMP IRA-WASTEWATER, CERCLA-LW - CERCLA LIQUID WWT PLANT, CSA-1A - DISPOSAL TRENCHES-SHELL TRENCHES, CSA-1B - UNDIFFERENTIATED-SEC. 36 BALANCE, CSA-1C - DISPOSAL TRENCHES - COMPLEX TRENCHES, CSA-1D - SANITARY LANDFILLS-SAN LANDFILL/INCIN834, CSA-2A -UNDIFFERENTIATED-SEC. 36 BALANCE, CSA-2B - DITCHES/DRAINAGE-SEC 36 METAL DEBRIS, CSA-2C - MUNITIONS TESTING-INCEND MUNITIONS TS, CSA-2D - MUNITIONS TESTING-NN3601 INCINERATOR CON, NCSA-5C - BURIED SEDIMENTS/DITCHES-SAND CK. LATERL, NCSA-5D - DITCHES/DRAINAGE-SURFACE CANAL/BASIN A, NCSA-6A - SEWER SYSTEMS-SO. PLTS/BASIN F (CHEM.), NCSA-6B - SEWER SYSTEMS-NO. PLTS/BASIN F (CHEM), NCSA-7 - LAKE SEDIMENTS-NORTH BDRY BOG, NCSA-8A - SEWER SYSTEMS-SAN. SEWER TO STP, NCSA-1E - BURN SITE-SO. PLTS. OPERATIONS, NCSA-1F - BURIED SEDIMENT/DITCHES-SO. PLTS DITCHES, NCSA-1G - SECTION 36 BAL. OF AREAS SOIL REMED, NCSA-2A - SECONDARY BASINS-BASIN C, NCSA-2B - SECONDARY BASINS-BASIN D, NCSA-2C - SECONDARY BASINS-BASIN E, NCSA-2D - DITCHES/DRAINAGE-B TO D/B TO C DITCHES, CSA-3 - SEWER SYSTEMS -CHEM/BASINS A TO F, CSA-4 - UNDIFFERENTIATED-SEC. 36 BALANCE, ESA-1A - MUNITIONS TESTING-SURFACE BURN 1, ESA-1B - MUNITIONS TESTING-SURFACE BURN 2, ESA-1C -MUNITIONS TESTING-SURFACE BURN 3, ESA-1D - MUNITIONS TESTING - SURFACE BURN 4, ESA-2A - UNDIFFERENTIATED-BURIAL TRENCHES/BURN PT, ESA-2B - SANITARY LANDFILLS-SANIT. LANDFILL, ESA-2C - UNDIFFERETIATED-UXO OPEN TRENCHES, ESA-3A - AGENT TESTING-STORAGE YD., ESA-3B - AGENT TESTING-OLD TSY, ESA-3C - AGENT TESTING-NEW TSY, ESA-3D - AGENT TESTING-TOXIC YARD PLOTS, ESA-3E - AGENT TESTING-DEMIL PAD, ESA-3F - AGENT TESTING - RR/DOCK SPILL SITE, ESA-3G - AGENT TESTING - DRUM STORAGE/SPILL SITE, ESA-3H - AGENT TESTING - STORAGE AREA/SPILL SITE, W-MP -WESTERN/MOTOR POOL PLUME, W-R - WESTERN/RAILYARD PLUME, W-W -WESTERN/WESTERN PLUME, WSA-1A - RAILYARD-PYRENE/FLUOSANTHENE DETECTION, WSA-1B - RAILYARD-WOOD PRESERVATIVE, WSA-1C - RAILYARD-WOOD PRESERVATIVE, WSA-1D - RAILYARD-ZINC DETECTION, WSA-1E - RAILYARD-DBCP AREA, WSA-1F -DITCHES-RAILYARD/PESTICIDE DETECTION, WSA-1G - RAILYARD-MERCURY DETECTION, WSA-2 - SANITARY LANDFILLS-WEST LANDFILL, WSA-3A - EAST LANDFILL-SOLVENT/METALS DETECTION, WSA-3B - EAST LANDFILL-DISPOSAL PIT, NCSA-9H - INVESTIGATED AREA-CD DETECTION, NCSA-9I - INVESTIGATED AREA - BUTOXYETHANOL DETECT)

