FY2015

WHITE SANDS MISSILE RANGE

Army Defense Environmental Restoration Program

Installation Action Plan

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Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multiyear cleanup program for an installation. The plan identifies environmental cleanup requirements at each site or area of concern (AOC), and proposes a comprehensive, installation-wide approach, along with the costs and schedules associated with conducting investigations and taking the necessary remedial actions (RA).

In an effort to coordinate planning information between the restoration manager, the US Army Environmental Command (USAEC), White Sands Missile Range (WSMR), 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

AAA	Anti-Aircraft Artillery
AAF	Army Airfield
ABGR	Alamogordo Bombing and Gunnery Range
ACA	Accelerated Corrective Action
ACSIM	Assistant Chief of Staff for Installation Management
AEDB-CC	Army Environmental Database-Compliance-related Cleanup
AEDB-R	Army Environmental Database-Restoration
AFB	Air Force Base
AMRAD	Anti-Missile Radar
AOC	Area of Concern
AST	Aboveground Storage Tank
AUA	Annual Unit Audit
bgs	below ground surface
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
C&D	Construction and Demolition
CAC	Corrective Action Complete
CC	Compliance-related Cleanup
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CLIN	Contract Line Item Number
CMI	Corrective Measure Implementation
CMI(C)	Corrective Measure Implementation (Construction)
CMI(O)	Corrective Measure Implementation (Operation)
CMS	Corrective Measures Study
COPC	Contaminants of Potential Concern
CR	Compliance Restoration
CS	Confirmatory Sample
CSM	Conceptual Site Model
CTT	Closed, Transferred and Transferring
cy	cubic yard
DD	Decision Document
DERP	Defense Environmental Restoration Program
DF	Deuterium Fluoride
DLA	Defense Logistics Agency
DMM	Discarded Military Munitions
DMN	n-Nitrodimethylamine
DoD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
DRO	Diesel Range Organics
DSERTS	Defense Site Environmental Restoration Tracking System
EOD	Explosive Ordnance Disposal
ER,A	Environmental Restoration, Army (Formerly DERA)
FFTA	Fire Fighting Training Area
FRA	Final Remedial Action
FS	Feasibility Study
ft	feet

Acronyms

FUDS	Formerly Used Defense Sites
FY	Fiscal Year
GIS	Geographic Information System
GWQB	Groundwater Quality Bureau
HCF	HELSTF Cleaning Facility
HELSTF	High Energy Laser Systems Test Facility
HF	Hydrogen Fluoride
HMX	High Melting Explosive
HRR	Historical Records Review
HSWA	Hazardous and Solid Waste Amendment
HTA	Hazardous Test Area
HWB	Hazardous Waste Bureau
HWSF	Hazardous Waste Storage Facility
IAP	Installation Action Plan
ID	Identification
IMCOM	Installation Management Command
IR	Installation Restoration
IRA	Interim Remedial Action
IRFNA	Inhibited Red Fuming Nitric Acid
IRM	Interim Remedial Measure
IRP	Installation Restoration Program
kg	kilogram
L	liter
lbs	pounds
LC	Launch Complex
LTM	Long-Term Management
LUC	Land Use Control
MC	Munitions Constituent
MCL	Maximum Contaminant Level
MEC	Munitions and Explosives of Concern
MeCL	Methylene Chloride
MEK	Methyl Ethyl Ketone
mg	milligram
MMRP	Military Munitions Response Program
MPL	Main Post Landfill
MPWWTP	Main Post Wastewater Treatment Plant
MR	Munitions Response
MRS	Munitions Response Site
MSW	Municipal Solid Waste
NASA	National Aeronautics and Space Administration
NATO	North Atlantic Treaty Organization
NFA	No Further Action
NM	New Mexico
NMED	New Mexico Environment Department
NMEID	New Mexico Environment Improvement Division

