

**FY2016**

**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

AEDB-R	Army Environmental Database - Restoration
AOC	Area of Concern
bcy	bank cubic yard
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
CIP	Community Involvement Plan
CQAP	Construction Quality Assurance Plan
CSRG	Containment System Remediation Goals
CSV	Contingent Soil Volume
CTC	cost-to-complete
CWM	Chemical Weapon Munitions
DAA	Detailed Analysis of Alternatives
DBCP	Dibromochloropropane
DIMP	Di-isopropylmethyl Phosphonate
DNAPL	Dense Non-aqueous Phase Liquid
DoD	Department of Defense
DSR	Data Summary Report
EA	Endangerment Assessment
ELF	Enhanced Hazardous Waste Landfill
ER,A	Environmental Restoration, Army
ESD	Explanation of Significant Differences
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
IR	Installation Restoration
IRA	Interim Remedial Action
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

## Acronyms

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
OU	Operable Unit
PA	Preliminary Assessment
PCB	Polychlorinated Biphenyls
POL	Petroleum, Oil and Lubricants
PPLV	Preliminary Pollutant Limit Value
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
REDIS	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
SI	Site Inspection
STFP	South Tank Farm Plume
STP	Sewage Treatment Plant
SVOC	Semi-Volatile Organic Compound
SWP	Site-Wide Program
TAPP	Technical Assistance for Public Participation
TCE	Trichloroethylene
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

## Acronyms

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 Information

## 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

<b>Federal</b>	US Environmental Protection Agency (USEPA), Region VIII
<b>Local</b>	Tri-County Health Department (TCH) (Adams, Arapahoe, and Douglas Counties)
<b>State</b>	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

# Cleanup Program Summary

## 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 February 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 (LUC) 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 (IRA). 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 (CCR), detailing the activities and status of the IRAs were accepted by the USEPA.



## Cleanup Program Summary

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 were outlined in the remediation design and implementation schedule (RDIS), which was the detailed schedule for completion of activities associated with the selected remedy and appended to the ROD. The RDIS provided a comprehensive view of the overall remediation program and its status to the regulators and the public. Additionally, this schedule was 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 September 30, 2011 was 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) underwent significant design modifications and allowed for cost savings. Additionally, in concert with those design improvements, RMA 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 left in place 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 September 2011. The fourth five-year review is currently in progress.

The requirement to implement an environmental remediation program and subsequent long-term Operations and Maintenance (O&M) program 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 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. 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 Former Basin F (NCSA-3). The long-term O&M contract is in its first year of the first of two three-year option periods on a contract that was originally awarded in December 2012.
- 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
Underway	201504	201610	2017

### 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

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

**Actions** Exposed 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.

**Plans** 1,4-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.

## 5-Year / Periodic Review Summary

### Recommendations and Implementation Plans:

Recommended actions currently underway:

1,4-Dioxane Sampling: Because of a new (lower) state groundwater standard, a sampling program was carried out in 2012. Results are available. A Data Summary Report was completed and submitted to the regulatory agencies in 2014.

Temporary Worker Residential Use Risk Assessment: The USFWS began providing temporary on-site housing for temporary workers in 2009. The regulatory agencies requested and participated in the scoping of a risk assessment to evaluate this land use, and the results were presented and discussed with the regulating agencies in 2012. USFWS use of the on-site housing was temporarily suspended while the discussion of the Risk Assessment with the regulatory agencies is ongoing. In 2013 the regulatory agencies agreed that Bunkhouse use could be resumed on a case-by-case basis.

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 dense non-aqueous phase liquids (DNAPL) will be continued.

An Explanation of Significant Differences (ESD) for Lime Basins (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).

## 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:** OU-NW, SWP, W-MP, OU-N, HWL, ELF, A-A, ICS, NCSA-3, NW-A, N-NP

**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**

# IRP Summary

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

Site ID	Site Name	Action	Remedy	FY	Cost
N-NP	NORTH BOUNDARY CONTAINMENT SYSTEM	IRA	GROUND WATER TREATMENT	1980	\$13,000.0 K
FWASTEPILE	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

## IRP Summary

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

Site ID	Site Name	Action	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	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1996	\$3,000.0 K
AT	ABOVE GROUND STORAGE TANKS IRA	IRA	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	FRA	OTHER	1996	\$1.0 K
PCB-STRUC.	PCB REMOVAL	IRA	OTHER	1996	\$500.0 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	AGENT TESTING-STORAGE YD.	FRA	CAPPING	1999	\$485.0 K
ESA-3B	AGENT TESTING-OLD TSY	FRA	CAPPING	1999	\$485.0 K



## IRP Summary

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

Site ID	Site Name	Action	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

## IRP Summary

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

Site ID	Site Name	Action	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	SOUTH PLANTS-DRAINAGE DITCHES	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

## IRP Summary

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

Site ID	Site Name	Action	Remedy	FY	Cost
NPSA-3	AGENT TESTING-GB	FRA	CAPPING	2002	TBD
NPSA-5	MANUFACTURING AREA 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 CONTAMINATION	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

## IRP Summary

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

Site ID	Site Name	Action	Remedy	FY	Cost
NCSA-5A	SECONDARY BASINS-BASIN B	FRA	CAPPING	2003	\$405.0 K
ESA-2B	SANITARY LANDFILLS-SANIT. LANDFILL	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: 197601

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201107/204609

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

# 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 (PA)site inspection (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 December 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 October 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 waste pile.

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, and 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 (CSRG) 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.

## IRP Previous Studies

Year	Title	Author	Date
1984	Number Two (2) (South Plants) Contract Number DAAK11-84-D-0017	RMA	MAR-1984
	RMA Off-post 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	US Army Toxic and Hazardous Materials Agency (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
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		ES&E, RMA	SEP-1986

## IRP Previous Studies

1986

Title	Author	Date
Appendices Contract Number DAAK-11-84-D-0016		
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
Letter Technical Plan Task 36 RMA North Boundary System (NBS) Component Remedial Action (RA)	ES&E, RMA	FEB-1987

## IRP Previous Studies

1987

Title	Author	Date
Assessment; Soil Bentonite Barrier Assessment - Project Number 86958		
Final Technical Plan Task Number 7 Phase I Survey of Lower Lakes Area Contract Number DAAK11-84-D-0017	RMA & EBASCO	FEB-1987
Final Technical Plan Volume I Task Number 18 (Air Monitoring) Contract Number DAAK11-84-D-0016	ES&E, RMA	FEB-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
Technical Plan for RMA Innovative Technology Development	Department of the Army	MAR-1987
Final Phase I Contamination Assessment Report (CAR) Site 36-8: Chemical Drainage Ditch Task Number One (1) (Section 36) (Version 3.1) Contract Number DAAK11-84-D0016	ES&E, RMA	MAR-1987
Final Phase I Contamination Assessment Report (CAR) Site 36-11: Liquid Storage Pool (Version 3.1) Task Number One (1) (Section 36) Contract Number DAAK11-84-D0016	Harding Lawson Associates (Lawson), Midwest Research Inst (Midwest)	APR-1987
Final Phase I Contamination Assessment Report (CAR) Site 36-8: Chemical Drainage Ditch Task Number One (1) (Section 36) (Version 3.2) Contract Number DAAK11-84-D0016	ES&E, RMA	APR-1987
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	APR-1987
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
Final Phase I Contamination Assessment Report (CAR) Site 36-21: Drainage Ditch (Version 3.2) Task Number One (1) (Section 36) Contract Number DAAK11-84-D0016	ES&E, RMA	APR-1987
Final Contamination Assessment Report (CAR) Section Number One (1) Uncontaminated Area Version 3.3 Task Number 7 - Lower Lakes Contract Number DAAK11-84-D-0017	RMA & EBASCO	APR-1987
Final Phase I Contamination Assessment Report (CAR) Site 1-12 Trash Dump Version 3.2 Task Number 12 Derby Lakes Area Contract Number DAAK11-84-D-0017	RMA & EBASCO	APR-1987
Final Phase I Contamination Assessment Report (CAR) Site 12-2 Rod and Gun Club Pond Version 3.3 Contract Number DAAK11-84-D-0017	RMA & EBASCO	APR-1987
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
Final Phase I Contamination Assessment Report (CAR) Site 2-6 Salt Storage Pad Version 3.2 Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	APR-1987



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Title	Author	Date
Final Laboratory Test Plan For Incineration of Basin F Wastes at RMA Task Number 17 Contract Number DAAK11-84-D-0017	RMA & EBASCO	APR-1987
Letter Technical Plan for Task 20 at Sites 2-10, 2-11, 2-15 and 2-16 (This document can be found in a packet under RMA Information Center (RIC) Number 88012R13) Contract Number DAAK11-84-D-0017	RMA & EBASCO	APR-1987
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-1987
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
Final Phase I Contamination Assessment Report (CAR) Site 36-11: Liquid Storage Pool (Version 3.2) Task Number One (1) (Section 36) Contract Number DAAK11-84-D0016	ES&E, RMA	MAY-1987
Final Phase I Contamination Report Site 36-3: Insecticide Pit (Version 3.1) Task Number One (1) (Section 36):	ES&E, RMA, Lawson, Midwest	MAY-1987
Final Phase I Contamination Assessment Report (CAR) Site 36-4: Lime Settling Basins (Version 3.1) Task Number One (1) (Section 36) Contract Number DAAK11-84-D0016	ES&E, RMA, Lawson, Midwest	MAY-1987
Final Phase I Contamination Assessment Report (CAR) Section Number Two Uncontaminated Area Version 3.3 Task Number 7 - Lower Lakes Contract Number DAAK11-84-D-0017	RMA & EBASCO	MAY-1987
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
Letter Technical Plan Task 36 RMA North Boundary System (NBS) Component Remedial Action (RA) Assessment; Additional Denver Formation Monitoring - Project Number 86958	ES&E, RMA	MAY-1987
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
Final Phase I Contamination Assessment Report (CAR) Site 36-4: Lime Settling Basins (Version 3.3) Task Number One (1) (Section 36) Contract Number DAAK11-84-D0016	ES&E, RMA	JUN-1987
Technical Plan Version 2.2 Task Number 42 Phase I Survey of North Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUN-1987
Final Technical Plan Task Number 27 Hazardous Waste Land Disposal Facility Concept Design Study Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUN-1987
Final Phase I Contamination Assessment Report (CAR)	ES&E, RMA, Midwest	JUN-1987

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Title	Author	Date
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 DAAK11-84-D-0017	RMA & EBASCO	JUN-1987
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
Final Phase I Contamination Assessment Report (CAR) Site 36-3: Insecticide Pit (Version 3.2) Task Number One (1) (Section 36) Contract Number DAAK11-84-D0016	ES&E, RMA, Lawson, Midwest	JUN-1987
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
Final Phase I Contamination Assessment Report (CAR) Section 12 Uncontaminated Area Version 3.2 Task Number 15 - Army Sites-South Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUL-1987
Final Phase I Contamination Assessment Report (CAR) Site 36-15: Burning Site (Version 3.2) Task Number One (1) (Section 36) Contract Number DAAK11-84-D0016	ES&E, RMA	JUL-1987
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
Final Phase I Contamination Assessment Report (CAR) Site 2-5 Trench Version 3.2 Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUL-1987
Final Phase I Contamination Assessment Report (CAR) Site 2-13 Former Open Storage Area Version 3.2 Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUL-1987
Final Phase I Contamination Assessment Report (CAR) Sites 2-14a and 2-14b Sanitary Landfills Version 3.2 Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUL-1987
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
Final Phase I Contamination Assessment Report (CAR) Site 36-1: Basin A (Version 3.2) Task Number One (1) (Section 36) Contract Number DAAK11-84-D0016	ES&E, RMA	JUL-1987
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
RMA Water Quantity/Quality Survey Final Initial Screening Program Report Volume II Task Number Four (4) Contract Number DAAK11-84-D-0016	ES&E, RMA	AUG-1987
RMA Water Quantity/Quality Survey Final Initial Screening Program Report Volume III Task Number Four (4) Contract Number DAAKJ11-84-D-0016	ES&E, RMA	AUG-1987
Final Phase I Contamination Assessment Report Section Number 26-Uncontaminated (Version 3.3) Task Number Six (6) (Sections 26 and 35) (Prepared under Task Number 19) Contract Number DAAK11-84-D-0016	ES&E, RMA	SEP-1987
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
Revision of Letter Technical Plan for Task Number 20 - Soil Gas Study at Site 3-4	RMA & EBASCO	SEP-1987
Revision to Letter Technical Plan for Task Number 20 Proposal to Drill Additional Borings for Follow-On Phase	RMA & EBASCO	SEP-1987

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II Field Program at Site 1-1		
Selection and Determination of ARAR Impact for Basin F Interim Action	Department of Army	OCT-1987
Final Phase I Contamination Assessment Report (CAR) Site 26-4: Basin D (Version 3.3) Task Number Six (6) (Sections 26 And 35) (Prepared under Task Number 19) Contract Number DAAK11-84-0016	ES&E, RMA	OCT-1987
Final Western Tier Trichloroethylene (TCE) Investigation Technical Plan Version 3.1 Task Number 38 Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1987
Phase II Data Addendum Site 2-9 Open Storage Area Version 0.1, Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1987
Final Technical Plan Volume II Structures Survey Program Version 3.1 Task Number 24 Contract Number DAAK11-84-D-0017	RMA & EBASCO	NOV-1987
Letter Technical Plan Extended Phase I Survey of North Plants Version 2.1 Task Number 42 Contract Number DAAK11-84-D-0017	RMA & EBASCO	NOV-1987
Final Phase I Contamination Assessment Report (CAR) Section 35 - Uncontaminated (35-Unc) (Version 3.3) Task Number Six (6) (Sections 26 and 35) (Prepared under Task Number 19) Contract Number DAAK11-8	ES&E, RMA	NOV-1987
Final Technical Plan Phase I Survey of Army Sites - South Version 3.2 Task Number 15 Contract Number DAAK11-84-D-0017	RMA & EBASCO	NOV-1987
RMA Final Technical Plan Phase I Survey of North Plants Version 3.2 Task Number 42 Contract Number DAAK11-84-D-0017	RMA & EBASCO	NOV-1987
Final Technical Plan Version 3.1 Task Number 10 Sewer and Process Water System Investigations Contract Number DAAK11-84-D-0017	RMA & EBASCO	NOV-1987
Final Technical Plan Phase I - Volume I Version 3.2 Task Number 24 Program for Army Spill Sites Contract Number DAAK11-84-D-0017	RMA & EBASCO	NOV-1987
Final Technical Plan Version 3.2 Task Number 32 - Sampling Wastes Handling Contract Number DAAK11-84-D-0017	RMA & EBASCO	NOV-1987
RMA Off-post Assessment Contamination Assessment Report (CAR) Volume I Final Report Contract Number DAAK11-83-D-007	ES&E, RMA	DEC-1987
RMA Off-post Assessment Contamination Assessment Report (CAR) Volume II Final Report Contract Number DAAK11-83-D-007	ES&E, RMA	DEC-1987
RMA Off-post Assessment Contamination Assessment Report (CAR) Volume III Final Report Contract Number DAAK11-83-D-007	ES&E, RMA	DEC-1987
Final Technical Plan Version 3.1 Task Number 31 Basin F Interim Response Action (IRA) Support Contract Number DAAK11-84-D-0017	RMA & EBASCO	DEC-1987
Final Phase I Contamination Assessment Report (CAR) Site 36-17: Complex Disposal Activity Version 3.1 Task Number One (1) (Section 36) Contract Number DAAK11-84-D0016	ES&E, RMA, Midwest	DEC-1987

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Title	Author	Date
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
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 III Data Listings	RMA	DEC-1987
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
Final Phase I Contamination Assessment Report (CAR) Site 26-3: Basin C (Version 3.3) Task Number Six (6) (Sections 26 And 35) Contract Number DAAK11-84-	ES&E, RMA	DEC-1987

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	D0016		
	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
1988	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
	Final Phase I Contamination Assessment Report (CAR) Site 36-12: Pits / Trenches (Version 3.2) Task Number	ES&E, RMA	JAN-1988

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Title	Author	Date
One (1) (Section 36) Contract Number DAAK11-84-D0016		
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
Final Phase I Contamination Assessment Report Site 36-6: Probable Test Site with Trench (Redesignated As Site 25-16) (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 36-2: 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) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D0016	ES&E, RMA	FEB-1988
Final Phase I Contamination Assessment Report (CAR) Site 36-19: Grading Scars (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 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
Water Quantity / Quality Survey Letter Technical Plan -	ES&E, USATHAMA, RMA	FEB-1988