1996	
RD	(A-PE - AGENT PROCESS EQUIPT REMOVAL, A-SPN - BASIN A/SOUTH PLANTS NO. PLUME, AS - ASBESTOS REMOVAL, FD-DUST - FUGITIVE DUST IRA, N-CF - NORTH/BASINS C & F PLUME, N-NP - NORTH BOUNDARY CONTAINMENT SYSTEM, NA-PE - NON-AGENT PROCESS EQUIPT REMOVAL, AW - ABANDONED WELLS CLOSURE IRA, B1727 - B1727 SUMP IRA-WASTEWATER, CERCLA-LW - CERCLA LIQUID WWT PLANT, W-MP - WESTERN/MOTOR POOL PLUME, W-R - WESTERN/RAILYARD PLUME, NW-A - NORTHWEST BOUNDARY CONTAINMENT SYST, NW-SC - NORTHWEST/SAND CREEK LATERAL PLUMES, OU-N - NORTHERN PATHWAY, OU-NW - FIRST CREEK, PCB-STRUC PCB REMOVAL, UT-TANKS - UNDERGROUND STORAGE TANKS)
RA(C)	(A-SPN - BASIN A/SOUTH PLANTS NO. PLUME, FD-DUST - FUGITIVE DUST IRA, NA-PE - NON- AGENT PROCESS EQUIPT REMOVAL, AT - ABOVE GROUND STORAGE TANKS IRA, AW - ABANDONED WELLS CLOSURE IRA, B1727 - B1727 SUMP IRA-WASTEWATER, CERCLA-LW - CERCLA LIQUID WWT PLANT, W-MP - WESTERN/MOTOR POOL PLUME, W-R - WESTERN/RAILYARD PLUME, PCB-STRUC PCB REMOVAL)
1997	
RA(C)	(A-A - BASIN A NECK SYSTEM, N-CF - NORTH/BASINS C & F PLUME, N-NP - NORTH BOUNDARY CONTAINMENT SYSTEM, NW-A - NORTHWEST BOUNDARY CONTAINMENT SYST, NW-SC - NORTHWEST/SAND CREEK LATERAL PLUMES, OU-N - NORTHERN PATHWAY, OU-NW - FIRST CREEK)