Acronyms

NOD	Notice of Disapproval/Deficiency
NPL	National Priorities List
NPS	National Park Service
OB	Open Burn
OB/OD	Open Burning/Open Detonation
OD	Open Detonation
ODUSD(I&E)	Office of the Deputy Under Secretary of Defense for Installations and Environment
ORC	Oscura Range Center
PA	Preliminary Assessment
PBA	Performance-Based Acquisition
PCB	Polychlorinated Biphenols
POL	Petroleum, Oil and Lubricants
ppm	parts per million
PRS	Pressure Recovery System
PSH	Phase-Separated Hydrocarbons
PSTB	Petroleum Storage Tank Bureau
RA	Remedial Action
RA(O)	Remedial Action (Operations)
RAB	Restoration Advisory Board
RAMS	Radar Target Scatter Advanced Measurements
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RDX	Research Department Explosive (cyclotrimethylenetrinitramine)
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SI	Site Inspection
SOB	Statement of Basis
SRC	Stallion Range Center
SSL	Soil Screening Levels
STP	Sewage Treatment Plant
SVE	Soil Vapor Extraction
SVOC	Semi-Volatile Organic Compound
SVS	Soil Vapor Survey
SWB	Solid Waste Bureau
SWMU	Solid Waste Management Unit
TAL	Target Analyte List
TAPP	Technical Assistance for Public Participation
TC	Toxicity Characteristic
TCA	Trichloroethane
TCE	Trichloroethylene

Acronyms

TNT	Trinitrotoluene
TPH	Total Petroleum Hydrocarbons
TRC	Technical Review Committee
TSA	Technical Support Area
TTF	Temperature Test Facility
UDMH	Unsymmetrical Dimethyl Hydrazine
USACE	US Army Corp of Engineers
USAEC	US Army Environmental Command
USEPA	US Environmental Protection Agency
USGS	US Geological Survey
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VCA	Volutary Corrective Action
VCM	Voluntary Corrective Measures
VOC	Volatile Organic Compound
VSI	Visual Site Inspection
WQCC	Water Quality Control Commission
WSMR	White Sands Missile Range
WSNM	White Sands National Monument
WWTP	Wastewater Treatment Plant

Site Alias List

AEDB-R Site ID to Alias List

AEDB-R #	Alias
CCWS-04	SWMU-162
CCWS-05	SWMU 142
CCWS-08	SWMU 164
CCWS-09	SWMU 198
CCWS-100	SWMU 101
CCWS-101	
CCWS-102	SWMU 102
CCWS-16	SWMU 197
CCWS-81	SWMUs 1-7
CCWS-84	SWMU-128
CCWS-85	SWMU-129
CCWS-86	
CCWS-88	Paint Shop
CCWS-90	SWMU 165
CCWS-91	SWMU 216
CCWS-92	SWMU-218
CCWS-93	AOC-A
CCWS-94	AOC B
CCWS-95	AOC D
CCWS-96	AOC E
CCWS-98	AOC Z
CCWS-99	SWMU 8 & 9
WSMR-003-R-01	AOC AA
WSMR-004-R-01	AOC AB
WSMR-006-R-01	AOC AD
WSMR-007-R-01	
WSMR-05	SW157,159
WSMR-14	SMW114-115
WSMR-27	SWMU 89
WSMR-29	SWMU-79
WSMR-30	SWMU-80
WSMR-31	SWMU-21
WSMR-32	SWMU-22
WSMR-33	SWMU 14-15
WSMR-35	SWMU 107
WSMR-39	SWMU-63
WSMR-40	SWMU-64
WSMR-41	SWMU-108
WSMR-43	SWMU 31-32
WSMR-49	SWMU 33-34
WSMR-50	SWMU 35-36
WSMR-53	SWMU-145
WSMR-54	SWMU-143