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Title	Author	Date
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
Final Phase I Contamination Assessment Report (CAR) Section 25 - Nonsource Area (Version 3.2) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D- 0016	ES&E, RMA	MAR-1988
Final Phase I Contamination Assessment Report (CAR) Section 29 - Nonsource Area (Version 3.2) Task Number 14 (Army Sites North) Contract Number DAAK11-84- D0016	ES&E, RMA	MAR-1988
Final Phase I Contamination Assessment Report (CAR) Site 35-7: Firing Range (Version 3.1) Task Number 14 (Army Sites North) Contract Number DAAK11-84- D0016	ES&E, RMA	MAR-1988
Final Phase I Contamination Assessment Report (CAR) Site 36-22: Liquid Storage Pool (Version 3.2) Task Number One (1) (Section 36) Contract Number DAAK11-84-D0016	ES&E, RMA	MAR-1988
Final Phase I Contamination Assessment Report (CAR) Site 24-7 North Bog (Version 3.2) Task Number 7 - Army Sites South Contract Number DAAK11-84-D- 0017	RMA & EBASCO	MAR-1988
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
Technical Plan Version 3.2 Task Number 34 Hydrazine Blending and Storage Facility (HBSF) Wastewater Treatment and Decommissioning Assessment Contract Number DAAK11-84-D-0017	RMA & EBASCO	APR-1988



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Title	Author	Date
Final Contamination Assessment Report (CAR) Sanitary Sewer Interceptor Line Version 3.2 Task Number 10 Contract Number DAAK11-84-D-0017	RMA & EBASCO	APR-1988
Biota Assessment Letter Technical Plan Task Number Nine (9) Contract Number DAAK11-84-D-0016	ES&E, RMA	APR-1988
Final Phase I Contamination Assessment Report (CAR) Site 4-3 Burning Pit Version 3.2 Task Number 15 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	APR-1988
Final Phase I Contamination Assessment Report (CAR) 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	RMA & EBASCO	APR-1988
Final Phase I Contamination Assessment Report (CAR) Section Number 33 Nonsource Area Version 3.1 Task Number 15 - Army Sites South Contract Number DAAK11-84-D-0017	RMA & EBASCO	APR-1988
Feasibility Study (FS) Technical Plan Version 3.2 Contract Number DAAK11-84-D-0016	ES&E, RMA	APR-1988
Final Phase I Contamination Assessment Report (CAR) Site 26-6: Basin F (Version 3.2) Task Number Six (6) (Sections 26 and 35) (Prepared under Task Number 19) Contract Number DAAK11-84-D-0016	ES&E, RMA, Midwest	APR-1988
RMA Chemical Index Volume III Chemical Specific Applicable or Relevant and Appropriate Requirements (ARAR) for On-post Operable Unit (OU), RMA	RMA & EBASCO	MAY-1988
Final Phase I Contamination Assessment Report Site 5-2 Potential Mustard (H) and Distilled Mustard (HD) Contamination Version 3.2 Task Number 15 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	MAY-1988
Water Quantity / Quality Survey Final Screening Program Third and Fourth Quarters Final Report (Version 3.1) Volume II Task Number Four (4) Contract Number DAAK11-84-D-0016	ES&E, RMA	MAY-1988
Water Quantity / Quality Survey Final Screening Program Third and Fourth Quarters Final Report (Version 3.1) Volume I Task Number Four (4) Contract Number DAAK11-84-D-0016	ES&E, RMA	MAY-1988
Water Quantity / Quality Survey Final Screening Program Third and Fourth Quarters Final Report (Version 3.1) Volume III Task Number Four (4) Contract Number DAAK11-84-D-0016	ES&E, RMA	MAY-1988
North Boundary System (NBS) Component Response Action Assessment Final Technical Plan (Version 3.2) Task Number 36 Contract Number DAAK11-84-D-0016	ES&E, RMA	MAY-1988
Final Phase I Contamination Assessment Report (CAR) Section Number 20 - Nonsource Area (Version 3.1) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D-0016	ES&E, RMA	MAY-1988
Final Phase I Contamination Assessment Report (CAR) Site 30-3 Mustard Training Area (Version 3.1) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D-0016	ES&E, RMA	MAY-1988
Final Phase I Contamination Assessment Report (CAR) Site 35-2/26-9 Chemical Sewer (Version 3.1) Task	ES&E, RMA	MAY-1988

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Number 14 (Army Sites North) Contract Number DAAK11-84-D0016		
Final Phase I Contamination Assessment Report (CAR) Site 31-7 Toxic Storage Yard Storage Sheds Version 3.1 Task Number 15 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	MAY-1988
Final Phase I Contamination Assessment Report (CAR) Section Number 36-Nonsource Area (Version 3.2) Task Number One (1) Contract Number DAAK11-84-D0016	ES&E, RMA	MAY-1988
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
Final Phase I Contamination Assessment Report (CAR) Site 32-6 Burning Pits Version 3.1 Task Number 15 - Army Sites-South Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUN-1988
Final Technical Plan Task Order Number 35 Endangerment Assessment (EA) RMA Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUN-1988
Final Phase I Contamination Assessment Report (CAR) Site 6-6 Former Toxic Gas Storage Yard Version 3.2 Task Number 15 Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUN-1988
Final Phase I Contamination Assessment Report (CAR) Site 31-4 Toxic Storage Yard Version 3.1 Task Number 15 Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUN-1988
Final Phase I Contamination Assessment Report (CAR) Site 31-6 Toxic Storage Yard Storage Sheds Version 3.2	RMA & EBASCO	JUN-1988

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Task Number 15 Contract Number DAAK11-84-D-0017		
Final Phase I Contamination Assessment Report (CAR) Section Number Four (4) Nonsource Area Version 3.2 Task Number 15 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUN-1988
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
Final Phase I Contamination Assessment Report (CAR) Section Number 32 Nonsource Area Version 3.1 Task Number 15 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	JUN-1988
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
Overall Soil Assessment and Groundwater Integration Final Technical Plan (Version 3.1) Volume II Task Number 23 Contract Number DAAK11-84-D-0016	ES&E, RMA	JUN-1988
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
Task Number 30 Sump 1727 Interim Response Action (IRA) Alternatives Assessment Final Report Version 3.2 Contract Number DAAK11-84-D-0016	ES&E, RMA	JUL-1988
Final Groundwater Intercept and Treatment System North of Basin F Interim Response Action (IRA) Alternatives Assessment Version 3.1	RMA & EBASCO	JUL-1988
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
Biota Assessment Phase I Final Technical Plan (Version 3.2) Task Number Nine (9) Contract Number DAAK11-84-D-0016	ES&E, RMA	JUL-1988
Biota Assessment Phase II Final Technical Plan (Version 3.2) Task Number Nine (9) Contract Number DAAK11-84-D-0016	ES&E, RMA	JUL-1988
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
Final Phase I Contamination Assessment Report (CAR) Section Number 34 - Nonsource Area (Version 3.2) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D0016	ES&E, RMA	JUL-1988
Final Phase I Contamination Assessment Report (CAR) Site 32-5 Burning Pits Version 3.2 Task Number 15 - Army Sites - South Contract Number DAAK11-84-D-	RMA & EBASCO	JUL-1988

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0017		
Overall Soil Assessment and Groundwater Integration Final Technical Plan (Version 3.2) Volume I Task Number 23 Contract Number DAAK11-84-D-0016	ES&E, RMA	JUL-1988
Overall Soil Assessment and Groundwater Integration Final Technical Plan (Version 3.2) Volume II Task Number 23 Contract Number DAAK11-84-D-0016	ES&E, RMA	JUL-1988
Final Phase II Data Addendum Site 26-1: Deep Disposal Well (Version 3.2) Contract Number DAAK11-84-D-0016	ES&E, RMA	AUG-1988
Final Phase II Data Addendum Section Number 26- Nonsource Area (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	AUG-1988
Final Contamination Assessment Report (CAR) Sanitary Sewer - Railyard and Administration Areas Version 3.2 Task Number 10 Contract Number DAAK11-84-D-0017	RMA & EBASCO	AUG-1988
Final Phase II Data Addendum Site 19-1: Burn Site (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	AUG-1988
Final Phase I Contamination Assessment Report (CAR) Section Number 23 - Nonsource Area (Version 3.3) Task Number 14 (Army Sites - North) (Prepared under Task Number 21) Contract Number DAAK11-84-D-0016	ES&E, RMA	AUG-1988
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
Final Phase II Data Addendum Section Number 29 - Nonsource Area (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	AUG-1988
Final Phase II Data Addendum Section Number 30 - Nonsource Area (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	AUG-1988
Final Phase II Data Addendum Site 35-7: Firing Range (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	AUG-1988
Final Phase II Data Addendum Site 36-19: Grading Scars (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	AUG-1988
Final Phase II Data Addendum Site 36-23: Scrap Metal Storage / Parking Lot (Version 3.1) Contract Number DAAK11-8-D-0016	ES&E, RMA	AUG-1988
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
Final Contamination Assessment Report (CAR) Process Water System Version 3.2 Task Number 10 Contract Number DAAK11-84-D-0017	RMA & EBASCO	AUG-1988
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-0016	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
RMA Final Report Technology Inventory and Screening (Version 3.1) Task Number 28 Contract Number DAAK11-84-D0016	ES&E, RMA	AUG-1988
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 1-5 Lime Pits Version 3.1 Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	SEP-1988
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
Final Contamination Assessment Report (CAR) Chemical Sewers - North Plants and South Plants Version 3.2 Task Number 10 Contract Number DAAK11-84-D-0017	RMA & EBASCO	SEP-1988
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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Number DAAK11-84-D0016		
Final Phase I Contamination Assessment Report (CAR) Site 36-16 Incendiary Burial Site (Version 3.2) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D0016	ES&E, RMA	SEP-1988
Final Volume Number One (1) Summary Report for Incineration of Basin F Wastes at RMA Task Number 17 Contract Number DAAK11-84-D-0017	RMA & EBASCO	SEP-1988
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
Final Phase II Data Addendum Site 35-3: Basin B (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	SEP-1988
Final Phase II Data Addendum Site 26-4: Basin D (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	SEP-1988
Final Phase II Data Addendum Site 26-5: Basin E (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	SEP-1988
Final Phase II Data Addendum Site 35-4: Drainage Ditches (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	SEP-1988
Final Phase II Data Addendum Section Number 35-Nonsource Area (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	SEP-1988
Boundary Systems Monitoring Final Technical Plan Task Number 25 Contract Number DAAK11-84-D-0016	ES&E, RMA	SEP-1988
Final Report Task Number 27 Volume I - Report Hazardous Waste Land Disposal Facility Assessment Contract Number DAAK11-84-D-0017	RMA & EBASCO	SEP-1988
Final Report Task Number 27 Volume II - Appendices Hazardous Waste Land Disposal Facility Assessment Contract Number DAAK11-84-D-0017	RMA & EBASCO	SEP-1988
Final Phase I Contamination Assessment Report (CAR) Site 20-1: 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 Section Number 25 - Nonsource Area (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	SEP-1988

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Final Phase I Contamination Assessment Report (CAR) Site 29-5: Bomb Disposal Site (Includes 32-1) (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 30-1: 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
Final Phase I Contamination Assessment Report (CAR) Site 36-14 Mustard Plant Disposal Site (Version 3.2) Task Number 14 (Army Sites North) Contract Number DAAK11-84-D0016	ES&E, RMA	SEP-1988
Final Phase I Contamination Assessment Report (CAR) North Plants Complex Version 3.2 Task Number 42 - North Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	SEP-1988
Final Phase II Data Addendum Site 36-1: Basin A (Version 3.1) Contract Number DAAK11-84-D-0016	ES&E, RMA	SEP-1988
Final Phase II Data Addendum Site 1-11 Sanitary Landfill Version 3.1 Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	SEP-1988
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
Final Phase II Data Addendum Site 2-3 Lagoon Version 3.1 Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	SEP-1988
Final Phase II Data Addendum Site 2-7 Aeration Basin Version 3.1 Task Number Two (2) - South Plants	RMA & EBASCO	SEP-1988

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Contract Number DAAK11-84-D-0017		
Final Phase II Data Addendum Site 2-9 Open Storage Area Version 3.1 Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	SEP-1988
Final Phase II Data Addendum Site 2-13 Former Open Storage Area Version 3.1 Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	SEP-1988
Final Phase II Data Addendum Site 4-3 Burning Pit Version 3.1 Task Number 22 - Army Sites-South Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 32-5 Burning Pits Version 3.1 Task Number 22 - Army Sites-South Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 4-2 Burning Pit Version 3.1 Task Number 22 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 32-6 Burning Pits Version 3.1 Task Number 22 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 5-2 Potential Mustard (H) and Distilled Mustard (HD) Contamination Version 3.1 Task Number 22 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 4-4 Open Storage and Salvage Yard Support Areas Version 3.1 Task Number 22 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 6-6 Former Toxic Gas Storage Yard Version 3.1 Task Number 22 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 4-5 Burning Pits Version 3.1 Task Number 22 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 31-4 Toxic Storage Yard Version 3.1 Task Number 22 - Army Sites-South Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Section 11-Unc Nonsource Area Version 3.1 Task Number 22 - Army Sites-South Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Section 12-Unc Nonsource Area Version 3.1 Task Number 22 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 31-6 Toxic Storage Yard Storage Sheds Version 3.1 Task Number 22 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 31-7 Toxic Storage Yard Storage Sheds Version 3.1 Task Number 22 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Section 4-Unc Nonsource Area Version 3.1 Task Number 22 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988



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Final Phase II Data Addendum Section 9-Unc Nonsource Area Version 3.1 Task Number 22 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Section 6-Unc Nonsource Area Version 3.1 Task Number 22 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Section 31-Unc Nonsource Area Version 3.1 Task Number 22 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Section 32-Unc Nonsource Area Version 3.1 Task Number 22 - Army Sites - South Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 1-1 Drainage Ditches Version 3.1 Task Number 20 - Lower Lakes Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 1-6 Former Ton Container (TC) Storage Area Version 3.1 Task Number 20 - Lower Lakes Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 1-9 Open Storage Area Version 3.1 Task Number 20 - Lower Lakes Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 1-12 Trash Dump Version 3.1 Task Number 20 - Derby Lakes Area Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Section 1-Unc Nonsource Area Version 3.1 Task Number 20 - Lower Lakes Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 2-1 Drainage Ditches Version 3.1 Task Number 20 - Lower Lakes Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 2-10/11/15/16 Ground Scar/Open Storage/Open Storage/Pit Version 3.1 Task Number 20 - Lower Lakes Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 3-2/3-3 Drainage Ditch and Overflow Basin Version 3.1 Task Number 20 - Lower Lakes Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 6-2 Eastern Upper Derby Lake (Upper Derby Lake Overflow) Version 3.1 Task Number 20 - Lower Lakes Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 11-1 Buried Lake Sludge Version 3.1 Task Number 20 - Lower Lakes Survey Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 12-1 Buried Lake Sludge Version 3.1 Task Number 20 - Lower Lakes Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 12-2 Rod and Gun Club Pond Version 3.1 Task Number 20 - Lower Lakes Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 24-6 Sewage Treatment Plant Version 3.1 Task Number 20 - Lower Lakes Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988