**1997** RD

(NCSA-4A - SECONDARY BASINS-DEEP WELL, NCSA-4B - SECONDARY BASINS-BASIN F EXTERIOR, NCSA-5A - SECONDARY BASINS-BASIN B, NCSA-5B - BURIED SEDIMENTS/DITCHES-A,B,C,D DITCHES, A-A - BASIN A NECK SYSTEM, A-S36BR - BASIN A/SEC 36 BEDROCK RIDGE PLUMES, NCSA-8B - DITCHES/DRAINAGE-STP AREA, ESA-4A -MUNITIONS TESTING - IMPACT/UXO. ESA-4B - MUNITIONS TESTING - DRMO AREA. FWASTEPILE - BASIN F WASTEPILE, NCSA-1A - BASIN A, NCSA-1B - LIME BASINS-SETTLING BASINS, NCSA-1C - BURIED SEDIMENTS/DITCHES-NO.PLANTS DITCH, NCSA-1D -DITCHES/DRAINAGE - RUNOFF STORAGE, CSA-1A - DISPOSAL TRENCHES-SHELL TRENCHES, CSA-1B - UNDIFFERENTIATED-SEC. 36 BALANCE, CSA-1C - DISPOSAL TRENCHES - COMPLEX TRENCHES, CSA-1D - SANITARY LANDFILLS-SAN LANDFILL/INCIN834, CSA-2A -UNDIFFERENTIATED-SEC. 36 BALANCE, CSA-2B - DITCHES/DRAINAGE-SEC 36 METAL DEBRIS, CSA-2C - MUNITIONS TESTING-INCEND MUNITIONS TS, CSA-2D - MUNITIONS TESTING-NN3601 INCINERATOR CON, NCSA-5C - BURIED SEDIMENTS/DITCHES-SAND CK. LATERL NCSA-5D - DITCHES/DRAINAGE-SURFACE CANAL/BASIN A, NCSA-6A - SEWER SYSTEMS-SO. PLTS/BASIN F (CHEM.), NCSA-6B - SEWER SYSTEMS-NO. PLTS/BASIN F (CHEM), NCSA-8A -SEWER SYSTEMS-SAN. SEWER TO STP, NCSA-1E - BURN SITE-SO. PLTS. OPERATIONS, NCSA-1F - BURIED SEDIMENT/DITCHES-SO. PLTS DITCHES, NCSA-1G - SECTION 36 BAL. OF AREAS SOIL REMED, NCSA-2A - SECONDARY BASINS-BASIN C, NCSA-2B - SECONDARY BASINS-BASIN D, NCSA-2D - DITCHES/DRAINAGE-B TO D/B TO C DITCHES, NCSA-3 -SECONDARY BASINS - FORMER BASIN F, CSA-3 - SEWER SYSTEMS - CHEM/BASINS A TO F, CSA-4 - UNDIFFERENTIATED-SEC. 36 BALANCE, ESA-1A - MUNITIONS TESTING-SURFACE BURN 1, ESA-1B - MUNITIONS TESTING-SURFACE BURN 2, ESA-1C - MUNITIONS TESTING-SURFACE BURN 3, ESA-1D - MUNITIONS TESTING - SURFACE BURN 4, ESA-2A -UNDIFFERENTIATED-BURIAL TRENCHES/BURN PT, ESA-2B - SANITARY LANDFILLS-SANIT. LANDFILL, ESA-2C - UNDIFFERETIATED-UXO OPEN TRENCHES, ESA-3A - AGENT TESTING-STORAGE YD., ESA-3B - AGENT TESTING-OLD TSY, ESA-3G - AGENT TESTING - DRUM STORAGE/SPILL