Site Alias List

WSMR-55	SWMU-154
WSMR-56	SWMU-137
WSMR-57	SWMU-156
WSMR-58	SWMU-153
WSMR-59	SWMU-62
WSMR-60	SWMU 12,13
WSMR-67	SMU121-123
WSMR-70	SWM119-120
WSMR-71	SWMU47-49
WSMR-72	SWMU 163
WSMR-73	SMWU-17
WSMR-75	SMU116-118
WSMR-77	SWMU 125
WSMR-78	SWMU-147
WSMR-79	SWMU-16
WSMR-81	SWMU-86
WSMR-82	SWMU-87
WSMR-83	141/148
WSMR-84	SWMU-140
WSMR-85	SWMU 37
WSMR-86	SWMU-168
WSMR-87	SWMU 150

Installation Information

Installation Locale

Installation Size (Acreage): 2048000
City: White Sands Missile Range
County: Dona Ana, Socorro, Lincoln, Otero, and Sierra
State: NM
Other Locale Information

WSMR is located in south central New Mexico (NM) and spans five counties: Dona Ana, Socorro, Lincoln, Otero, and Sierra. The range is located in an area known as the Tularosa Basin. The headquarters area is 20 miles east of Las Cruces, 50 miles southwest of Alamogordo, and 45 miles north of El Paso, Texas. The range boundaries extend almost 100 miles north to south by 40 miles east to west. At almost 3,200 square miles (2,048,000 acres), the range is the largest military installation in the country. In addition to the main installation, there are two extension areas located adjacent to the north and west boundaries, and several joint-use land areas. These areas add over 3.8 million acres to the range. The WSMR is partially bordered on the east by Holloman Air Force Base (AFB) and on the south by Fort Bliss Military Reservation. US Highway 70 crosses WSMR from east to west and serves as the main access to the Main Post area. There are no other populated areas located within the boundaries of the installation.

Installation Mission

The mission of the WSMR is to provide the Army, the Navy, the Air Force, the Department of Defense (DoD), and other customers with high quality services for experimentation, test, research, assessment, development, and training in support of the nation at war.

Lead Organization

IMCOM

Lead Executing Agencies for Installation

WSMR Public Works Directorate - Environmental Division

USAEC

Regulator Participation

Federal	US Environmental Protection Agency (USEPA), Region VI, Dallas, TX
State	New Mexico Environmental Department (NMED), Santa Fe, NM

National Priorities List (NPL) Status

WHITE SANDS MISSILE RANGE is not on the NPL

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

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

Installation Information

Installation Program Summaries

IRP

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

Affected Media of Concern: Groundwater, Soil

MMRP

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

Affected Media of Concern: Groundwater, Soil

CR

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

Affected Media of Concern: Groundwater, Soil

5-Year / Periodic Review Summary

5-Year / Periodic Review Summary

Status	Start Date	End Date	End FY
Complete	201310	201411	2015
Complete	200810	200909	2009
Planned	201810	201911	2020

Last Completed 5-Year / Periodic Review Details

Associated ROD/DD Name	Sites
WSMR-14 DD	WSMR-14
WSMR-14 DD	WSMR-14

Results The review was intended for use by WSMR and AEC for post closure management. The remedy is functioning as intended by the CMI, exposure assumptions, toxicity data, cleanup levels, and RAOs are valid and no new information will effect the remedy.

Actions In coordination with NMED, remove or reduce frequency of COCs, SVOCs, TPH, and Explosives Residue from the sampling program.

Plans Continue annual LTM as required by the Approved CMI Work Plan. Complete recommended actions in 2015.

Recommendations and Implementation Plans:
The selected corrective action and ongoing long-term monitoring (LTM) and land use controls (LUC) are effective in protecting against all exposure pathways. The landfill cap and drainage controls have been effective at preventing groundwater contamination and direct contact with any contamination. However, it is recommended that WSMR will work with NMED to clarify the monitoring requirements given past results.