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Final Phase II Data Addendum Site 24-7 North Bog Version 3.1 Task Number 20 - Lower Lakes Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 30-4 Sanitary Landfill Version 3.1 Task Number 20 - Lower Lakes Survey Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 1-3 Mounded Material Version 3.1 Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 1-8 Salvage Yard Version 3.1 Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 2-5 Trench Version 3.1 Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 2-6 Open Storage Area Version 3.1 Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 2-8 Former Tank Storage Area Version 3.1 Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 2-12 Former Tank Location Version 3.1 Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 2-14a Sanitary Landfill Version 3.1 Task Number Two (2) - South Plants Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
Final Phase II Data Addendum Site 2-17 Lake Ladora and Lake Mary Version 3.1 Task Number 20 - Lower Lakes Contract Number DAAK11-84-D-0017	RMA & EBASCO	OCT-1988
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Final RI/FS Work Plan RMA On-Post Feasibility Study (FS) Version 3.2 Contract Number DAAA15-88-D-0024	EBASCO & RMA	MAR-1990
Final Decision Document for Other Contamination Sources Interim Response Action (IRA) Rail Classification Yard, RMA	Morrison-Knudsen Engineers, Inc.	MAR-1990
Implementation Document for North Boundary System (NBS) Improvements Interim Response Action (IRA) Treatment System Modifications Volume II Engineering Specifications	Morrison-Knudsen Engineers, Inc.	MAR-1990
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Final Decision Document for the Interim Response Action (IRA) at the Lime Settling Basins RMA Version 4.0 Contract Number DAAA15-88-D-0022/0002	Woodward-Clyde	MAR-1990
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Report of Field Investigations, Assessment, and Proposed Decision Document for the Northwest Boundary System (NWBS) Short Term Improvements Interim Response Action (IRA), RMA	Shell Oil Co.	APR-1990
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Final Decision Document for the CERCLA Wastewater Treatment System Interim Response Action (IRA)	RMA	JUN-1990
Supplemental Letter Technical Plan Regarding the Making of a Detailed Topographic Map of Shell Trenches and Vicinity	Anderson, Michael T., Shell Oil Co.	JUN-1990
Responses to Technical Comments on the 30 Percent (Preliminary) Design Package	RMA	JUN-1990
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Letter Technical Plan for Work Proposed to Obtain Saturated Sediment Samples from the South Tank Farm Plume (STFP) Area	Shell Oil Co.	JUL-1990
Concept Design Analysis CERCLA Wastewater Treatment Plant RMA Colorado - 30 Percent Design Document	Corps of Engineers	JUL-1990
35 Percent Design Analysis for Cutoff Walls and Cap for Lime and M-1 Settling Basins	Corps of Engineers	JUL-1990
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Supplemental Letter Technical Plan for Work Proposed for the South Tank Farm Plume (STFP) Interim Response Action	Anderson, Michael T., Shell Oil Co.	AUG-1990
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Final Alternatives Assessment Other Contamination Volume II, Task Number 25 Contract Number DAAK11-84-D-0016	Morrison-Knudsen Engineers, Inc.	AUG-1990
Laboratory Screening Studies on the Biodegradation of Organics in RMA Groundwater	Morrison-Knudsen Engineers, Inc.	AUG-1990
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Boundary Control Systems Assessment Remedial Investigation A Hydrogeologic Interpretation and Contaminant Assessment at the North and Northwest Boundaries	ES&E and EBASCO	AUG-1990
35 Percent Design Analysis for Cutoff Walls and Cap for Lime and M-1 Settling Basins Plates	Corps of Engineers	AUG-1990
Boundary Control Systems Assessment Remedial Investigation A Hydrogeologic Interpretation and Contaminant Assessment at the North and Northwest Boundaries Final Report (Version 3.1) Volume I, Task#25	EBASCO	AUG-1990
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Concept (30 Percent) Design Document In-situ Vitrification M-1 Settling Basins FY 00/00/91 (FY91)	Woodward-Clyde	SEP-1990
Letter Technical Plan for Fieldwork in Support of Possible Modifications to the Irondale Boundary System as Part of the Rail Classification Yard / Motor Pool Area Interim Response Actions	Anderson, Michael T., Shell Oil Co.	SEP-1990
Letter Technical Plan for Fieldwork in Support of the Proposed Extension of the Northwest Boundary System (NWBS) Short Term Improvements Interim Response Action	Anderson, Michael T., Shell Oil Co.	SEP-1990
Supplemental Letter Technical Plan for Work Proposed for the South Tank Farm Plume (STFP) Interim Response Action (IRA) to Abandon Wells within Lower Derby Lake Spillway and Embankment	Shell Oil Co.	SEP-1990

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Final Human Health Exposure Assessment (HHEA) for RMA Study Area Evaluations Volume VI-H North Plants Study Area Exposure Assessment Version 4.1 RI/FS Contract Number DAAA15-88-D-0024	EBASCO	SEP-1990
Final Human Health Exposure Assessment (HHEA) for RMA Executive Summary Version 4.1 RI/FS Contract Number DAAA15-88-D-0024	EBASCO	SEP-1990
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Final Human Health Exposure Assessment (HHEA) for RMA Study Area Evaluations Volume VI-D North Central Study Area Exposure Assessment Version 4.1 RI/FS Contract Number DAAA15-88-D-0024	EBASCO	SEP-1990
Final Human Health Exposure Assessment (HHEA) for RMA Study Area Evaluations Volume VI-E Central Study Area Exposure Assessment Version 4.1 RI/FS Contract Number DAAA15-88-D-0024	EBASCO	SEP-1990
Final Human Health Exposure Assessment (HHEA) for RMA Study Area Evaluations Volume VI-F Eastern Study Area Exposure Assessment Version 4.1 RI/FS	EBASCO	SEP-1990



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Final Human Health Exposure Assessment (HHEA) for RMA Volume VII Summary Exposure Assessment Version 4.1 RI/FS Contract Number DAAA15-88-D-0024	EBASCO	SEP-1990
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Response to USEPA and FWS Comments on the Preliminary Engineering Design Package for Rail Classification / Motor Pool Area Interim Response Action (IRA)	Morrison-Knudsen Engineers, Inc.	OCT-1990
Final Comprehensive Operational Monitoring Program Plan for the North Boundary Containment / Treatment System (NBS) at RMA Version 3.2	Brooks, Thomas A., Shell Oil Co.	OCT-1990
Preliminary Engineering Design Package for Shell Section 36 Trenches Interim Response Action	Morrison-Knudsen Engineers, Inc.	OCT-1990
Letter Technical Plan for Work Proposed Under the South Tank Farm Plume (STFP) Interim Response Action (IRA) to Replace the Abandoned Wells in Lower Derby Lake Spillway and Embankment	Anderson, Michael T., Shell Oil Co.	OCT-1990
Supplemental Letter Technical Plan for Work Proposed for the Shell Section 36 Trenches Interim Response Action (IRA), to Delineate the Areas of Disturbance Inside the Shell Trench Area	Anderson, Michael T., Shell Oil Co.	OCT-1990
Final Risk Assessment Sanitary Sewer Interim Response Action (IRA) Version 3.2 RI/FS Contract Number DAAA15-88-D0024	EBASCO	OCT-1990
Final Risk Assessment Screening Memorandum for Motor Pool Trichloroethylene (TCE) Plume and Railyard DBCP Plume Interim Response Actions (IRA) Version 3.1	EBASCO	OCT-1990
Specifications (For Final Review) Cutoff Walls and Cap for Lime and M-1 Settling Basins	Corps of Engineers	OCT-1990
Plans for Cutoff Walls and Cap for Lime and M-1 Settling Basins RMA	Corps of Engineers	NOV-1990
Technical Work Plan Light Nonaqueous Phase Liquid (LNAPL) Plume Soil Vapor Extraction (SVE) Process Field Demonstration Treatability Study	Morrison-Knudsen Engineers, Inc.	DEC-1990
Results of the Verification Monitoring Program South Tank Farm Plume (STFP)	Morrison-Knudsen Engineers, Inc.	DEC-1990
Final Implementation Document for the Interim Response Action (IRA) at the Army Complex Disposal Trenches Version 3.2 Contract Number DAAA05-90-C-0011	Greystone Environmental Services, Inc.	DEC-1990
Project Status Report Laboratory Studies on Biodegradation of Organics in South Tank Farm Plume (STFP) Aquifer Samples Biodegradation of Organics in STFP	Shell Development Co.	DEC-1990

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	Potential Migration of Contaminated Groundwater to Lakes Ladora and Lower Derby	Waterways	DEC-1990
	Final Risk Assessment Screening Memorandum for Motor Pool Contaminated Soil Interim Response Action	EBASCO	DEC-1990
	Final Risk Assessment Screening Memorandum for Army Complex Disposal Trenches Interim Response Action (IRA) Version 3.1	EBASCO	DEC-1990
	Final Risk Assessment Screening Memorandum for Shell Section 36 Trenches Interim Response Action	EBASCO	DEC-1990
	Soc Responses to the state of Colorado and the USEPA Comments on the 10/00/90 Preliminary Engineering Design Package for the Shell Section 36 Trenches Interim Response Action	Morrison-Knudsen Engineers, Inc.	DEC-1990
1991	Laboratory Studies on Biodegradation of Organics in the South Tank Farm Plume (STFP) Aquifer Soil and Microbiological Analyses of STFP Aquifer Core Samples	Salanitro, J.P. and Wisniewski, H.L., Shell Development Co.	JAN-1991
	Implementation Document for Rail Classification Yard / Motor Pool Area Interim Response Action (IRA) Volume I General Volume II Specifications	Morrison Knudsen Corp.	JAN-1991
	Implementation Document for Rail Classification Yard / Motor Pool Area Interim Response Action (IRA) Volume III Engineering Drawings	Morrison Knudsen Corp.	JAN-1991
	Selection of Representative Process Options (RPO) Memorandum On-Post Feasibility Study (FS) RMA Volume I Contract Number DAAA15-88-D-0024	Morrison Knudsen Corp.	JAN-1991
	Letter Technical Plan for Performing an Air Permeability Test in the South Tank Farm Plume (STFP) Area	Roe, George E., Shell Oil Co.	JAN-1991
	Letter Technical Plan for Conducting a Light Nonaqueous Phase Liquid Recovery Pumping Test (LRPT) in Support of South Tank Farm Plume (STFP) Treatability Study	Roe, George E., Shell Oil Co.	JAN-1991
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	Final Implementation Document for the Groundwater Intercept and Treatment System North of RMA Interim Response Action (IRA) Volume I of III Contract Number DAAA15-88-D-0021/0001	Lee & Ro Consulting Engineers	JAN-1991
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	Response to Comments by the state of Colorado, USEPA, and SOC on the Preliminary (30%) Design CERCLA Wastewater Treatment System Interim Response Action (IRA) RMA	RMA	JAN-1991

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Final Implementation Document for Other Contamination Sources Interim Response Action (IRA) Shell Section 36 Trenches, RMA Volume I General Volume II Specifications Volume III Drawings	Morrison Knudsen Corp.	MAR-1991
Final Ecological Risk Assessment Report Submerged Quench Incinerator (SQI) Task Interim Response Action (IRA) Number Two (2) Basin F Liquids Treatment Design Version 3.0 Contract Number DAAA15-88-D-0022/0001	Woodward-Clyde	MAR-1991
RMA Final Technical Plan Task Order 007 RMA Waste Management and Disposal Contract Number DAAA 15-88-D-0023	Roy F Weston Inc.	MAR-1991
Final Asbestos Survey of 32 Structures Version 3.1 RI/FS Contract Number DAAA15-88-D0024	EBASCO	MAR-1991
Hydrazine Blending and Storage Facility (HBSF) Interim Response Action (IRA) Final Implementation Document for Decommissioning (Phase I) Task IRA H Phase I Contract Number DAAA15-88-0021	Lawson	MAR-1991
Implementation Document for Northwest Boundary System (NWBS) Short Term Improvements Interim Response Action (IRA) Southwest Extension Volume I General, Volume II Engineering Specifications, Volume III Engineering Drawings Addendum to Final	Morrison Knudsen Corp.	APR-1991
Implementation Document for the Application of Dust Suppressant at Basin A (Section 36) of RMA	RMA	APR-1991
Letter Technical Plan for the Installation of Well Points, Nine Piezometers and Four Monitoring Wells Along the Northeastern Edge of Lake Ladora	Roe, George E., Shell Oil Co.	APR-1991
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Final Decision Document Other Contamination Sources Interim Response Action (IRA) South Tank Farm Plume (STFP)	Morrison-Knudsen Engineers, Inc.	MAY-1991
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Final Implementation Document Cutoff Walls and Cap for Lime and M-1 Settling Basins RMA	Corps of Engineers	JUN-1991
Specifications (for Construction Contract) Cutoff Walls and Cap for Lime and M-1 Settling Basins RMA	Corps of Engineers	JUN-1991
Plans for Cutoff Walls and Cap for Lime and M-1 Settling Basins RMA	Corps of Engineers	JUN-1991
Site-Specific Safety and Health Plan RMA Decommissioning of Hydrazine Blending and Storage Facility (HBSF) Commerce City, Colorado	Bernardi, Tammy, International Technology Corp.	JUL-1991
Asbestos Removal and Disposal Plan Decommissioning of Hydrazine Blending and Storage Facility (HBSF) RMA Contract Number DACW45-89-D-0504-0003	International Technology Corp.	JUL-1991
Final Letter Work Plan for the Hydrazine Blending and Storage Facility (HBSF) Groundwater Investigation Task Interim Response Action (IRA) H Phase I Contract Number DAAA15-88-D-0021	Lawson	JUL-1991
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Letter Technical Plan for the Installation of Replacement Wells in the South Tank Farm Plume (STFP) Area	Anderson, Michael T., Shell Oil Co.	AUG-1991
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Amendment to the Final Decision Document for the Interim Response Action (IRA) at the RMA Hydrazine Blending and Storage Facility (HBSF) Task IRA H Phase I Contract Number DAAA15-88-D-0021	Lawson	AUG-1991
Weston, Author: Final Technical Plan Task 005 Survey of Asbestos Containing Materials (ACM) Version 3.1 Contract Number DAAA 15-88-D-0023	Weston Solutions, Inc. (Weston)	SEP-1991
Letter Technical Plan for the Quarterly Water Level Monitoring Program for the South Tank Farm Plume (STFP)	Roe, George E., Shell Oil Co.	SEP-1991
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Addendum to Final Decision Document for the Chemical Process Related Activities Interim Response Action (IRA) RMA - Chapters IX and X	Tennessee Valley Authority	OCT-1991
Final Implementation Document for Decontamination and Dismantling of Chemical Process Related Equipment at the North Plants at RMA	Tennessee Valley Authority	OCT-1991

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Hydrazine Blending and Storage Facility (HBSF) Interim Response Action (IRA) Air Modeling Letter Report Task IRA H Phase I Contract Number DAAA15-88-D-0021	Lawson	OCT-1991
Hydrazine Blending and Storage Facility (HBSF) Interim Response Action (IRA) Final Implementation Document for Rinse Water Transfer (Phase II) Task IRA H Phase I Contract Number DAAA15-88-0021	Lawson	NOV-1991
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Final Appendix E to the Final Technical Plan Task Order 005 Modified Health and Safety Plan for Survey of Asbestos Containing Materials (ACM) in Selected Former Chemical Agent and Pesticide Related Buildings Version 3.0 Contract Number DAA15-88-D-0023	Weston	DEC-1991

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Final Remedial Investigation (RI) Summary Report Appendix A - Environmental Setting, RI Approach, Nature and Extent of Contamination - A1 and A3 Figures and Plates Version 3.2 Contract Number DAAA15-88-D-0024	EBASCO	JAN-1992
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Final Implementation Document for Northwest Boundary System (NWBS) Long Term Improvements Interim Response Action (IRA) Volume I General Volume II Engineering Specifications Volume III Engineering Drawings	Morrison Knudsen Corp.	JAN-1992
Off-post Operable Unit (OU) Remedial Investigation (RI) Final Addendum - Volume I of II Contract Number DAAA15-88-0021	Lawson	MAR-1992
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Constitutes a Letter Technical Plan for the Annual Groundwater Sampling Program for the South Tank Farm Plume (STFP) Interim Response Action (IRA)	Roe, George E., Shell Oil Co.	MAR-1992
Volume I of V Summary and Methodologies Final Report Task 005 Survey of Asbestos Containing Materials (ACM) at the RMA Version 3.0 Contract Number DAAA15-88-D-0023	Weston	APR-1992
Volume II of V Structure Numbers 0112 through 0415 Final Report Task 005 Survey of Asbestos Containing Materials (ACM) at the RMA Version 3.0 Contract Number DAAA15-88-D-0023	Weston	APR-1992
Volume III of V Structure Numbers 0416 through 0646 Final Report Task 005 Survey of Asbestos Containing Materials (ACM) at the RMA Version 3.0 Contract Number DAAA15-88-D-0023	Weston	APR-1992
Volume IV of V Structure Numbers 0647a through 1512 Final Report Task 005 Survey of Asbestos Containing Materials (ACM) at the RMA Version 3.0 Contract Number DAAA15-88-D-0023	Weston	APR-1992
Constitutes a Letter Technical Plan for Drilling Boreholes in Sections 1 and 2 in the South Tank Farm Area	Roe, George E., Shell Oil Co.	APR-1992
Volume V of V Structure Numbers 1601 through V1313 Final Report Task 005 Survey of Asbestos Containing Materials (ACM) RMA Version 3.0 Contract Number DAAA15-88-D-0023	Weston	APR-1992
Final Detailed Analysis of Alternatives (DAA) Task Plan Version 3.1 Contract Number DAAA05-92-C-0001	EBASCO	JUL-1992
Basin F Liquid Storage Tank 102 Decontamination Field Demonstration RMA, Colorado - 100 Percent Design (Implementation Document Volume II - Part IV)	Woodward-Clyde	AUG-1992
Final Risk Assessment Screening Memorandum for M-1 Settling Basins Interim Response Action (IRA) Version 3.1	EBASCO	AUG-1992
Basin F Liquid Storage Tank 102 Decontamination Field Demonstration Implementation Document Volume II, Part IV RMA	Corps of Engineers	AUG-1992
Constitutes a Letter Technical Plan for Additional Groundwater Sampling in the South Tank Farm Plume	Roe, George E., Shell Oil Co.	SEP-1992