SITE, WSA-1F - DITCHES-RAILYARD/PESTICIDE DETECTION, WSA-2 -SANITARY LANDFILLS-WEST LANDFILL, NFU-A - STRUCTURES - NO FUTURE USE, AGENT, NFU-MNP - STRUCTURES-NO FUTURE USE, MFG, NON-PROCESS, NFU-MP - STRUCTURES -NO FUTURE USE, MFG, PROCESS, WSA-3C - SANITARY LANDFILLS-EAST LANDFILL/MAIN AR, WSA-5A - SANITARY LANDFILLS-N. LANDFILL TRENCH, WSA-5C - SANITARY LANDFILLS-N. LANDFILL TRENCH, NPSA-1 - SEWER SYSTEMS - CHEMICAL SEWERS, NPSA-3 - AGENT TESTING-GB MANUFACTURING AREA, NPSA-4 - BURIED SED/DITCHES-FUZE & DETONATOR MAG., NPSA-5 - AGENT TESTING-SPECIAL WEAPONS PLANT, NPSA-6 - NORTH PLANT SOIL REMEDIATION, NPSA-8C - SURFACE DRAINAGE AREA, NPSA-9F - INVESTIGATED AREA-ARSENIC DETECTION, SPSA-10 - SEWER SYSTEMS-CHEM. SEWER, SPSA-11 - SEWER SYSTEMS-SANITARY, SPSA-12A - SOUTH TANKS BALANCE-AERATION BASIN, SPSA-12B -SOUTH PLANTS BALANCE-SEDIMENT POND, SPSA-12C - SEWER SYSTEMS-PROCESS WATER, SPSA-1A - SOUTH PLANTS BALANCE CENTRAL PROCESSING, SPSA-1B - SOUTH PLANTS BALANCE UNKNOWN MOUNDS, SPSA-1C - SOUTH PLANTS BALANCE-LIME PITS, SPSA-1D -SOUTH PLANTS-DRAINAGE DITCHES, SPSA-2D - SOUTH PLANTS-DRAINAGE DITCHES, SPSA-2E - SOUTH PLANTS BALANCE-SURFACE DEPOSITION, SPSA-3A - SOUTH PLANTS-DRAINAGE DITCHES, SPSA-3B - SOUTH PLANTS BALANCE-STORAGE PAD, SPSA-3C - SOUTH PLANTS BALANCE-TANK STORAGE AREA, SPSA-3D - SOUTH PLANTS BALANCE-TANK STORAGE AREA, SPSA-3E - SOUTH PLANTS BALANCE-MISCELLANEOUS, SPSA-4A - SOUTH PLANTS-DRAINAGE DITCHES, SPSA-4B - SOUTH PLANTS BALANCE-MISCELLANEOUS, SPSA-5A -SOUTH PLANTS-DRAINAGE DITCHES, SPSA-5B - SOUTH TANKS BALANCE-MISCELLANEOUS, SPSA-6 - HYDRAZINE FUEL BLENDING/STORAGE FACILITY, SPSA-7A - BALANCE SPSA/SURFACE CONTAMINATION, SPSA-7B - SOUTH PLANTS BALANCE-DEPRESSION, SPSA-7C - SOUTH PLANTS BALANCE-MISCELL/SURF. CONTM, SPSA-8A - SOUTH PLANTS BALANCE-SANITARY LANDFILL, SPSA-8B - SOUTH PLANTS-DRAINAGE DITCHES, SPSA-8C - SPSA8 BALANCE/SURFACE CONTAMINATION, WSA-5D - SANITARY LANDFILLS-N. LANDFILL TRENCHES, WSA-6A - BURIED SED/DITCHES-MOTOR POOL DITCH)