Cleanup Program Summary

Installation Historic Activity

The WSMR is an active installation serving as the US Army's largest rocket and missile development, firing and testing facility. It is a major center for the testing of new missile systems. The WSMR performs applied research, field trials of new missile types, and new applications of existing missile systems. The Range also hosts inter-forces training of troops in a desert environment, using tactical exercises for the North Atlantic Treaty Organization (NATO) and Allied Forces.

The range was established in 1945 for the development of a missile defense program that started with the testing of captured German V-2 rockets. The range, formerly known as White Sands Proving Ground, was formed from privately held grazing land that was either donated to the government or condemned for the use of the government. The WSMR has been active since its establishment without any decrease in land holdings.

The current configuration of WSMR includes launch sites, impact areas, instrumentation sites, and support facilities required to develop and test missiles and rockets. The WSMR is designated as a National Range focused on the support of missile development and test programs for the Army, Navy, Air Force, National Aeronautics and Space Administration (NASA), and other governmental agencies. Thousands of missile firings, airdrops, and static tests have been conducted as part of this mission.

Initiation of the Installation Restoration Program (IRP) began in August 1988 with a Resource Conservation and Recovery Act (RCRA) facility assessment (RFA) of WSMR, performed by A.T. Kearney for the USEPA, Region VI. This report identified 138 solid waste management units (SWMU) and 26 AOCs.

The RFA is generally considered to be equivalent to the preliminary assessment (PA) required by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

In September 1989, the WSMR was issued a RCRA Part B Operating Permit for the operation of a Container Storage Area (WSMR Hazardous Waste Storage Facility). The Hazardous and Solid Waste Amendment (HSWA) module of this permit addresses the investigation and corrective actions regarding releases from WSMR SWMUs (many of which are or are contained within IRP sites referenced in this IAP). The HSWA Corrective Action module of the RCRA Part B permit contains a listing of WSMR SWMU sites requiring investigation or cleanup.

From 1989 to 1996, the USEPA served as the lead regulatory agency with the NMED providing review for all work proposed by WSMR. In January 1996, the USEPA relinquished HSWA regulatory authority to the NMED. The NMED is currently the lead regulatory agency with the USEPA providing oversight and supplementary assistance.

Since 1988, the WSMR has continued to investigate and cleanup sites warranting further action. The WSMR has performed numerous voluntary cleanup actions and has conducted groundwater monitoring and soil borings to document the presence or absence of contaminants. The WSMR has developed remedial work plans outlining the best procedures for cleanup at remaining sites, and petitioned the regulatory authority, the NMED, for no further action (NFA) rulings for sites at which WSMR has performed cleanup actions, and at sites determined to have no contamination after completion of investigation(s).

Installation Program Cleanup Progress

IRP

Prior Year Progress: The RCRA facility investigation (RFI) report for WSMR-56, 58, 70, 75, 77, 81 and 82 were approved. Background study for WSMR-30, 31, 32, 33, 60, 73, 79, and 84 was approved. RFI reports for WSMR-, and High Energy Laser System Test Facility (HELSTF) are under NMED review. LTM performed at WSMR-14. Interim remedial action (IRA) for WSMR-55 has ceased and is under evaluation. An accelerated corrective action (ACA) work plan for WSMR-75 was approved by the NMED.

Future Plan of Action: WSMR will implement corrective measures at WSMR-75. WSMR will seek out approval of the HELSTF Phase III RFI. The LTM will continue at WSMR-14. WSMR will submit corrective action complete (CAC) petitions for WSMR-56, 58, 77, 81 and 82. WSMR anticipates NMED approval on the CAC petitions for WSMR-05, 31, 35, 39, 40, 41, 67, 71, 72, and 84. WSMR-30, 32, 33, 60, 73

and 79 may require additional investigation work based on the NMED CAC petition disapproval notice.

MMRP

Prior Year Progress: The site inspection (SI) is complete. The RFI report for WSMR-0003-R-01, WSMR-004-R-01 and WSMR-006-R-01 was submitted to NMED for review. The RI/IRA report for WSMR-007-R-01 is still under stakeholder review.