## IRP Previous Studies

1992

Title	Author	Date
(STFP) Area		
Final Implementation Document for One Ton Container (TC) Cut and Scrape Operations at RMA	Tennessee Valley Authority	SEP-1992
Final Explanation of Significant Differences (ESD) Chemical Process Related Activities Interim Response Action (IRA)	RMA	NOV-1992
RMA Interim Response Action (IRA) Phase II Hydrazine Blending and Storage Facility (HBSF) IRA Implementation Final Decommissioning Technical Report Contract Number DAAA15-88-D-0021	Lawson	NOV-1992
Off-Post Operable Unit (OU) Endangerment Assessment (EA) / Feasibility Study (FS) Final Report Volume I of VIII (Introduction) Task RI/FS Contract Number DAAA15-88-0021	Lawson	NOV-1992
Off-Post Operable Unit (OU) Endangerment Assessment (EA) / Feasibility Study (FS) Final Report Volume II of VIII (EA Sections 1.0, 2.0, 3.0) Task RI/FS Contract Number DAAA15-88-0021	Lawson	NOV-1992
Off-Post Operable Unit (OU) Endangerment Assessment (EA) / Feasibility Study (FS) Final Report Volume III of VIII (EA Sections 4.0, 5.0, 6.0, 7.0) Task RI/FS Contract Number DAAA15-88-0021	ES&E and Lawson	NOV-1992
Off-Post Operable Unit (OU) Endangerment Assessment (EA) / Feasibility Study (FS) Final Report Volume IV of VIII (EA Appendixes) Task RI/FS Contract Number DAAA15-88-0021	Lawson	NOV-1992
Off-Post Operable Unit (OU) Endangerment Assessment (EA) / Feasibility Study (FS) Final Report Volume V of VIII (FS Sections 1.0, 2.0) Task RI/FS Contract Number DAAA15-88-0021	Lawson	NOV-1992
Off-Post Operable Unit (OU) Endangerment Assessment (EA) / Feasibility Study (FS) Final Report Volume VI of VIII (FS Sections 3.0, 4.0, 5.0) Task RI/FS Contract Number DAAA15-88-0021	Lawson	NOV-1992
Off-Post Operable Unit (OU) Endangerment Assessment (EA) / Feasibility Study (FS) Final Report Volume VII of VIII (FS Appendixes) Task RI/FS Contract Number DAAA15-88-0021	Lawson	NOV-1992
Off-Post Operable Unit (OU) Endangerment Assessment (EA) / Feasibility Study (FS) Final Report Volume VIII of VIII Task RI/FS Contract Number DAAA15-88-0021	Lawson	NOV-1992
Final Decision Document for Element One of the CERCLA Hazardous Wastes Interim Response Action (IRA) RMA Contract Number DAAA15-88-D-0023	Weston	DEC-1992
Final Development and Screening of Alternatives Report (DSA) Version 4.1 Executive Summary Contract Number DAAA05-92-C-0001	EBASCO	DEC-1992
Final Development and Screening of Alternatives Report (DSA) Version 4.1 Soils Development and Screening of Alternatives (DSA) - Volume I Contract Number DAAA05-92-C-0001	EBASCO	DEC-1992
Final Development and Screening of Alternatives Report (DSA) Version 4.1 Soils Development and Screening of Alternatives (DSA) - Volume II Contract Number	EBASCO	DEC-1992

## IRP Previous Studies

1992

Title	Author	Date
DAAA05-92-C-0001		
Final Development and Screening of Alternatives Report (DSA) Version 4.1 Soils Development and Screening of Alternatives (DSA) - Volume III Contract Number DAAA05-92-C-0001	EBASCO	DEC-1992
Final Development and Screening of Alternatives Report (DSA) Version 4.1 Water Development and Screening of Alternatives (DSA) - Volume I Contract Number DAAA05-92-C-0001	EBASCO	DEC-1992
Final Development and Screening of Alternatives Report (DSA) Version 4.1 Water Development and Screening of Alternatives (DSA) Volume II Contract Number DAAA05-92-C-0001	EBASCO	DEC-1992
Final Development and Screening of Alternatives Report (DSA) Version 4.1 Structures Development and Screening of Alternatives (DSA) - Volume I Contract Number DAAA05-92-C-0001	EBASCO	DEC-1992
Final Development and Screening of Alternatives Report (DSA) Version 4.1 Structures Development and Screening of Alternatives (DSA) - Volume II Contract Number DAAA05-92-C-0001	EBASCO	DEC-1992
Final Development and Screening of Alternatives Report (DSA) Version 4.1 Comments and Responses Contract Number DAAA05-92-C-0001	EBASCO	DEC-1992
Final Human Health Exposure Assessment (HHEA) Addendum for RMA Volume I Text Task B-2 Version 3.2 Contract Number DACA87-90-D-0008	EBASCO	DEC-1992
Final Human Health Exposure Assessment (HHEA) Addendum for RMA Volume II Appendices A, B, C, D, E, F Task B-2 Version 3.2 Contract Number DACA87-90-D-0008	EBASCO	DEC-1992
Final Human Health Exposure Assessment (HHEA) Addendum for RMA Volume III Appendices G, H, I, J Task B-2 Version 3.2 Contract Number DACA87-90-D-0008	EBASCO	DEC-1992

1993

Proposed Plan for the RMA Off-Post Study Area (Final)	RMA	MAR-1993
Final Technical Report Phase I Feasibility Study (FS) Field Data Collection Volume I Version 3.1	Woodward-Clyde	APR-1993
Final Technical Report Phase I Feasibility Study (FS) Field Data Collection Volume II Version 3.1	Woodward-Clyde	APR-1993
Final Technical Report Phase II On-Post Feasibility Study (FS) Field Data Collection Volume I Version 3.0	Woodward-Clyde	APR-1993
Final Technical Report Phase II On-Post Feasibility Study (FS) Field Data Collection Volume II Appendices Version 3.0	Woodward-Clyde	APR-1993
Final Technical Report - Phase III On-Post Feasibility Study (FS) Field Data Collection Version 2.0	Woodward-Clyde	APR-1993
Final Implementation Document Volume II Basin F Liquid Storage Tank 102 Decontamination Field Demonstration	Woodward-Clyde	AUG-1993
Final Assessment / Decision Document Underground Storage Tank (UST) Monitoring and Removal Version 1.0	EBASCO	AUG-1993



## IRP Previous Studies

1993

Title	Author	Date
Final Decision Document for Element Two (PCB) of the CERCLA Hazardous Wastes Interim Response Action (IRA) RMA Version 1.0	Weston	SEP-1993
Final Implementation Document for Decontamination and Dismantling of Chemical Process Related Equipment at the South Plants at RM	Tennessee Valley Authority	OCT-1993
Final Implementation Letter Chemical Process Related Activities Free Standing Tank Removal Interim Response Action (IRA)	None noted	OCT-1993
Implementation Letter (IL) for Element One (1) of the CERCLA Liquid (Hazardous) Waste Interim Response Action (IRA)	Scharmman, Charles T., RMA	NOV-1993
Trial Burn Summary Report for the Interim Response Action (IRA) Basin F (Liquid) Submerged Quench Incinerator (SQI) Project Volume I Final	Weston	DEC-1993
Trial Burn Summary Report For The Interim Response Action (IRA) Basin F (Liquid) Submerged Quench Incinerator (SQI) Project Volume II Final	Weston	DEC-1993
Trial Burn Summary Report For The Interim Response Action (IRA) Basin F (Liquid) Submerged Quench Incinerator (SQI) Project Volume III Final	Weston	DEC-1993
Final Implementation Letter (IL) for Element Two (PCB) of the CERCLA Hazardous Wastes Interim Response Action (IRA) RMA	RMA	DEC-1993

1994

Final Chemical Process Related Activities Nonagent Process Equipment and Piping Planning Task Implementation Document for Phase I Version 3.1	Jacobs Engineering Group Inc.	JAN-1994
Final Implementation Letter (IL), Version 2.0 for Element Two (PCB) of the CERCLA Hazardous Wastes Interim Response Action (IRA)	RMA	JAN-1994
Final Chemical Process Related Activities Nonagent, Non-process External Piping Implementation Letter Plan Version 3.1	Jacobs Engineering Group Inc.	FEB-1994
Final Implementation Letter (IL) Underground Storage Tank (UST) Monitoring and Removal Version 3.0	EBASCO	FEB-1994
Interim Response Action (IRA) Basin F Liquid Incineration Project Final Human Health Risk Assessment (HHRA) Volume I	Weston	MAR-1994
Interim Response Action (IRA) Basin F Liquid Incineration Project Final Human Health Risk Assessment (HHRA) Volume II Appendices	Weston	MAR-1994
Final Implementation Letter (IL) for Element Two (2) (PCB) of the CERCLA Hazardous Wastes Interim Response Action (IRA)	Weston	MAR-1994
Final Integrated Endangerment Assessment (IEA) / Risk Characterization (RC) (IEA/RC) Volume III of IV Version 4.2 Appendix B, Sections B.5-B.8 and Appendix C (with replacement pages) Contract Number DAAA05-92-D-0002	Datachem Inc and EBASCO	JUL-1994
Final Integrated Endangerment Assessment (IEA) / Risk Characterization (RC) (IEA/RC) Version 4.2 Volume I of IV Executive Summary, Section 1-7 Appendix A and Appendix B (Sections B.1 and B.2)	EBASCO	JUL-1994

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1994

Title	Author	Date
Integrated Endangerment Assessment (IEA) / Risk Characterization (RC) (IEA/RC) Volume II of IV Version 4.2. Appendix B, Sections B.3 and B.4	EBASCO	JUL-1994
Final Integrated Endangerment Assessment (IEA) / Risk Characterization (RC) (IEA/RC) Volume III of IV Version 4.2 Appendix B, Sections B.5-B.8 and Appendix C	EBASCO	JUL-1994
Final Integrated Endangerment Assessment (IEA) / Risk Characterization (RC) (IEA/RC) Volume IV of IV Version 4.2 Appendices D, E, and F	EBASCO	JUL-1994
Final Integrated Endangerment Assessment (IEA) / Risk Characterization (RC) (IEA/RC) Volume IV of IV Version 4.2 Attachment to Appendix D - Model Diskettes	EBASCO	JUL-1994
Final Integrated Endangerment Assessment (IEA) / Risk Characterization (RC) (IEA/RC) Volume I of IV Version 4.1. Executive Summary, Section 1-7 Appendix A, and Appendix B (Sections B.1 and B.2)	EBASCO	JUL-1994
Final Integrated Endangerment Assessment (IEA) / Risk Characterization (RC) (IEA/RC) Volume II of IV Version 4.1. Appendix B, Sections B.3 and B.4 (replacement pages)	EBASCO	JUL-1994
Final Integrated Endangerment Assessment (IEA) / Risk Characterization (RC) (IEA/RC) Volume III of IV Version 4.1. Appendix B, Sections B.5-B.8 and Appendix C (with replacement pages)	EBASCO	JUL-1994
Final Integrated Endangerment Assessment (IEA) / Risk Characterization (RC) (IEA/RC) Volume IV of IV Version 4.1. Appendices D, E, and F (with replacement pages)	EBASCO	JUL-1994
Final Integrated Endangerment Assessment (IEA) / Risk Characterization (RC) (IEA/RC) Version 4.2 Volume I of IV Executive Summary, Section 1-7 Appendix A and Appendix B (Sections B.1 and B.2)	EBASCO	JUL-1994
Final Integrated Endangerment Assessment (IEA) / Risk Characterization (RC) (IEA/RC) Volume II of IV Version 4.2. Appendix B, Sections B.3 and B.4	EBASCO	JUL-1994
Final Integrated Endangerment Assessment (IEA) / Risk Characterization (RC) (IEA/RC) Volume III of IV Version 4.2 Appendix B, Sections B.5-B.8 and Appendix C	EBASCO	JUL-1994
Final Integrated Endangerment Assessment (IEA) / Risk Characterization (RC) (IEA/RC) Volume IV of IV Version 4.2 Appendices, E, and F	EBASCO	JUL-1994
Final Implementation Letter (IL) Underground Storage Tank (UST) Monitoring and Removal Version 3.1	EBASCO	AUG-1994
Final Implementation Letter Underground Storage Tank (UST) Monitoring and Removal Version 3.2	EBASCO	NOV-1994

1995

Final Chemical Process Related Activities Nonagent Process Equipment and Piping Planning Task Consolidated Implementation Document - Version 3.1 Contract Number DAAA05-92-D-0004	RMA	JAN-1995
Rust Environment & Infrastructure (Rust): Final Detailed Analysis of Alternatives (DAA) Report, Version 4.1, Technology Descriptions, Volume VII of VII	Baker Consultants, Inc. (Baker)	OCT-1995
(Final) Proposed Plan for the RMA On-Post Operable Unit (OU)	RMA	OCT-1995

## IRP Previous Studies

1995	Title	Author	Date
	Final Detailed Analysis of Alternatives (DAA) Report, Version 4.1, Soil DAA, Volume II of VII:	Foster Wheeler Environmental Corp.	OCT-1995
	Final Detailed Analysis of Alternatives (DAA) Report, Version 4.1, Executive Summary Volume I of VII	Foster Wheeler Environmental Corp.	OCT-1995
	Final Detailed Analysis of Alternatives (DAA) Report, Version 4.1, Soil DAA, Volume III of VII:	Foster Wheeler Environmental Corp.	OCT-1995
	Final Detailed Analysis of Alternatives (DAA) Report, Version 4.1, Soil DAA, Volume IV of VII	Foster Wheeler Environmental Corp.	OCT-1995
	Final Detailed Analysis of Alternatives (DAA) Report, Version 4.1, Water DAA, Volume V of VII	Foster Wheeler Environmental Corp.	OCT-1995
	Final Detailed Analysis of Alternatives (DAA) Report Version 4.1 Structures DAA Volume VI of VII	Foster Wheeler Environmental Corp.	OCT-1995
	RMA Off-Post Operable Unit (OU) Final Record of Decision (ROD) RMA Commerce City, Colorado	RMA	DEC-1995
	RMA Off-Post Operable Unit (OU) Final Record of Decision (ROD) - Appendix A: Responsiveness Summary	RMA	DEC-1995
	RMA Off-Post Operable Unit (OU) Final Record of Decision (ROD) - Appendix C: Well Closure Criteria	RMA	DEC-1995
	RMA Off-Post Operable Unit (OU) Final Record of Decision (ROD) - Appendix B: Institutional Controls; Includes Clarification of Requirements at Attachment 3: Army, Shell (SOC), Colorado, USEPA, FWS Agree	RMA	DEC-1995
1996	Record of Decision (ROD) for the On-Post Operable Unit (OU) Volume 1 Sections 1-11 Version 3.1 (Contract Number DAAA 05-92-D-0002)	Foster Wheeler Environmental Corp.	JUN-1996
	Record of Decision (ROD) for the On-Post Operable Unit (OU) Volume 2 Section 12 Version 3.1 (Contract Number DAAA 05-92-D-0002)	Foster Wheeler Environmental Corp.	JUN-1996
	Record of Decision (ROD) for the On-Post Operable Unit (OU) Volume 3 Appendices A (ARAR) and B (Agreement In Principle Regarding A Water Supply Between the Army, Shell, and SACWSD) Version 3.1 (Contract # DAAA05-92-D-0002)	Foster Wheeler Environmental Corp.	JUN-1996
	Record of Decision (ROD) for the On-Post Operable Unit (OU) Remediation Design and Implementation Schedule (RDIS)	RMA	DEC-1996
	Remediation Design and Implementation Schedule (RDIS) Record of Decision (ROD) for the On-Post Operable Unit (OU)	Shell Oil Co.	DEC-1996
1997	Amended Portions of the RMA Record of Decision (ROD) for the On-Post Operable Unit (OU) Remediation Design and Implementation Schedule (RDIS) (Concern Enforceable Deadlines) 03/04/1997 Remediation Design and Implementation Schedule (RDIS) RMA Record of Decision (ROD) for the On-Post Operable Unit (OU), Originally Dated 12/09/1996 (Copy with Portions Amended on 03/04/1997 Incorporated)	RMA	MAR-1997
	Remediation Design and Implementation Schedule (RDIS) RMA Record of Decision (ROD) for the On-Post Operable Unit (OU), Originally Dated 12/09/1996 (Copy with portions amended on 03/04/1997 Incorporated) Site	RMA	MAR-1997