1997	
PA	(HWL - HAZARDOUS WASTE LANDFILL, ICS - INTEGRATED COVER SYSTEM, ELF - ENHANCED HAZARDOUS WASTE LANDFILL)
1998	
RA(C)	(A-PE - AGENT PROCESS EQUIPT REMOVAL, AS - ASBESTOS REMOVAL, SPSA-11 - SEWER SYSTEMS-SANITARY, SPSA-12C - SEWER SYSTEMS-PROCESS WATER, UT-TANKS - UNDERGROUND STORAGE TANKS)
1999	
RA(C)	(ESA-3A - AGENT TESTING-STORAGE YD., ESA-3B - AGENT TESTING-OLD TSY, ESA-3G - AGENT TESTING - DRUM STORAGE/SPILL SITE, SSA-1B - LAKE SEDIMENTS - UPPER DERBY LAKE, SSA-1C - LAKE SEDIMENTS - LOWER DERBY LAKE)
2000	
RA(C)	(A-S36BR - BASIN A/SEC 36 BEDROCK RIDGE PLUMES, ESA-4A - MUNITIONS TESTING - IMPACT/UXO, ESA-4B - MUNITIONS TESTING - DRMO AREA, CSA-2C - MUNITIONS TESTING- INCEND MUNITIONS TS, NCSA-8B - DITCHES/DRAINAGE-STP AREA, ESA-1A - MUNITIONS TESTING-SURFACE BURN 1, ESA-1B - MUNITIONS TESTING-SURFACE BURN 2, ESA-1C - MUNITIONS TESTING-SURFACE BURN 3, ESA-1D - MUNITIONS TESTING - SURFACE BURN 4, ESA-2A - UNDIFFERENTIATED-BURIAL TRENCHES/BURN PT, ESA-2C - UNDIFFERETIATED- UXO OPEN TRENCHES, WSA-1F - DITCHES-RAILYARD/PESTICIDE DETECTION, WSA-2 - SANITARY LANDFILLS-WEST LANDFILL, WSA-3C - SANITARY LANDFILLS-EAST LANDFILL/MAIN AR, WSA-5A - SANITARY LANDFILLS-N. LANDFILL TRENCH, WSA-5C - SANITARY LANDFILLS- N. LANDFILL TRENCH, WSA-5D - SANITARY LANDFILLS-N. LANDFILL TRENCHES, NPSA-4 - BURIED SED/DITCHES-FUZE & DETONATOR MAG., WSA-6A - BURIED SED/DITCHES-MOTOR POOL DITCH, SSA-2A - DITCHES/DRAINAGE - PROCESS DITCH, SSA-2B - BURIED SEDIMENTS/DITCHES-SAND CK. LATERL, SSA-2C - DITCHES/DRAINAGE-LAKES OVERFLOW BASIN, SSA-3B - BURIED SEDIMENTS/DITCHES-DERBY LAKES, SSA-4 - SANITARY LANDFILLS-
2001	TRASH DUMP)
RA(C)	(NCSA-6A - SEWER SYSTEMS-SO. PLTS/BASIN F (CHEM.), SPSA-10 - SEWER SYSTEMS-CHEM. SEWER, SPSA-1E - LIME BASINS - M1 PITS, SPSA-3A - SOUTH PLANTS-DRAINAGE DITCHES, SPSA-3E - SOUTH PLANTS BALANCE-MISCELLANEOUS, SPSA-4B - SOUTH PLANTS BALANCE- MISCELLANEOUS, SPSA-5B - SOUTH TANKS BALANCE-MISCELLANEOUS, SPSA-8A - SOUTH PLANTS BALANCE-SANITARY LANDFILL, SPSA-8B - SOUTH PLANTS-DRAINAGE DITCHES, SPSA-9A - SOUTH PLANTS-DRAINAGE DITCHES, SPSA-9B - SOUTH PLANTS BALANCE- MISCELL/SURF. CONTM, SPSA-1G - SOUTH PLANTS BALANCE-MISCELLANEOUS)
2002	