Future Plan of Action: WSMR will address comments from stakeholders on WSMR-007-R-01 and finalize the RI/IRA report. WSMR anticipates achieving NMED RFI approval for WSMR-0003-R-01, WSMR-004-R-01 and WSMR-006-R-01.

CR

Prior Year Progress: New site CCWS-101 was discovered and a release assessment was conducted. RFI for CCWS-77 was designated as an active site and additional investigation work will not be conducted until the site is decommissioned.

Future Plan of Action: WSMR will submit a CAC petition for CCWS-04. WSMR anticipates completing additional remediation work at CCWS-16. Will implement an accelerated removal action at CCWS-101. Expecting NMED approval of the CAC with controls petition for CCWS-08 and CCWS-09. WSMR looking at submitting RFI work plans for CCWS-81, 84, 86, 88, 90, 91, 92, 93, 94, 95, 96, 98, 99 and 102. WSMR will submit a closure plan for CCWS-100.

WHITE SANDS MISSILE RANGE

Army Defense Environmental Restoration Program
Installation Restoration Program

IRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 74/35

Installation Site Types with Future and/or Underway Phases

2 Above Ground Storage Tank
(WSMR-43, WSMR-50)
1 Contaminated Soil Piles
(WSMR-32)
2 Disposal Pit/Dry Well
(WSMR-73, WSMR-87)
1 Fire/Crash Training Area
(WSMR-31)
1 Incinerator
(WSMR-77)
11 Landfill
(WSMR-05, WSMR-14, WSMR-39, WSMR-40, WSMR-58, WSMR-70, WSMR-71, WSMR-72, WSMR-81, WSMR-82, WSMR-84)
1 Sewage Effluent Settling Ponds
(WSMR-83)
3 Sewage Treatment Plant
(WSMR-29, WSMR-30, WSMR-59)
1 Soil Contamination After Tank Removal
(WSMR-35)
7 Spill Site Area
(WSMR-41, WSMR-54, WSMR-55, WSMR-57, WSMR-60, WSMR-85, WSMR-86)
1 Storage Area
(WSMR-33)
3 Surface Impoundment/Lagoon
(WSMR-27, WSMR-49, WSMR-53)
3 Underground Storage Tank
(WSMR-67, WSMR-75, WSMR-78)
1 Washrack
(WSMR-79)
1 Waste Lines
(WSMR-56)

Most Widespread Contaminants of Concern

Explosives, Metals, Petroleum, Oil and Lubricants (POL), Volatiles (VOC)

Media of Concern

Groundwater, Soil

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

Site ID	Site Name	Action	Remedy	FY
WSMR-34	TTF HDPE-LINED LAGOON (REMOVED)	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1988
WSMR-41	VE Well at TTF	IRA	CAPPING	1988
WSMR-50	SWMUs 35-36 and AOC-V	IRA	REMOVAL	1989
WSMR-15	FORMER HAZARDOUS WASTE LANDFILL	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1990
WSMR-74	FORMER WST OIL TANK/SUMP @ BLDG 1778	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1990
WSMR-77	VET & MCAFFEE CLINIC INCINERATORS	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1991