## IRP Previous Studies

1997

Title	Author	Date
1959-100001695		
Amended Portions of the RMA Record of Decision (ROD) for the On-Post Operable Unit (OU) Remediation Design and Implementation Schedule (RDIS) (Concern Enforceable Deadlines)	RMA	MAR-1997
Amended Portions of the RMA Record of Decision (ROD) for the On-Post Operable Unit (OU) Remediation Design and Implementation Schedule (RDIS) (Concern Enforceable Deadlines)	RMA	MAR-1997
Amended Portions of The RMA Record of Decision (ROD) for the On-Post Operable Unit (OU) Remediation Design and Implementation Schedule (RDIS) (Concern Enforceable Deadlines)	RMA	MAR-1997
Sanitary and Chemical Sewer Plugging Project 95 Percent (Actually 100 Percent) Design Package (issued for construction) Includes Plans: Health / Safety, Quality Assurance (QA) Project (QAPP), and CQAP	RMA, Shell Oil Co., Dept. of Army & USFWS	MAY-1997
Remediation Design and Implementation Schedule (RDIS) Report to the RMA Committee 05/08/1997 - Encloses RDIS Milestone Dates / Changes as of 04/00/1997	RMA	MAY-1997
Remediation Design and Implementation Schedule (RDIS) Report to the RMA Committee 05/08/1997 - Encloses RDIS Milestone Dates / Changes as of 04/00/1997	RMA	MAY-1997
Sanitary and Chemical Sewer Plugging Project 95 Percent (Actually 100 Percent) Design Package (issued for construction) Includes Plans: Health / Safety, Quality Assurance (QA) Project (QAPP), and Construction Quality Assurance Plan (CQAP)	RMA, Shell Oil Co., Dept. of Army & US Fish and Wildlife Service (USFWS)	MAY-1997
(Final 100 Percent Design) Specifications for Construction Lake Ladora Dam Repair RMA	Shell Oil Co.	AUG-1997
(Final 100 Percent Design) Specifications for Construction Lake Ladora Dam Repair	Shell Oil Co	AUG-1997
Basin A Consolidation and Remediation Project Final (100 Percent) Design Pkg (issued for construction) Includes Plans: Health / Safety, Groundwater / Air Monitoring, Material Handling / Placement, Storm water Management, and Project Completion - Updated With 01/22/1999 Section 02900 Revegetation and 03/31/1999 Section 02250 Subsurface Warning Labels	Shell Oil Co. & Morrison Knudsen Corp.	SEP-1997
Complex Trenches and Shell Section 36 Trenches Groundwater Barrier (Slurry Wall) Project 100 Percent Design Package (Includes Plans: Health / Safety Program Requirements, Air Monitoring Work Plan, Construction Quality Assurance Plan (CQAP)	RMA, Shell Oil Co., Dept. of Army & USFWS	SEP-1997
Complex Trenches and Shell Section 36 Trenches Groundwater Barrier (Slurry Wall) Project 100 Percent Design Package (Includes Plans: Health / Safety Program Requirements, Air Monitoring Work Plan, & CQAP	RMA, Shell Oil Co., Dept. of Army & USFWS	SEP-1997
Remediation Design and Implementation Schedule (RDIS) Record of Decision (ROD) for the On-Post Operable Unit (OU) Shell Oil Co	RMA	DEC-1997

## IRP Previous Studies

1997	Title	Author	Date
	Remediation Design and Implementation Schedule (RDIS) Record of Decision (ROD) for the On-Post Operable Unit (OU)	RMA	DEC-1997
1998	Record of Decision (ROD) for the On-Post Operable Unit (OU) Remediation Design and Implementation Schedule (RDIS)	Shell Oil Co., Foster Wheeler Environmental Corp.	FEB-1998
	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
	Final (100 Percent) Design Specifications Hazardous Waste Landfill - Updated with Supplemental or Replacement Specifications per 10/22/1998 Transmittal	Shell Oil Co., Foster Wheeler Environmental Corp.	JUN-1998
	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
	Construction Completion Report (CCR) (with handwritten comments throughout the report) Shell Oil Co RMA Sanitary and Chemical Sewer Plugging Project	RMA, Dept of Army, Shell Oil Co., & USFWS	JUN-1998
	Remediation Design and Implementation Schedule (RDIS) Summer 00/00/1998 Activity Report	Shell Oil Co., Morrison Knudsen Corp.	JUL-1998
	Existing (Sanitary) Landfill Remediation Project 100 Percent Design Package - Updated with 01/21/1999 Existing Sanitary Landfill Section 01371 Odor Control Plan, Technical Specifications, Revision 2	USFWS & Shell Oil Co.	AUG-1998
	Existing (Sanitary) Landfill Remediation Project 100 Percent Design Package - Updated with 03/24/1999 Health and Safety Requirements 100 Percent Design Package, Revision 1, which includes 04/05/1999 Recovered Chemical Warfare Materiel (RCWM) Safety Plan as Appendix B	Shell Oil Co., Foster Wheeler Environmental Corp.	AUG-1998
	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
	Corrective Action Management Unit (CAMU) / Basin A Well Abandonment Project Construction Completion Report (CCR) Draft	Program Manager RMA, Environmental Protection Agency	AUG-1998

## IRP Previous Studies

1998

Title	Author	Date
Corrective Action Management Unit (CAMU) / Basin A Well Abandonment Project Construction Completion Report (CCR) (Final)	Shell Oil Co., Morrison Knudsen Corp.	AUG-1998
RMA Sanitary and Chemical Sewer Plugging Project Construction Completion Report (CCR)	Shell Oil Co., Foster Wheeler Environmental Corp.	AUG-1998
Undefined Rocky Mountain Arsenal (CO) Remediation Venture Complex (Army) Trenches and Shell Section 36 Trenches Groundwater Barrier Project 100 Percent Design Package Air Monitoring Plan Addendum	Foster Wheeler Environmental Corp.	AUG-1998
RMA North Boundary Containment System (NBS) System Modifications for Treatment of N-Nitrosodimethylamine (NDMA Construction and Startup Completion Report (CCR) (This is the 06/30/1998 report revised 09/30/1998)(Final)	USFWS, Shell Oil Co. & Dept of the Army	SEP-1998
Corrective Action Management Unit (CAMU) Soil (Soils) Remediation Construction Completion Report (CCR) Final	USFWS, Shell Oil Co. & Dept of the Army	SEP-1998
Stage II Haul Roads Design Package (100 Percent). Updated with Amendment 1 Provided in 10/27/1998 Transmittal and Revision 1 Drawings in 10/26/1998 Transmittal	Corps of Engineers	SEP-1998
RMA Construction Completion Report Chemical (CCR) Process Related Activities Free Standing Tank Removal Outside Pipeline and Equipment Removal (Revises 03/20/1998 Report) Final	Shell Oil Co.	SEP-1998
RMA Sanitary and Chemical Sewer Plugging Project Construction Completion Report (CCR) (revised in accordance with (IAW) decisions agreed upon at the 09/28/1998 meeting among USEPA, CDPHE and RVO) (Final)	Foster Wheeler Environmental Corp.	SEP-1998
Stage II Haul Roads (100 Percent) Design Package - Includes Plans: Construction Quality Assurance Plan (CQAP), Haul Roads Operations; and Under Technical Specifications an Odor and Dust Control Plan	Shell Oil Co.	SEP-1998
Stage II Haul Roads (100 Percent) Design Package	Shell Oil Co., Foster Wheeler Environmental Corp.	SEP-1998
Amendment 1 to the 09/1998 Stage II Haul Roads 100 Percent Design, Construction Quality Assurance Plan (CQAP)	Foster Wheeler Environmental Corp.	SEP-1998
Miscellaneous Northern Tier, Miscellaneous Southern Tier, and Lake Sediments Project, 100 Percent Design Package (Appendix F includes the Construction Quality Assurance Plan (CQAP), Site-specific Air Monitoring Plan and Project Completion Plan)	USFWS & Shell Oil Co.	OCT-1998
Miscellaneous Northern Tier, Miscellaneous Southern Tier, and Lake Sediments Project Draft 100 Percent Design Package, Revision 0	Foster Wheeler Environmental Corp.	OCT-1998
Existing (Sanitary) Landfill Remediation Project 100 Percent Design Package - Updated with the 12/02/1998 Addendum Number 2	Shell Oil Co., Foster Wheeler Environmental Corp.	OCT-1998
Instruction Page to the 09/1998 Stage II Haul Roads 100 Percent Design Package, Amendment 1 to Revision 0	Shell Oil Co., Foster Wheeler Environmental	OCT-1998

## IRP Previous Studies

1998

Title	Author	Date
	Corp.	
Existing (Sanitary) Landfills Remediation Project, 100 Percent Design Package, Design Analysis, Revision Number 1	Shell Oil Co., Foster Wheeler Environmental Corp.	OCT-1998
Replacement pages for RMA Existing (Sanitary) Landfills Remediation Project, 100 Percent Design Package, Design Analysis, Revision Number 1	Shell Oil Co., Foster Wheeler Environmental Corp.	OCT-1998
Miscellaneous Northern Tier, Miscellaneous Southern Tier, and Lake Sediments Project, 100 Percent Design Package	RMA, Remediation Venture, Foster Wheeler Environmental Corp.	OCT-1998
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
South Plants Structures Demolition and Removal Project Phase 1 (Final 100 Percent) Design Package	RMA, Remediation Venture, Shell Oil Co., Foster Wheeler Environmental Corp.	OCT-1998
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
RCRA Equivalent Cover Demonstration Project Construction Completion Report (CCR) Final	Foster Wheeler Environmental Corp.	DEC-1998
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

1999

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	Shell Oil Co.	MAR-1999
Section 36 Bedrock Ridge Groundwater Plume Extraction System 100 Percent Design Package (Includes Project Plans: Contractor Health and Safety Plan Requirements, and Construction Quality Assurance	Shell Oil Co., Foster Wheeler Environmental Corp.	MAR-1999

## IRP Previous Studies

1999

Title	Author	Date
Plan		
Existing (Sanitary) Landfill Remediation Project Health and Safety Requirements 100 Percent Design Package, Revision 1	Shell Oil Co., Foster Wheeler Environmental Corp.	MAR-1999
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
Final RMA Off-post Well Abandonment Construction Completion Report (CCR) (updated with certification page (Section 10.0 page 16) signed by Charles Scharmman 09/20/98	RMA	JUL-1999
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



## IRP Previous Studies

1999

Title	Author	Date
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

2000

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

## IRP Previous Studies

2000

Title	Author	Date
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
Existing (Sanitary) Landfills Remediation Section 4 Construction Completion Report (CCR), Revision 1 (Final)	Shell Oil Co., Foster Wheeler Environmental Corp.	APR-2000
Existing (Sanitary) Landfill Remediation Section One (1) Construction Completion Report (CCR), Revision 1	Shell Oil Co., Foster Wheeler Environmental Corp.	APR-2000
Miscellaneous Southern Tier Soil Remediation Project Construction Completion Report (CCR), Revision 1	Shell Oil Co., Foster Wheeler Environmental Corp.	MAY-2000
Final Confined Flow System Well Closure Construction Completion Report (CCR)	Shell Oil Co., Foster Wheeler Environmental Corp.	JUN-2000
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

## IRP Previous Studies

2000

Title	Author	Date
Exceedance Soils Removal Project Construction Completion Report (CCR) Revision 0 (Final)		
Final Lake Ladora Dam Reconstruction Project Construction Completion Report (CCR)	Shell Oil Co., Foster Wheeler Environmental Corp.	SEP-2000
Final Interior Building Chemical Related Activities for South Plants Construction Completion Report (CCR) Revision 1	Shell Oil Co., Foster Wheeler Environmental Corp.	SEP-2000
RMA Sanitary and Chemical Sewer Plugging Project Construction Completion Report (CCR) (Updated with Appendices from the 08/03/1998 CCR)	Shell Oil Co., Foster Wheeler Environmental Corp.	SEP-2000
Draft Buried M-1 Pits Soil Remediation Project 100 Percent Design Analysis	Shell Oil Co., Foster Wheeler Environmental Corp.	SEP-2000
South Plants Structure Demolition and Removal Project Phase 1 Final Construction Completion Report (CCR) Revision 1	Shell Oil Co., Foster Wheeler Environmental Corp.	SEP-2000
Final Corrective Action Management Unit (CAMU) Soils Remediation Completion and Support Project Construction Completion Report (CCR)	Shell Oil Co., Foster Wheeler Environmental Corp.	SEP-2000
Complex Army Trenches Groundwater Barrier Project Draft Construction Completion Report (CCR), Revision A	Shell Oil Co., Foster Wheeler Environmental Corp.	SEP-2000
RMA Record of Decision (ROD) for the On-Post Operable Unit (OU)	Shell Oil Co., Foster Wheeler Environmental Corp.	OCT-2000
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 Chemical Sewer Remediation (Section 35 and Section 26) RMA Federal Facility Site (Fully Executed)	Dodson, Max H. Environmental Protection Agency, Roitman, Howard A. Colorado Dept Of Public Health & Environment, Scharmann, Charles T. Program Manager RMA	NOV-2000
South Plants Balance of Areas and Central Processing Area Soil Remediation Project Phase 2 100 Percent Design Package, Revision F	Shell Oil Co., Foster Wheeler Environmental Corp.	DEC-2000

2001

Final Buried M-1 Pits Soil Remediation Project 100 Percent Design Analysis (Updated with the 02/01/2001 Final M-1 Pits Soil Remediation Project Construction Quality Assurance Plan (CQAP), 100 Percent	Shell Oil Co., Foster Wheeler Environmental Corp.	JAN-2001
Final M-1 Pits Soil Remediation Project Construction Quality Assurance Plan (CQAP) 100 Percent Design, Revision 1	Dodson, Max H. Environmental Protection Agency, Roitman, Howard A. Colorado Dept of Public Health & Environment, Scharmann, Charles T. Program Manager RMA	FEB-2001
Hex Pit Remediation Draft 100 Percent Design Analysis Report	Shell Oil Co., Foster Wheeler Environmental	FEB-2001

## IRP Previous Studies

2001

Title	Author	Date
	Corp.	
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
Destruction of Equipment in the GB-(Sarin) Production and Fill Facilities Project 100 Percent Design Package, Revision 0	Shell Oil Co., Foster Wheeler Environmental Corp.	APR-2001
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

## IRP Previous Studies

2001	Title	Author	Date
	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
2002	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

## IRP Previous Studies

2002

Title	Author	Date
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 Package, Shell Oil Co, Foster Wheeler Environmental Corp.	Shell Oil Co., Foster Wheeler Environmental Corp.	MAR-2002
Existing (Sanitary) Landfill Remediation Project 100 Percent Design Package Technical Specifications	Shell Oil Co, Foster Wheeler Environmental Corp.	APR-2002
Buried M-1 Pits Soil Remediation Project Construction Completion Report (CCR), Revision 0 (Updated with signed Certification Page)	Foster Wheeler Environmental Corp.	APR-2002
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-2002
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
Enhanced Hazardous Waste Landfill (ELF) 100 Percent Design Analysis, Volume I	Shell Oil Co., Foster Wheeler Environmental Corp.	JUL-2002
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-2002
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-2002
Basin F Wastepile Remediation Project 100 Percent Design Package, Revision 0	Shell Oil Co., Foster Wheeler Environmental Corp.	NOV-2002

2003

Administrative Area Asbestos Remediation Projects Final Construction Completion Report (CCR) Revision 4 (Revised)	Washington Group International	JAN-2003
Irondale Containment System Shut Down for Irondale Extraction System Final Construction Report (CCR)	Washington Group International	APR-2003

## IRP Previous Studies

2003

Title	Author	Date
Revision 0		
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 36 Balance of Areas (BOA) Soil Remediation Project 100 Percent Design Package. Revision 0	Foster Wheeler Environmental Corp.	APR-2003
Amendment to the Record of Decision (ROD) for the On-Post Operable Unit, RMA Federal Facility Site Hex Pit Remediation Final, Revision 0	Shell Oil Co., Foster Wheeler Environmental Corp.	APR-2003
Miscellaneous RMA Structure Demolition and Removal Project Phase I Construction Completion Report (CCR)	Foster Wheeler Environmental Corp.	MAY-2003
Section 36 Balance of Areas (BOA) Soil Remediation Project 100 Percent Design Package Design Analysis, Revision 1 (Revisions only include Table of Changes)	Foster Wheeler Environmental Corp.	JUN-2003
Section 36 Balance of Areas (BOA) Soil Remediation Project 100 percent Design Package Design Analysis Revision 1 (Revisions only includes Table of Changes)	Foster Wheeler Environmental Corp.	JUN-2003
Draft Miscellaneous RMA Structure Demolition and Removal Project 100 Percent Design Package Design Analysis	Shell Oil Co., Foster Wheeler Environmental Corp.	JUN-2003
North Plants Structure Demolition and Removal Remediation Project Construction Completion Report (CCR) Draft, Revision B	Shell Oil Co., Wheeler Environmental Corp.	JUL-2003
Enhanced Hazardous Waste Landfill (ELF) Contingent Contaminated Storm water Control System 100 Percent Design Analysis	Foster Wheeler Environmental Corp.	AUG-2003
South Plants Balance of Areas and Central Processing Area Soil Remediation Project - Phase 2 Construction Completion Report (CCR), Revision B	Foster Wheeler Environmental Corp.	AUG-2003
Hex Pit Soil Remediation Project 100 Percent Design Analysis, Revision F	Shell Oil Co., Foster Wheeler Environmental Corp.	OCT-2003
RMA Hex Pit Soil Remediation Project Final 100 Percent Design Package, Revision 0	Shell Oil Co., Foster Wheeler Environmental Corp.	OCT-2003
RMA Section 35 Soil Remediation Project Construction Completion Report (CCR) (Final), Revision 0	Foster Wheeler Corp.	NOV-2003
RMA Burial Trenches Soil Remediation Project Final Construction Completion Report (CCR) Part I, Revision 2 (Revised 05/17/2005)	Foster Wheeler Corp.	NOV-2003
RMA Burial Trenches Soil Remediation Project Final Construction Completion Report (CCR) Part I, Revision 2 (revised with pages transmitted on 07/29/2004)	Foster Wheeler Corp.	NOV-2003
Burial Trenches Soil Remediation Project Final Construction Completion Report (CCR) Part 1, Revision 2	Foster Wheeler Corp.	NOV-2003
Appendix I: Remediation Design and Implementation Schedule (RDIS) Annual Update Fiscal Year 00/00/2004 (FY04)	RMA	NOV-2003
Appendix B: Project Descriptions to RMA Record of Decision (ROD) for the On-Post Operable Unit Remediation Design and Implementation Schedule (RDIS)	RMA	NOV-2003