2002	
RA(C)	(NCSA-4A - SECONDARY BASINS-DEEP WELL, NCSA-5B - BURIED SEDIMENTS/DITCHES- A,B,C,D DITCHES, NCSA-1C - BURIED SEDIMENTS/DITCHES-NO.PLANTS DITCH, NCSA-1D - DITCHES/DRAINAGE - RUNOFF STORAGE, CSA-1B - UNDIFFERENTIATED-SEC. 36 BALANCE, CSA-2A - UNDIFFERENTIATED-SEC. 36 BALANCE, CSA-2B - DITCHES/DRAINAGE-SEC 36 METAL DEBRIS, NCSA-5C - BURIED SEDIMENTS/DITCHES-SAND CK. LATERL, NCSA-5D - DITCHES/DRAINAGE-SURFACE CANAL/BASIN A, NCSA-6B - SEWER SYSTEMS-NO. PLTS/BASIN F(CHEM), NCSA-1E - BURN SITE-SO. PLTS. OPERATIONS, NCSA-1F - BURIED SEDIMENT/DITCHES-SO. PLTS DITCHES, NCSA-2B - SECONDARY BASINS-BASIN D, NCSA-2D - DITCHES/DRAINAGE-B TO D/B TO C DITCHES, CSA-3 - SEWER SYSTEMS - CHEM/BASINS A TO F, CSA-4 - UNDIFFERENTIATED-SEC. 36 BALANCE, NFU-A - STRUCTURES - NO FUTURE USE, AGENT, NFU-MP - STRUCTURES - NO FUTURE USE, MFG.PROCESS, NPSA-1 - SEWER SYSTEMS - CHEMICAL SEWERS, NPSA-3 - AGENT TESTING-GB MANUFACTURING AREA, NPSA-5 - AGENT TESTING-SPECIAL WEAPONS PLANT, NPSA-8C - SURFACE DRAINAGE AREA, NPSA-5 - AGENT TESTING-SPECIAL WEAPONS PLANT, NPSA-8C - SURFACE DRAINAGE AREA, NPSA-9F - INVESTIGATED AREA-ARSENIC DETECTION, SPSA-12A - SOUTH TANKS BALANCE- AERATION BASIN, SPSA-12B - SOUTH PLANTS BALANCE-SUBIENT POND, SPSA-1B - SOUTH PLANTS BALANCE UNKNOWN MOUNDS, SPSA-1C - SOUTH PLANTS BALANCE-LIME PITS, SPSA-1D - SOUTH PLANTS BALANCE-SURFACE DEPOSITION, SPSA-3B - SOUTH PLANTS BALANCE-STORAGE PAD, SPSA-3C - SOUTH PLANTS BALANCE-TANK STORAGE AREA, SPSA-2E - SOUTH PLANTS BALANCE-SURFACE DEPOSITION, SPSA-3B - SOUTH PLANTS BALANCE-STORAGE PAD, SPSA-3C - SOUTH PLANTS BALANCE-TANK STORAGE AREA, SPSA-3D - SOUTH PLANTS BALANCE-TANK STORAGE AREA, SPSA-4A - SOUTH PLANTS BALANCE-STORAGE PAD, SPSA-5A - SOUTH PLANTS BALANCE SPSA-5A - SOUTH PLANTS BALANCE-STORAGE FACILITY, SPSA-7A - BALANCE SPSA/SURFACE CONTAMINATION, SPSA-7B - SOUTH PLANTS BALANCE-DEPRESSION, SPSA-7C - SOUTH PLANTS BALANCE-MISCELL/SURF. CONTM, SPSA-8C - SPSA8 BALANCE/SURFACE CONTAMINATION, SPSA-2A - SOUTH PLANTS BALANCE-SALVAGE YARD)
RA(O)	(W-R - WESTERN/RAILYARD PLUME)
RA(C)	(NCSA-5A - SECONDARY BASINS-BASIN B, CSA-1D - SANITARY LANDFILLS-SAN LANDFILL/INCIN834, CSA-2D - MUNITIONS TESTING-NN3601 INCINERATOR CON, NCSA-2A - SECONDARY BASINS-BASIN C)
2004	, ,
RA(C)	(ESA-2B - SANITARY LANDFILLS-SANIT. LANDFILL, SPSA-1F - DISPOSAL TRENCHES-HEXA BARRELS)
2005	
PA	(SWP - SITE-WIDE PROGRAM)
2006	
RA(O)	(A-S36BR - BASIN A/SEC 36 BEDROCK RIDGE PLUMES, A-SPN - BASIN A/SOUTH PLANTS NO. PLUME, N-CF - NORTH/BASINS C & F PLUME, NW-SC - NORTHWEST/SAND CREEK LATERAL PLUMES)
RA(C)	(NCSA-1G - SECTION 36 BAL. OF AREAS SOIL REMED)
2008	· · · · · · · · · · · · · · · · · · ·
RA(C)	(NPSA-6 - NORTH PLANT SOIL REMEDIATION)
2009	
2009 RA(C)	(NCSA-8A - SEWER SYSTEMS-SAN. SEWER TO STP, WSA-7A - SEWER SYSTEM-SANITARY SEWER SEDIMENTS)
2010	
LTM	(CERCLA-LW - CERCLA LIQUID WWT PLANT)