## IRP Previous Studies

2003	Title	Author	Date
	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
2004			
	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



## IRP Previous Studies

2004

Title	Author	Date
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
Shell Disposal Trenches Remediation Project Subgrade Construction 100 Percent Design Package Design Analysis, Revision 0 (Revised 04/28/2005)	Tetra Tech EC, Inc.	DEC-2004
Shell Disposal Trenches Remediation Project Subgrade Construction 100 Percent Design Package Design Analysis, Revision 0	Shell Oil Co., Tetra Tech EC, Inc.	DEC-2004

2005

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 Package Design Analysis, Revision C	Shell Oil Co., Tetra Tech EC, Inc.	FEB-2005
RMA Complex (Army) Disposal Trenches Remediation Project Subgrade Construction 100 Percent Design Package Design Analysis, Revision 0	Shell Oil Co., Tetra Tech EC, Inc.	MAR-2005

## IRP Previous Studies

2005

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
Explanation of Significant Differences (ESD) for Existing (Sanitary) Landfills Soil Remediation Project RMA Federal Facility Site, Revision 0	Tetra Tech EC, Inc.	MAY-2005
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
Shell Disposal Trenches Remediation Project RCRA Equivalent Cover Construction 100 Percent Design Package, Revision 0	Shell Oil Co., Tetra Tech EC, Inc.	DEC-2005

2006

## IRP Previous Studies

2006

Title	Author	Date
RMA Section 36 Bedrock Ridge Groundwater Plume Extraction System, Construction Completion Report (CCR)	Washington Group International	JAN-2006
Groundwater Mass Removal Project Treatment System Design Analysis Report Final	Washington Group International	JAN-2006
Landfill Wastewater Treatment System Quarterly Discharge Monitoring Report (DMR) For Reporting Period 10/01/2005 - 12/31/2005	Washington Group International	JAN-2006
Miscellaneous Northern Tier Soil Remediation Project Construction Completion Report (CCR) Addendum 1, Revision 1	USFWS, Shell Oil Co. & Dept of the Army	JAN-2006
Miscellaneous Southern Tier Soil Remediation Project Construction Completion Report (CCR) Addendum 1, Revision 1	USFWS, Shell Oil Co. & Dept of the Army	JAN-2006
Explanation of Significant Differences (ESD) for the Section 36 Bedrock Ridge Groundwater Plume Extraction System	USFWS, Shell Oil Co, & Dept of the Army	JAN-2006
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
Residual Ecological Risk Soil Remediation - Part 1 Final Construction Completion Report, Revision 0	Tetra Tech EC, Inc.	FEB-2006
TRER (Terrestrial Residual Ecological Risk) Site 1SE-4 Assessment (Appendix E - To Residual Ecological Risk Soil Remediation - Part 1 Final Construction Completion Report, Revision 0)	Tetra Tech EC, Inc.	FEB-2006
Appendices A - D (To Residual Ecological Risk Soil Remediation - Part 1 Final Construction Completion Report, Revision 0)	Tetra Tech EC, Inc.	FEB-2006
Appendix G (To Residual Ecological Risk Soil Remediation - Part 1 Final Construction Completion Report, Revision 0)	Tetra Tech EC, Inc.	FEB-2006
Section 26 Human Health Exceedance And Biota Exceedance Soils Removal Project Construction Completion Report (CCR) Addendum 1, Revision 1	Remediation Venture Office	FEB-2006
RMA Section 36 Bedrock Ridge Groundwater Plume Extraction System, Construction Completion Report (CCR)	Colorado Dept of Public Health & Environment, Dept of the Army, Environmental Protection Agency, USFWS, Shell Oil Co. & Undefined Washington Group International	FEB-2006
Groundwater Mass Removal Project Chemical Agent Materiel Safety Plan	RMA	FEB-2006
Groundwater Mass Removal Project Chemical Agent	RMA	FEB-2006

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2006

Title	Author	Date
Material Screening Plan		
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
Construction Quality Assurance for the Enhanced Hazardous Waste Landfill (ELF) Excavation and Berm, Part 2 Liner, Contingent Contamination Storm water Control System and Infrastructure Construction Final, Volume 1	Golder Associates Inc.	MAR-2006
Construction Quality Assurance for the Enhanced Hazardous Waste Landfill (ELF) Excavation and Berm, Part 2 Liner, Contingent Contamination Storm water Control System and Infrastructure Construction Final, Volume 2	Golder Associates Inc.	MAR-2006
Construction Quality Assurance for the Enhanced Hazardous Waste Landfill (ELF) Excavation and Berm, Part 2 Liner, Contingent Contamination Storm water Control System And Infrastructure Construction Final, Volume 3	Golder Associates Inc.	MAR-2006
RMA Miscellaneous RMA Structure Demolition And Removal Project - Phase Ii Construction Completion Report (CCR), Revision 1	Tetra Tech EC, Inc.	MAR-2006
Existing (Sanitary) Landfill Remediation Section 1 Construction Completion Report (CCR) Addendum 1, Revision 1	Remediation Venture Office	MAR-2006
Miscellaneous Southern Tier Soil Remediation Project Construction Completion Report (CCR) Addendum 1, Revision 1	Remediation Venture Office	MAR-2006
Miscellaneous Northern Tier Soil Remediation Project Construction Completion Report (CCR) Addendum 1 (Revised 03/29/2006)	Remediation Venture Office	MAR-2006
Explanation of Significant Differences (ESD) for Groundwater Remediation and Revegetation Requirements RMA Federal Facility Site, Revision 0 (Fully Executed)	Tetra Tech EC, Inc.	MAR-2006
Explanation of Significant Differences (ESD) For The Section 36 Bedrock Ridge Groundwater Plume Extraction System RMA Federal Facility Site, Revision 1 (Fully Executed)	Washington Group International	MAR-2006
Landfill Wastewater Treatment System (LWTS) Quarterly Discharge Monitoring Report (DMR) for Reporting Period: 01/01/2006 To 03/31/2006	Washington Group International	MAR-2006
Explanation of Significant Differences (ESD) for the Section 36 Bedrock Ridge Groundwater Plume Extraction System RMA Federal Facility Site, Revision 1 (Fully Executed)	RMA	MAR-2006
Residual Ecological Risk Soil Remediation Part 1 (Final) Construction Completion Report (CCR), Revision 0 (Revised 03/28/2006)	Tetra Tech EC, Inc.	MAR-2006
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

## IRP Previous Studies

2006

Title	Author	Date
Regulatory Agencies Comments on the Draft Version of the Document)		
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
RMA Basin F Closure and Post Closure Groundwater Monitoring Plan Final, Revision 1	Tetra Tech EC, Inc.	APR-2006
Explanation of Significant Differences (ESD) for the Shell Disposal Trenches Remediation Project, Revision 0 (Signed)	Tetra Tech EC, Inc.	MAY-2006
Long-Term Monitoring Program RMA Annual Data Summary 00/00/2005 Water Year Final	U.S. Geological Survey	MAY-2006
Landfill Wastewater Treatment System Quarterly Discharge Monitoring Report for Reporting Period: 04/01/2006 to 06/30/2006	Washington Group International	JUN-2006
RMA Treatment Plant Effluent Water Quality Data First and Second Quarters FY06 (Fiscal Year 00/00/2006)	Remediation Venture Office	JUL-2006
Hazardous Waste Landfill (HWL), Landfill Wastewater Treatment System and Enhanced Hazardous Waste Landfill (ELF) Final Annual Groundwater Monitoring Report for 07/00/2004 - 06/00/2005, Revision 0	Tetra Tech EC, Inc.	JUL-2006
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 07/00/2004 - 06/00/2005, Revision 1	Tetra Tech EC, Inc.	NOV-2006
RMA Treatment Plant Effluent Water Quality Data All Quarters Fiscal Year 00/00/2006 (FY06)	Remediation Venture Office	DEC-2006

2007

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
South Tank Farm/Lime Basins Groundwater Mass Removal Project Sampling and Analysis Plan, Revision 0, Plan Effective Period FY 00/00/2007 (Signed)	Washington Group International	JAN-2007
Landfill Wastewater Treatment System Sampling and Analysis Plan, Revision 0, Plan Effective Period FY 00/00/2007 (Signed)	Washington Group International	JAN-2007
Landfill Wastewater Treatment System Quarterly Discharge Monitoring Report for Reporting Period 10/01/2006 to 12/31/2006	Washington Group International	JAN-2007
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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2007

Title	Author	Date
Hazardous Waste Landfill (HWL) and Facilities Operations Project Construction Completion Report (CCR), Revision 0 (Signed)	Tetra Tech EC, Inc.	JAN-2007
Hazardous Waste Landfill (HWL) And Facilities Operations Project Construction Completion Report (CCR), Revision 0	Tetra Tech EC, Inc.	JAN-2007
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
Former Basin F Principal Threat Soil Remediation Project 100 Percent Design Package, Revision 0	Tetra Tech EC, Inc.	FEB-2007
Treatment Plant Effluent Water Quality Data First Quarter FY07 (Fiscal Year 00/00/2007)	Remediation Venture Office	MAR-2007
Treatment Plant Effluent Water Quality Data First Quarter FY07	RMA	MAR-2007
Errata Pages for the Former Basin F Principal Threat Soil Remediation 100 Percent Design Package (Includes Instruction Sheet)	Tetra Tech EC, Inc.	MAR-2007
Landfill Wastewater Treatment System Quarterly Discharge Monitoring Report for Reporting Period 01/01/2007 to 03/31/2007	Washington Group International	APR-2007
Section 36 Lime Basins Soil Remediation Project Slurry/Barrier Wall Design 100 Percent Design Package, Revision 0	Tetra Tech EC, Inc.	APR-2007
Final Long Term Monitoring Program RMA Annual Data Summary of Sites Addressed by USGS Monitoring Programs 00/00/2006 Water Year Final	U.S. Geological Survey	MAY-2007
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
Section 36 Lime Basins Soil Remediation Project Slurry/Barrier Wall Design 100 Percent Design Package, Revision 1 Addendum (Includes RVO Responses to USEPA Comments) (Replacement Pages)	Tetra Tech EC, Inc.	JUN-2007
Landfill Wastewater Treatment System Quarterly Discharge Monitoring Report for Reporting Period 04/01/2007 to 06/30/2007	Washington Group International	JUN-2007
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

## IRP Previous Studies

2007

Title	Author	Date
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 Year 2007	RMA	DEC-2007

2008

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

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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
Landfill Wastewater Treatment System (LWTS) Modification Construction Completion Report (CCR), Revision 1 (Signed)	Washington Group International	MAY-2008
Basin F Wastepile Remediation Project Construction Completion Report (CCR), Revision 0 (This copy contains replacement pages 13 - 14 transmitted on 06/05/2008) (Signed)	Tetra Tech EC, Inc.	MAY-2008
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
Final RMA Section 36 Bedrock Ridge Groundwater Plume Extraction System Construction Completion Report (CCR) (This report includes the replacement page 14 transmitted on 09/30/2008) (Signed)	Washington Group International	SEP-2008
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
Landfill Wastewater Treatment System (LWTS) Quarterly Discharge Monitoring Report for Reporting Period:	Washington Group International	NOV-2008



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2008

Title	Author	Date
07/01/2008 to 09/30/2008		
Explanation of Significant Differences (ESD) for Munitions (Testing) Soil Remediation Project RMA Federal Facility Site, Revision 0 (Signed)	Tetra Tech EC, Inc.	NOV-2008
(Final) Shell Disposal Trenches Remediation Project RCRA Equivalent Cover Subgrade Construction, RCRA Equivalent Cover Soil Stockpiling, and RCRA Equivalent Cover Construction, Construction Completion Report (CCR) - Part 1, Revision 0 (Signed)	Tetra Tech EC, Inc.	NOV-2008
Final RMA Hazardous Waste Landfill (HWL), Landfill Wastewater Treatment System (LWTS) and Enhanced Hazardous Waste Landfill (ELF) Annual Groundwater Monitoring Report for 07/00/2006 - 06/00/2007, Revision 0	Tetra Tech EC, Inc.	DEC-2008
RMA Treatment Plant Effluent Water Quality Data All Quarters Fiscal Year 00/00/2008 (FY08)	RMA	DEC-2008
Final Explanation of Significant Differences (ESD) for North Plants Soil Remediation Project, Revision 0 (Signed)	Tetra Tech EC, Inc.	DEC-2008
RMA Munitions (Testing) Soils Remediation Project Construction Completion Report (CCR) - Part IV, Revision 1 (Signed)	Tetra Tech EC, Inc.	DEC-2008
Final RMA Sanitary Sewer Manhole Plugging Project - Phase II Construction Completion Report (CCR), Revision 0 (Signed)	Tetra Tech EC, Inc.	DEC-2008

2009

Landfill Wastewater Treatment System (LWTS) Quarterly Discharge Monitoring Report for Reporting Period: 10/01/2008 to 12/31/2008	URS Washington Group	JAN-2009
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
Landfill Wastewater Treatment System (LWTS) Quarterly Discharge Monitoring Report for Reporting Period: 01/01/2009 to 03/31/2009	RMA	APR-2009
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

## IRP Previous Studies

2009

Title	Author	Date
Completion Report (CCR), Revision 0 (Signed)		
Final Long Term Monitoring Program (LTMP) RMA Annual Data Summary of Sites Addressed by USGS Monitoring Programs 2008 (00/00/2008) Water Year	U.S. Geological Survey	MAY-2009
Landfill Wastewater Treatment System (LWTS) Quarterly Discharge Monitoring Report for Reporting Period: 04/01/2009 to 06/30/2009	URS Washington Group	JUN-2009
(Final) Residual Ecological Risk (RER) Soil Remediation - Part 2, Construction Completion Report (CCR), Revision 0 (Signed)	Tetra Tech EC, Inc.	JUN-2009
Final Groundwater Mass Removal Project 2006 - 2007 (00/00/2006 - 00/00/2007) Annual Operations Report (AOR)	URS Washington Group	JUN-2009
RMA Treatment Plant Effluent Water Quality Data Report First and Second Quarters Fiscal Year 00/00/2009 (FY2009)	RMA	JUN-2009
Basin A Consolidation and Remediation Project, Construction Completion Report (CCR), Revision 0 (Signed)	Tetra Tech EC, Inc.	JUL-2009
RMA Treatment Plant Effluent Water Quality Data Report, First, Second, and Third Quarters Fiscal Year 00/00/2009 (FY2009)	RMA	AUG-2009
Hazardous Waste Landfill (HWL) Closure Groundwater Monitoring Report for 07/00/2007 - 05/00/2009, Revision 0	Tetra Tech EC, Inc.	SEP-2009
Landfill Wastewater Treatment System (LWTS) and Enhanced Hazardous Waste Landfill (ELF) Annual Groundwater Monitoring Report for 07/00/2007 to 06/00/2008, Revision 0	Tetra Tech EC, Inc.	OCT-2009
(Final) Explanation of Significant Differences (ESD) for Section 36 Balance of Areas (BOA) Soil Remediation Project, Revision 0 (Signed)	Tetra Tech EC, Inc.	OCT-2009
(Final) Explanation of Significant Differences (ESD) for Section 36 Balance of Areas (BOA) Soil Remediation Project, Revision 0 (Signed)	Tetra Tech EC, Inc.	OCT-2009
Landfill Wastewater Treatment System (LWTS) Quarterly Discharge Monitoring Report for Third Quarter 00/00/2009 for Reporting Period 07/01/2009 to 09/30/2009	URS Washington Group	OCT-2009
Final Miscellaneous RMA Structure Demolition and Removal Project - Phase III Construction Completion Report (CCR), Revision 0	Tetra Tech EC, Inc.	NOV-2009
Basin F Closure Groundwater Monitoring Report 2006 - 2007 (00/00/2006 - 00/00/2007), Revision 1	Tetra Tech EC, Inc.	NOV-2009
Final 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 1 (Signed)	Tetra Tech EC, Inc.	NOV-2009
RMA Treatment Plant Effluent Water Quality Data Report, All Quarters Fiscal Year 00/00/2009 (FY2009)	RMA	NOV-2009
Final Landfill Wastewater Treatment System (LWTS) Closure Plan	URS Washington Group	DEC-2009

2010

Final Lime Basins Groundwater Treatment Relocation	URS Washington Division	JAN-2010
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## IRP Previous Studies

2010

Title	Author	Date
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
Final Landfill Wastewater Treatment System (LWTS) Closure Plan, Revision 1	Tetra Tech EC Inc	FEB-2010
Final 00/00/2007 and 00/00/2008 Annual Biomonitoring Report	RMA	FEB-2010
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
Final Construction Quality Assurance (CQA) for the	Golder Associates, Inc	AUG-2010

## IRP Previous Studies

2010

Title	Author	Date
Basin F Closure (Closure of the Basin F Wastepile and Closure of the Basin F Surface Impoundment), Revision 0		
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

### STATUS

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.....	204609

RIP Date: 199612

RC Date: 204609

### 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, Dibromochloropropane (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.

### CLEANUP/EXIT STRATEGY

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 2046; however, operations are expected to continue until state and federal regulatory requirements have been met.

Site ID: ELF

## Site Name: ENHANCED HAZARDOUS WASTE LANDFILL

### STATUS

**Parcel:** Retain (1000 acres)

**Regulatory Driver:** CERCLA

**RRSE:** NOT EVALUATED

<u>Phases</u>	<u>Start</u>	<u>End</u>
PA.....	199612.....	199612
LTM.....	201006.....	204009

**RIP Date:** N/A

**RC Date:** 199612

### SITE DESCRIPTION

The ELF is located in the western portion of Section 25, just south of the double-lined HWL. The facility permanently stores waste from the Basin F Wastepile (site FWASTEPILE) and the Basin F Principal Threat Soils (site NCSA-3) projects in two separate cells. Design, construction, operations, and closure of the ELF was considered part of the remediation costs of those two sites. This AEDB-R site ELF 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 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 in October 2010. The cover footprint is approximately 50 acres. LTM activities include cover inspection and maintenance, groundwater monitoring, leachate collection and treatment, leak detection, and periodic evaluation of vegetation.

Per requirements set forth in the ELF post-closure plan, LTM activities are expected to continue for a minimum of 30 years from the post-closure date of 2010. Therefore, this phase is scheduled to continue through 2040.

### 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 October 2010 (FY11) and will continue for a minimum of 30 years through at least FY40. The current LTM plan extends through FY40.

Site ID: HWL

## Site Name: HAZARDOUS WASTE LANDFILL

### STATUS

**Parcel:** Retain (1000 acres)

**Regulatory Driver:** CERCLA

**RRSE:** NOT EVALUATED

<u>Phases</u>	<u>Start</u>	<u>End</u>
PA.....	199612.....	199612
LTM.....	200911.....	203909

**RIP Date:** N/A

**RC Date:** 199612

### SITE DESCRIPTION

The HWL is a 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 60 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 in FY09 and will continue for a minimum of 30 years from the beginning of the LTM phase.



Site ID: ICS

## Site Name: INTEGRATED COVER SYSTEM

### STATUS

**Parcel:** Retain (1000 acres)

**Regulatory Driver:** CERCLA

**RRSE:** NOT EVALUATED

<u>Phases</u>	<u>Start</u>	<u>End</u>
PA.....	199612.....	199612
LTM.....	201001.....	204609

**RIP Date:** N/A

**RC Date:** 199612

### SITE DESCRIPTION

The ICS is a contiguous 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.

LTM 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.

LTM activities are currently planned to continue indefinitely. However, only 30 years have been included in the cost-to-complete (CTC) estimate in accordance with Defense Environmental Restoration Program Management (March 9, 2012) as updated in the July 14, 2014 Memo from the Office of the Under Secretary of Defense.

### CLEANUP/EXIT STRATEGY

LTM 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 indefinitely.

Site Name: NORTH BOUNDARY CONTAINMENT SYSTEM

STATUS

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.....	204609

RIP Date: 199612

RC Date: 204609

SITE DESCRIPTION

The North Boundary Containment System, 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. The system uses ultraviolet oxidation, following carbon adsorption treatment, to treat for n-nitrosodimethylamine (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

Operation of the North Boundary containment system continues within effluent parameters at approximately 225 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. The estimated cost includes operation for 30 years until 2046, and includes plant maintenance/refurbishing costs. However, operations are expected to continue indefinitely beyond 2046.

CLEANUP/EXIT STRATEGY

Operation of the North Boundary containment system continues within effluent parameters at approximately 225 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. The estimated cost includes operation for 30 years until 2046, and includes plant maintenance/refurbishing costs. However, operations are expected to continue indefinitely beyond 2046.

Site Name: SECONDARY BASINS - FORMER BASIN F

STATUS

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.....	204009

RIP Date: N/A

RC Date: 201101

SITE DESCRIPTION

This project originally addressed principal threat soil within the surficial soils of the former Basin F area. Basin F was a surface impoundment/lagoon, which is a subgroup of what was known as the Basin F Medium Group. This site consists of the former basin area including the area beneath the Basin F waste pile which was constructed during the Basin F IRA. The Basin F IRA was conducted between 1988 and 1995 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 a containment area that became known as the Basin F waste pile. The site still contained contaminated soil that was not removed during the IRA. A two to five-feet-thick soil cover (average thickness of three feet) and up to 10 feet of grade fill were placed over the Former Basin F area following construction of the waste pile. The soil cover was revegetated at the conclusion of the IRA.

The Former Basin F contained soil that was 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. In October 2005, a ROD amendment changed the remedial action from solidification to excavation and placement in the ELF. Excavation of the principal threat soils began in the summer of 2007 and was completed in November of the same year. A total of 212,204 bcy of principal threat soil was 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. The cover system was constructed under NCSA-4B however, LTM of the former Basin F Area will continue under this AEDB-R site.

As indicated in the Basin F post-closure plan, the post-closure period or LTM phase will continue for a minimum of 30 years from the beginning of the post-closure period. The plan defines the post-closure period as beginning on March 2, 2010. That being the case, and there being no reason to anticipate LTM continuing any longer than 30 years at this point, the CTC estimate includes costs through FY40 which is the end of that initial 30 year period.

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 Name: NORTHWEST BOUNDARY CONTAINMENT SYST

STATUS

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.....	204609

RIP Date: 199612

RC Date: 204609

SITE DESCRIPTION

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, organochlorine pesticides, and arsenic.

Operation of the Northwest Boundary Containment System continues within effluent parameters currently at approximately 880 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. Estimated cost includes operation until 2046 (30 years) and includes plant maintenance / refurbishing costs. However, operations are expected to continue beyond the 30 year estimate limit.

CLEANUP/EXIT STRATEGY

The groundwater treatment system will be operated until remedial objectives (ROD requirements) are met. Estimated cost includes operation until 2046 (30years), and includes plant maintenance/refurbishing costs. Operations are expected to continue beyond the 30 year estimate limit.

Site ID: OU-N

Site Name: NORTHERN PATHWAY

## STATUS

**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.....	204609

**RIP Date:** 199612

**RC Date:** 204609

## 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 plan for the off-post OU include volatile halogenated organics, volatile hydrocarbon compounds, volatile aromatic organics, organosulfur compounds, DIMP, organophosphorus pesticides, organochlorine pesticides, DBCP, 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.

Operation of the off-post system continues within effluent parameters, designated by the off-post ROD CSRG 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. At this point, the timeframe for achievement of shut down criteria is not defined and is not expected to be reached within the finite 30 year period of the CTC estimate. Therefore, a total of 30 years is included in this estimate.

## 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. At this point, the timeframe for achievement of shut down criteria is not defined and is not expected to be reached within the finite 30 year period of the CTC estimate. Therefore, a total of 30 years is included in the estimate.

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

**STATUS**

**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

<b>Phases</b>	<b>Start</b>	<b>End</b>
PA.....	197601.....	198410
SI.....	197601.....	198410
RI/FS.....	198401.....	199512
RD.....	198901.....	199606
RA(C).....	199101.....	199612
RA(O).....	199612.....	204609

**RIP Date:** 199612

**RC Date:** 204609

**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 plan for the off-post OU include volatile halogenated organics, volatile hydrocarbon compounds, volatile aromatic organics, organosulfur compounds, DIMP, organophosphorus pesticides, organochlorine pesticides, DBCP, 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.

Operation of the off-post system continues within effluent parameters, designated by the off-post ROD CSRG 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. At this point, the timeframe for achievement of shut down criteria is not defined and is not expected to be reached within the finite 30 year period of the CTC estimate. Therefore, a total of 30 years is included in this estimate.

**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. At this point, the timeframe for achievement of shut down criteria is not defined and is not expected to be reached within the finite 30-year period of the CTC estimate. Therefore, a total of 30 years is included in the estimate.

**Site ID: SWP**

**Site Name: SITE-WIDE PROGRAM**

## STATUS

**Parcel:** Retain (1000 acres)

**Regulatory Driver:** CERCLA

**RRSE:** NOT EVALUATED

<b>Phases</b>	<b>Start</b>	<b>End</b>
PA.....	200502.....	200502
LTM.....	200503.....	204609

**RIP Date:** N/A

**RC Date:** 200503

## SITE DESCRIPTION

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 RMA 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 remedial action (operation) (RA(O)) and O&M activities. O&M contract management

B. Overall administrative and management activities including overhead charges, vehicles and maintenance, fee for the O&M contract Facility Maintenance and Operations Facility Operations  
Water systems (potable, non-potable, and sewer) operations maintenance and monitoring. Standard facility operations and service orders, including site maintenance, ground control, building heating ventilation and air-conditioning (HVAC), plumbing, electrical

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

service and repairs.

C. Data Management

Data Management and Information Services

Includes site information services including communications systems (phones, private branch exchange) 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, Research, Development and Engineering Command (RDECOM) contracting support, utilities costs.

## **CLEANUP/EXIT STRATEGY**

Site SWP supports all RA(O) and LTM sites. Costs under this site will continue throughout the RA(O) and LTM phases. Completion of this site will be determined by the closure of all other sites at RMA.



Site ID: W-MP

## Site Name: WESTERN/MOTOR POOL PLUME

### STATUS

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.....	201607
LTM.....	201607.....	202109

RIP Date: 199606

RC Date: 201607

### SITE DESCRIPTION

Originally this site was treated at the Irondale System, located in Sections 33 and 28 of the RMA. The system consisted of extraction and recharge wells and carbon adsorption for removal of organic contaminants, as well as extraction systems located in Sections 3 and 4 of the RMA for the removal of contaminants from the motor pool rail classification yard plumes respectively. 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 operates at approximately 120 gpm. The final LTMP for groundwater and surface water was issued in March 2010. The skid mounted adsorber units will be operated until remedial objectives in the ROD are met (currently anticipated by mid-summer 2016). Post operations, LTM will include five years of groundwater monitoring and the demolition and removal of the skid mounted adsorber system. The post operations monitoring will consist of quarterly monitoring in years one and five and annual monitoring in the intervening years two, three, and four. Facility demolition will occur after completion of the post-operations monitoring period.

### CLEANUP/EXIT STRATEGY

The final LTMP for groundwater and surface water was issued in March 2010. The skid mounted adsorber units will be operated until remedial objectives in the ROD are met (currently anticipated by mid-summer 2016). Post operations, LTM will include five years of groundwater monitoring and the demolition and removal of the skid mounted adsorber system.

## IRP Site Closeout (No Further Action) Summary

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

## IRP Site Closeout (No Further Action) Summary

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	UNDIFFERENTIATED-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 PLOTS/DITCH	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

## IRP Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
ESA-6A	TC STORAGE AREA - HEAVY METALS DETECTION	199510	ROD - 199606. Study Complete NFA
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

## IRP Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
NCSA-2C	SECONDARY BASINS-BASIN E	199606	ROD - 199606. Study Complete NFA
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

## IRP Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
NCSA-9I	INVESTIGATED AREA - BUTOXYETHANOL DETECT	199510	ROD - 199606. Study Complete NFA
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	INVESTIGATED AREA-CD DETECTION	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 0 (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

## IRP Site Closeout (No Further Action) Summary

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

## IRP Site Closeout (No Further Action) Summary

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



## IRP Site Closeout (No Further Action) Summary

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

## IRP Site Closeout (No Further Action) Summary

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

## IRP Site Closeout (No Further Action) Summary

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 YD.-METHYLCYCLOEXANE 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

## IRP Site Closeout (No Further Action) Summary

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

## IRP Schedule

**Date of IRP Inception:** 197601

**Past Phase Completion Milestones**

**1980**

IRA (N-NP - NORTH BOUNDARY CONTAINMENT SYSTEM)

**1985**

1985

SI

(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-2D - MUNITIONS TESTING-NN3601 INCINERATOR CON, CSA-3 - SEWER SYSTEMS - CHEM/BASINS A TO F, CSA-2C - MUNITIONS TESTING-INCEND MUNITIONS TS, 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-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, ESA-2B - SANITARY LANDFILLS-SANIT. LANDFILL, ESA-2C - UNDIFFERENTIATED-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, ESA-3I - AGENT TESTING - TOXIC STORAGE PLOTS/DITCH, 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, 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-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, NCSA-1F - BURIED SEDIMENT/DITCHES-SO. PLTS DITCHES, NCSA-3 - SECONDARY BASINS - FORMER BASIN F, NCSA-4A - SECONDARY BASINS-DEEP WELL, NCSA-5D - DITCHES/DRAINAGE-SURFACE CANAL/BASIN A, NCSA-6A - SEWER SYSTEMS-SO. PLTS/BASIN F (CHEM.), NCSA-4B - SECONDARY BASINS-BASIN F EXTERIOR, NCSA-5A - SECONDARY BASINS-BASIN B, NCSA-5B - BURIED SEDIMENTS/DITCHES-A,B,C,D DITCHES, NCSA-5C - BURIED SEDIMENTS/DITCHES-SAND CK. LATERL, NCSA-9A - INVESTIGATED AREA-DIMP DETECTION, 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-8C - DITCHES/DRAINAGE-HG DETECTION/LIFT STA#2, NCSA-9S - INVESTIGATED AREA-HG DETECTION, NFU-A - STRUCTURES - NO FUTURE USE, AGENT, NFU-MNP - STRUCTURES-NO FUTURE USE,MFG,NON-PROCESS, NFU-MP - STRUCTURES - NO FUTURE USE,MFG,PROCESS, NPSA-1 - SEWER SYSTEMS - CHEMICAL SEWERS, NPSA-2 - TANK FARM 1403 AREA, 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-7 - SURFACE SPILL AREA, NPSA-8A - SURFACE DRAINAGE AREA, NPSA-8B - SURFACE DRAINAGE AREA, NCSA-9B - INVESTIGATED AREA-CD DETECTION, NCSA-9C - INVESTIGATED AREA-CD DETECTION, NCSA-9D - INVESTIGATED AREA-CD DETECTION, NCSA-9E - INVESTIGATED AREA-ZINC DETECTION, NPSA-8C - SURFACE DRAINAGE AREA, NCSA-9F - INVESTIGATED AREA,ZN/CU DETECTION, NCSA-9G - INVESTIGATED AREA-METHYLENE CHLORIDE DET, NCSA-9H - INVESTIGATED AREA-CD DETECTION, NCSA-9I - INVESTIGATED AREA - BUTOXYETHANOL DETECT, NCSA-9J - INVESTIGATED AREA-HG DETECTION, NCSA-9K - INVESTIGATED-TRICHLOROPROPENE DETECTION, NCSA-9L - INVESTIGATED AREA-AS DETECTION, NCSA-9M - INVESTIGATED AREA-ZN DETECTION, NCSA-9N - INVESTIGATED AREA-TRICHLOROPROPENE DETEC, NCSA-9O - INVESTIGATED AREA-AS DETECTION, NCSA-9P - INVESTIGATED AREA-AS,HG,CU,ZN DETECTION, OU-N - NORTHERN PATHWAY)

1985

PA

(A-A - BASIN A NECK SYSTEM, 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-3 - SEWER SYSTEMS - CHEM/BASINS A TO F, CSA-2D - MUNITIONS TESTING-NN3601 INCINERATOR CON, 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-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, ESA-2C - UNDIFFERENTIATED-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, ESA-3I - AGENT TESTING - TOXIC STORAGE PLOTS/DITCH, 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, 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, NCSA-1C - BURIED SEDIMENTS/DITCHES-NO.PLANTS DITCH, NCSA-1D - DITCHES/DRAINAGE - RUNOFF STORAGE, 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-4A - SECONDARY BASINS-DEEP WELL, NCSA-6A - SEWER SYSTEMS-SO. PLTS/BASIN F (CHEM.), NCSA-4B - SECONDARY BASINS-BASIN F EXTERIOR, NCSA-5A - SECONDARY BASINS-BASIN B, NCSA-5B - BURIED SEDIMENTS/DITCHES-A,B,C,D DITCHES, NCSA-5C - BURIED SEDIMENTS/DITCHES-SAND CK. LATERL, NCSA-5D - DITCHES/DRAINAGE-SURFACE CANAL/BASIN A, NCSA-9B - INVESTIGATED AREA-CD DETECTION, 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-8C - DITCHES/DRAINAGE-HG DETECTION/LIFT STA#2, NCSA-9A - INVESTIGATED AREA-DIMP DETECTION, NCSA-9S - INVESTIGATED AREA-HG DETECTION, NFU-A - STRUCTURES - NO FUTURE USE, AGENT, NFU-MNP - STRUCTURES-NO FUTURE USE,MFG,NON-PROCESS, NFU-MP - STRUCTURES - NO FUTURE USE,MFG,PROCESS, NPSA-1 - SEWER SYSTEMS - CHEMICAL SEWERS, NPSA-2 - TANK FARM 1403 AREA, 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-7 - SURFACE SPILL AREA, NPSA-8A - SURFACE DRAINAGE AREA, NPSA-8B - SURFACE DRAINAGE AREA, NPSA-8C - SURFACE DRAINAGE AREA, 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, NCSA-9I - INVESTIGATED AREA - BUTOXYETHANOL DETECT, NCSA-9J - INVESTIGATED AREA-HG DETECTION, NCSA-9K - INVESTIGATED-TRICHLOROPROPENE DETECTION, NCSA-9L - INVESTIGATED AREA-AS DETECTION, NCSA-9M - INVESTIGATED AREA-ZN DETECTION, NCSA-9N - INVESTIGATED AREA-TRICHLOROPROPENE DETEC, NCSA-9O - INVESTIGATED AREA-AS DETECTION, NCSA-9P - INVESTIGATED AREA-AS,HG,CU,ZN DETECTION, NCSA-9Q - INVESTIGATED AREA-HQ DETECTION)