2010						
RA(C)	(NCSA-4B - SECONDARY BASINS-BASIN F EXTERIOR, FWASTEPILE - BASIN F WASTEPILE, NCSA-1A - BASIN A, NCSA-1B - LIME BASINS-SETTLING BASINS, CSA-1A - DISPOSAL TRENCHES-SHELL TRENCHES, CSA-1C - DISPOSAL TRENCHES - COMPLEX TRENCHES, SPSA-1A - SOUTH PLANTS BALANCE CENTRAL PROCESSING)					
2011						
RA(C)	(NCSA-3 - SECONDARY BASINS - FORMER BASIN F, NFU-MNP - STRUCTURES-NO FUTURE USE.MFG.NON-PROCESS)					
Additional Past Phase Completion Milestones						
	EWER SYSTEMS - SAN. SEWER WER SYSTEM - SANITARY SEWE	,				
Projected Phase Co See attached so	mpletion Milestones chedule					
Projected Record of Site ID	f Decision (ROD)/Decision Docur Site Name	nent (DD) Approval Dates ROD/DD Title	ROD/DD Date			

Final RA(C) Completion Date: 201107

Schedule for Next Five-Year Review: 2015

Estimated Completion Date of IRP at Installation (including LTM phase): 204309

### **ROCKY MOUNTAIN ARSENAL IRP Schedule**

						= phas	= phase underway	
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
A-A	BASIN A NECK SYSTEM	RA(O)						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
ELF	ENHANCED HAZARDOUS WASTE LANDFILL	LTM						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
HWL	HAZARDOUS WASTE LANDFILL	LTM						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
ICS	INTEGRATED COVER SYSTEM	LTM						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
N-NP	NORTH BOUNDARY CONTAINMENT SYSTEM	RA(O)						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
NCSA-3	SECONDARY BASINS - FORMER BASIN F	LTM						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
NW-A	NORTHWEST BOUNDARY CONTAINMENT SYST	RA(O)						
		LTM						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
OU-N	NORTHERN PATHWAY	RA(O)						
		LTM						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
OU-NW	FIRST CREEK	RA(O)						
		LTM						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
SWP	SITE-WIDE PROGRAM	LTM						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
W-MP	WESTERN/MOTOR POOL PLUME	RA(O)						
		LTM						
L			4					

Technical Review Committee (TRC): 198902

Community Involvement Plan (Date Published): 200801 Restoration Advisory Board (RAB): RAB established 1994

#### RAB Adjournment Date: 201111

RAB Adjournment Reason: All environmental restoration remedies are in place and are operating properly and successfully.

#### Additional Community Involvement Information

The RMA RAB was formed in 1994 as a result of a modification of the TRC. The transition from TRC to RAB was a Department of Defense (DoD) requirement set forth in the spring of 1994. Currently, there are about 25 members, including alternates and regulatory agency representatives. The board continues to provide input and comments on closure issues. The board shares site information with other interested stakeholders.

Over the past year, the board has offered input on issues pertaining to the completion of the ICS, structures demolition and air monitoring. The RAB has also provided input on the ongoing groundwater treatment and reseeding programs. As all construction related fieldwork came to a close, the board saw first-hand what progress had been made by taking an annual bus tour around the completed remediation projects. The program continues to move ahead with public support, involvement and input.

The RAB has been an excellent forum for discussions with stakeholders, and is particularly valuable as long-term care plans are developed. The RMA will continue to hold RAB meetings through FY 11 to provide a forum for community involvement, education and input on the site's closure plans, long-term care, and its continued transition into a national wildlife refuge.

The January 2008 Community Involvement Plan (CIP) is the final plan since the remedy is near complete. There will be no future revisions to this plan.

#### Administrative Record is located at

On-site Rocky Mountain Arsenal 6550 Gateway Road, Bldg 129, Commerce City, Colorado 80022 Open M-F noon to 4:00 pm or by appointment. Phone 303-289-0983.

#### Information Repository is located at

Rocky Mountain Arsenal 6550 Gateway Road, Bldg 129 Commerce City, Colorado 80022 Open M-F noon to 4:00 pm or by appointment. Phone 303-289-0983.

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

TAPP Title: N/A

Potential TAPP: N/A