**1989**

RD (AT - ABOVE GROUND STORAGE TANKS IRA)

IRA (FWASTEPILE - BASIN F WASTEPILE)

RI/FS (AT - ABOVE GROUND STORAGE TANKS IRA)

**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 (SANSEWER - SANITARY SEWER IRA, SPSA-6 - HYDRAZINE FUEL BLENDING/STORAGE FACILITY, W-MP - WESTERN/MOTOR POOL PLUME, CERCLA-LW - CERCLA LIQUID WWT PLANT, CSA-1A - DISPOSAL TRENCHES-SHELL TRENCHES)

**1993**

IRA (SPSA-1E - LIME BASINS - M1 PITS, NW-A - NORTHWEST BOUNDARY CONTAINMENT SYST)

**1994**

IRA (OU-N - NORTHERN PATHWAY, NCSA-1B - LIME BASINS-SETTLING BASINS)

**1995**

IRA (CSA-1C - DISPOSAL TRENCHES - COMPLEX TRENCHES, NCSA-3 - SECONDARY BASINS - FORMER BASIN F)

**1996**



1996  
RI/FS

(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, 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-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, ESA-2B - SANITARY LANDFILLS-SANIT. LANDFILL, ESA-2C - UNDIFFERENTIATED-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, ESA-3I - AGENT TESTING - TOXIC STORAGE PLOTS/DITCH, 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, 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-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, NCSA-1F - BURIED SEDIMENT/DITCHES-SO. PLTS DITCHES, NCSA-3 - SECONDARY BASINS - FORMER BASIN F, NCSA-4A - SECONDARY BASINS-DEEP WELL, NCSA-5D - DITCHES/DRAINAGE-SURFACE CANAL/BASIN A, NCSA-6A - SEWER SYSTEMS-SO. PLTS/BASIN F (CHEM.), NCSA-4B - SECONDARY BASINS-BASIN F EXTERIOR, NCSA-5A - SECONDARY BASINS-BASIN B, NCSA-5B - BURIED SEDIMENTS/DITCHES-A,B,C,D DITCHES, NCSA-5C - BURIED SEDIMENTS/DITCHES-SAND CK. LATERL, NCSA-9B - INVESTIGATED AREA-CD DETECTION, 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-8C - DITCHES/DRAINAGE-HG DETECTION/LIFT STA#2, NCSA-9A - INVESTIGATED AREA-DIMP DETECTION, NCSA-9S - INVESTIGATED AREA-HG DETECTION, NFU-A - STRUCTURES - NO FUTURE USE, AGENT, NFU-MNP - STRUCTURES-NO FUTURE USE,MFG,NON-PROCESS, NFU-MP - STRUCTURES - NO FUTURE USE,MFG,PROCESS, NPSA-1 - SEWER SYSTEMS - CHEMICAL SEWERS, NPSA-2 - TANK FARM 1403 AREA, 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-7 - SURFACE SPILL AREA, NPSA-8A - SURFACE DRAINAGE AREA, NPSA-8B - SURFACE DRAINAGE AREA, NPSA-8C - SURFACE DRAINAGE AREA, 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, NCSA-9I - INVESTIGATED AREA - BUTOXYETHANOL DETECT, NCSA-9J - INVESTIGATED AREA-HG DETECTION, NCSA-9K - INVESTIGATED-TRICHLOROPROPENE DETECTION, NCSA-9L - INVESTIGATED AREA-AS DETECTION, NCSA-9M - INVESTIGATED AREA-ZN DETECTION, NCSA-9N - INVESTIGATED AREA-TRICHLOROPROPENE DETEC, NCSA-9O - INVESTIGATED AREA-AS DETECTION, NCSA-9P - INVESTIGATED AREA-AS,HG,CU,ZN DETECTION, OU-N - NORTHERN PATHWAY)

## IRP Schedule

### 1996

IRA (FD-DUST - FUGITIVE DUST IRA, PCB-STRUC. - PCB REMOVAL, UT-TANKS - UNDERGROUND STORAGE TANKS, A-PE - AGENT PROCESS EQUIPT REMOVAL, AS - ASBESTOS REMOVAL, AT - ABOVE GROUND STORAGE TANKS IRA, NA-PE - NON-AGENT PROCESS EQUIPT REMOVAL)

RA(C) (FD-DUST - FUGITIVE DUST IRA, PCB-STRUC. - PCB REMOVAL, W-MP - WESTERN/MOTOR POOL PLUME, W-R - WESTERN/RAILYARD PLUME, A-SPN - BASIN A/SOUTH PLANTS NO. PLUME, AT - ABOVE GROUND STORAGE TANKS IRA, AW - ABANDONED WELLS CLOSURE IRA, B1727 - B1727 SUMP IRA-WASTEWATER, CERCLA-LW - CERCLA LIQUID WWT PLANT, NA-PE - NON-AGENT PROCESS EQUIPT REMOVAL)

RD (FD-DUST - FUGITIVE DUST IRA, 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, W-MP - WESTERN/MOTOR POOL PLUME, W-R - WESTERN/RAILYARD PLUME, A-PE - AGENT PROCESS EQUIPT REMOVAL, A-SPN - BASIN A/SOUTH PLANTS NO. PLUME, AS - ASBESTOS REMOVAL, AW - ABANDONED WELLS CLOSURE IRA, B1727 - B1727 SUMP IRA-WASTEWATER, CERCLA-LW - CERCLA LIQUID WWT PLANT, N-CF - NORTH/BASINS C & F PLUME, N-NP - NORTH BOUNDARY CONTAINMENT SYSTEM, NA-PE - NON-AGENT PROCESS EQUIPT REMOVAL)

### 1997

1997

RD (A-A - BASIN A NECK SYSTEM, 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-3 - SEWER SYSTEMS - CHEM/BASINS A TO F, CSA-2D - MUNITIONS TESTING-NN3601 INCINERATOR CON, 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, FWASTEPILE - BASIN F WASTEPILE, 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, ESA-4A - MUNITIONS TESTING - IMPACT/UXO, ESA-4B - MUNITIONS TESTING - DRMO AREA, 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-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, NCSA-1F - BURIED SEDIMENT/DITCHES-SO. PLTS DITCHES, NCSA-3 - SECONDARY BASINS - FORMER BASIN F, NCSA-4A - SECONDARY BASINS-DEEP WELL, NCSA-5D - DITCHES/DRAINAGE-SURFACE CANAL/BASIN A, NCSA-6A - SEWER SYSTEMS-SO. PLTS/BASIN F (CHEM.), NCSA-4B - SECONDARY BASINS-BASIN F EXTERIOR, NCSA-5A - SECONDARY BASINS-BASIN B, NCSA-5B - BURIED SEDIMENTS/DITCHES-A,B,C,D DITCHES, NCSA-5C - BURIED SEDIMENTS/DITCHES-SAND CK. LATERL, NCSA-6B - SEWER SYSTEMS-NO. PLTS/BASIN F(CHEM), NCSA-8A - SEWER SYSTEMS-SAN. SEWER TO STP, NCSA-8B - DITCHES/DRAINAGE-STP AREA, NFU-A - STRUCTURES - NO FUTURE USE, AGENT, NFU-MNP - STRUCTURES-NO FUTURE USE,MFG,NON-PROCESS, NFU-MP - STRUCTURES - NO FUTURE USE,MFG,PROCESS, 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, SPSA-1C - SOUTH PLANTS BALANCE-LIME PITS, SPSA-1D - SOUTH PLANTS-DRAINAGE DITCHES, SPSA-1E - LIME BASINS - M1 PITS, 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-1F - DISPOSAL TRENCHES-HEXA BARRELS, SPSA-1G - SOUTH PLANTS BALANCE-MISCELLANEOUS, SPSA-2A - SOUTH PLANTS-SO. TANK FARM, SPSA-2B - SOUTH PLANTS-OPEN STORAGE AREA, SPSA-2C - SOUTH PLANTS BALANCE-SALVAGE YARD, 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, SPSA-9A - SOUTH PLANTS-DRAINAGE DITCHES, SPSA-9B - SOUTH PLANTS BALANCE-MISCELL/SURF. CONTM, SSA-1B - LAKE SEDIMENTS - UPPER DERBY LAKE, SSA-1C - LAKE SEDIMENTS - LOWER DERBY LAKE, NCSA-1A - BASIN A)

**1997**

PA (HWL - HAZARDOUS WASTE LANDFILL, ELF - ENHANCED HAZARDOUS WASTE LANDFILL, ICS - INTEGRATED COVER SYSTEM)  
 RA(C) (A-A - BASIN A NECK SYSTEM, N-CF - NORTH/BASINS C & F PLUME, NW-A - NORTHWEST BOUNDARY CONTAINMENT SYST, NW-SC - NORTHWEST/SAND CREEK LATERAL PLUMES, OU-N - NORTHERN PATHWAY, OU-NW - FIRST CREEK, N-NP - NORTH BOUNDARY CONTAINMENT SYSTEM)

**1998**

RA(C) (SPSA-11 - SEWER SYSTEMS-SANITARY, SPSA-12C - SEWER SYSTEMS-PROCESS WATER, UT-TANKS - UNDERGROUND STORAGE TANKS, A-PE - AGENT PROCESS EQUIPT REMOVAL, AS - ASBESTOS REMOVAL)

**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) (CSA-2C - MUNITIONS TESTING-INCEND MUNITIONS TS, 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, ESA-4A - MUNITIONS TESTING - IMPACT/UXO, ESA-4B - MUNITIONS TESTING - DRMO AREA, NCSA-8B - DITCHES/DRAINAGE-STP AREA, NPSA-4 - BURIED SED/DITCHES-FUZE & DETONATOR MAG., 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-TRASH DUMP, 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, WSA-6A - BURIED SED/DITCHES-MOTOR POOL DITCH, A-S36BR - BASIN A/SEC 36 BEDROCK RIDGE PLUMES)

**2001**

RA(C) (NCSA-6A - SEWER SYSTEMS-SO. PLTS/BASIN F (CHEM.), SPSA-1E - LIME BASINS - M1 PITS, SPSA-10 - SEWER SYSTEMS-CHEM. SEWER, SPSA-1G - SOUTH PLANTS BALANCE-MISCELLANEOUS, 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)

**2002**

## 2002

RA(C)

(CSA-1B - UNDIFFERENTIATED-SEC. 36 BALANCE, CSA-2A - UNDIFFERENTIATED-SEC. 36 BALANCE, CSA-2B - DITCHES/DRAINAGE-SEC 36 METAL DEBRIS, CSA-3 - SEWER SYSTEMS - CHEM/BASINS A TO F, CSA-4 - UNDIFFERENTIATED-SEC. 36 BALANCE, NCSA-2B - SECONDARY BASINS-BASIN D, NCSA-2D - DITCHES/DRAINAGE-B TO D/B TO C DITCHES, NCSA-1C - BURIED SEDIMENTS/DITCHES-NO.PLANTS DITCH, NCSA-1D - DITCHES/DRAINAGE - RUNOFF STORAGE, NCSA-1E - BURN SITE-SO. PLTS. OPERATIONS, NCSA-1F - BURIED SEDIMENT/DITCHES-SO. PLTS DITCHES, NCSA-4A - SECONDARY BASINS-DEEP WELL, NCSA-5B - BURIED SEDIMENTS/DITCHES-A,B,C,D DITCHES, 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), 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-9F - INVESTIGATED AREA-ARSENIC DETECTION, SPSA-1D - SOUTH PLANTS-DRAINAGE DITCHES, SPSA-12A - SOUTH TANKS BALANCE-AERATION BASIN, SPSA-12B - SOUTH PLANTS BALANCE-SEDIMENT POND, SPSA-1B - SOUTH PLANTS BALANCE UNKNOWN MOUNDS, SPSA-1C - SOUTH PLANTS BALANCE-LIME PITS, SPSA-2A - SOUTH PLANTS-SO. TANK FARM, SPSA-2B - SOUTH PLANTS-OPEN STORAGE AREA, SPSA-2C - SOUTH PLANTS BALANCE-SALVAGE YARD, SPSA-2D - SOUTH PLANTS-DRAINAGE DITCHES, 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-DRAINAGE DITCHES, SPSA-5A - SOUTH PLANTS-DRAINAGE DITCHES, 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-8C - SPSA8 BALANCE/SURFACE CONTAMINATION)

## 2003

RA(O)

(W-R - WESTERN/RAILYARD PLUME)

RA(C)

(CSA-1D - SANITARY LANDFILLS-SAN LANDFILL/INCIN834, CSA-2D - MUNITIONS TESTING-NN3601 INCINERATOR CON, NCSA-2A - SECONDARY BASINS-BASIN C, NCSA-5A - SECONDARY BASINS-BASIN B)

## 2004

RA(C)

(ESA-2B - SANITARY LANDFILLS-SANIT. LANDFILL, SPSA-1F - DISPOSAL TRENCHES-HEXA BARRELS)

## 2005

PA

(SWP - SITE-WIDE PROGRAM)

## 2006

RA(O)

(NW-SC - NORTHWEST/SAND CREEK LATERAL PLUMES, A-S36BR - BASIN A/SEC 36 BEDROCK RIDGE PLUMES, A-SPN - BASIN A/SOUTH PLANTS NO. PLUME, N-CF - NORTH/BASINS C & F PLUME)

RA(C)

(NCSA-1G - SECTION 36 BAL. OF AREAS SOIL REMED)

## 2008

RA(C)

(NPSA-6 - NORTH PLANT SOIL REMEDIATION)

## 2009

RA(C)

(NCSA-8A - SEWER SYSTEMS-SAN. SEWER TO STP, WSA-7A - SEWER SYSTEM-SANITARY SEWER SEDIMENTS)

## 2010

**2010**

LTM (CERCLA-LW - CERCLA LIQUID WWT PLANT)

RA(C) (CSA-1C - DISPOSAL TRENCHES - COMPLEX TRENCHES, FWASTEPILE - BASIN F WASTEPILE, NCSA-4B - SECONDARY BASINS-BASIN F EXTERIOR, SPSA-1A - SOUTH PLANTS BALANCE CENTRAL PROCESSING, CSA-1A - DISPOSAL TRENCHES-SHELL TRENCHES, NCSA-1A - BASIN A, NCSA-1B - LIME BASINS-SETTLING BASINS)

**2011**

RA(C) (NCSA-3 - SECONDARY BASINS - FORMER BASIN F, NFU-MNP - STRUCTURES-NO FUTURE USE,MFG,NON-PROCESS)

**Additional Past Phase Completion Milestones**

2009

RA(C) (NCSA-8A - SEWER SYSTEMS - SAN. SEWER TO STP)

RA(C) (WSA-7A - SEWER SYSTEM - SANITARY SEWER SEDIMENTS)

**Projected Phase Completion Milestones**

See attached schedule

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

Site ID	Site Name	ROD/DD Title	ROD/DD Date
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**Final RA(C) Completion Date:** 201107

**Schedule for Next Five-Year Review:** 2016

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

## ROCKY MOUNTAIN ARSENAL IRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
A-A	BASIN A NECK SYSTEM	RA(O)						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
ELF	ENHANCED HAZARDOUS WASTE LANDFILL	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
HWL	HAZARDOUS WASTE LANDFILL	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
ICS	INTEGRATED COVER SYSTEM	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
N-NP	NORTH BOUNDARY CONTAINMENT SYSTEM	RA(O)						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
NCSA-3	SECONDARY BASINS - FORMER BASIN F	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
NW-A	NORTHWEST BOUNDARY CONTAINMENT SYST	RA(O)						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
OU-N	NORTHERN PATHWAY	RA(O)						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
OU-NW	FIRST CREEK	RA(O)						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
SWP	SITE-WIDE PROGRAM	LTM						
SITE ID	SITE NAME	PHASE	FY17	FY18	FY19	FY20	FY21	FY22+
W-MP	WESTERN/MOTOR POOL PLUME	LTM						

## Community Involvement

**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