IRP Summary

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

Site ID	Site Name	Action	Remedy	FY
WSMR-34	TTF HDPE-LINED LAGOON (REMOVED)	FRA	CAPPING	1993
WSMR-67	STALLION ASPHALT TANKS	IRA	REMOVAL	1993
WSMR-75	RHODES CANYON SUBGRADE ASPHALT TANKS (3)	IRA	WASTE REMOVAL - SOILS	1993
WSMR-23	TULA PEAK BURIAL PITS	FRA	FENCE OR OTHER SITE ACCESS CONTROL MEASURES	1995
WSMR-30	STP SLUDGE WASTE PILE (MAIN POST)	IRA	REMOVAL	1995
WSMR-41	VE Well at TTF	IRA	SOIL VAPOR EXTRACTION	1995
WSMR-57	FORMER GOLF COURSE PESTICIDE STG SHED	IRA	WASTE REMOVAL - SOILS	1995
WSMR-11	LIQ PROPELLANT EVAP/NEUT PITS (10)	FRA	WASTE REMOVAL - SOILS	1996
WSMR-20	BOMBLET BURIAL SITE	FRA	FENCE OR OTHER SITE ACCESS CONTROL MEASURES	1996
WSMR-31	MAIN POST FORMER FFTA & PIT	IRA	WASTE REMOVAL - SOILS	1996
WSMR-36	FORMER WASTE/OIL TANK&SUMP EAST BLG 1794	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1996
WSMR-78	SWMUs 147 and 23-26	IRA	WASTE REMOVAL - SLUDGES	1996
WSMR-84	FORMER LC-37 PAINT DUMP	IRA	REMOVAL	1996
WSMR-33	USED BATTERY ACCUM AREAS (MAIN POST)	IRA	REMOVAL	1997
WSMR-54	HELSTF STORAGE YARD CHROMATE SPILL	IRA	CHEMICAL REDUCTION/OXIDATION	1999
WSMR-14	FORMER RHODES CANYON LANDFILLS	FRA	CAPPING	2004
WSMR-71	FORMER NORTH OSCURA PEAK LANDFILL	IRA	REMOVAL	2004
WSMR-09	NUC EFFECTS REACTOR FACILITY PONDS	FRA	WASTE REMOVAL - SOILS	2006
WSMR-32	MAIN POST FORMER FFTA WASTE PILE	IRA	REMOVAL	2006
WSMR-55	HELSTF SYSTEMIC DIESEL SPILL	IRA	DUAL-PHASE EXTRACTION	2007
WSMR-05	FORMER OSCURA RANGE CENTERLANDFILLS	IRA	REMOVAL	2008
WSMR-27	FORMER ACID NEUT UNIT @ HWSF LDING	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	2008
PBA@WSMR	PBA@WSMR	FRA	OTHER	2009
WSMR-27	FORMER ACID NEUT UNIT @ HWSF LDING	IRA	REMOVAL	2014

Duration of IRP

Date of IRP Inception: 197901

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201906/201906

Date of IRP completion including Long Term Management (LTM): 203109

IRP Contamination Assessment

Contamination Assessment Overview

The WSMR submitted a RCRA Part A permit application after the New Mexico Hazardous Waste Management Regulations were published on May 19, 1980. The permit included the waste management activities at the cleaning facility, located at the HELSTF, 18.5 miles northeast of the main post. Through negotiations with the New Mexico Environmental Improvement Division, Hazardous Waste Section, the final design was approved and incorporated into the RCRA Part A permit on Jan. 30, 1984 (Pache, 1984).

In 1984, the WSMR applied for a RCRA Part B permit, which included operations at HELSTF. As part of the permit application, WSMR was required to conduct an RFA to determine whether there is a potential or an actual release of hazardous waste or hazardous waste constituents anywhere at its facility. Distinct locations of potential contamination are referred to as SWMUs. Less defined areas of potential contamination are referred to as AOCs.

To date, each WSMR environmental restoration site is referred to by its SWMU or AOC identification (ID) and its IRP ID, when applicable. Under current DoD guidance, sites contaminated prior to Oct. 17, 1986 are now eligible for Defense Environmental Restoration Program (DERP) funding under the Compliance Restoration Program (CR), if located at an active DoD installation.

The WSMR submitted the RFA (A.T. Kearney, Inc., 1988) to the USEPA Region VI in 1988 and identified 138 SWMUs and 26 AOCs. Among these sites, 17 SWMUs and three AOCs were located at HELSTF. This point is considered the initiation of the WSMR IRP. The results of this RFA were used by the USEPA to prepare the HSWA corrective action module of the RCRA Part B permit. The USEPA approved and issued the permit to WSMR on Sept. 29, 1989. Stipulations of the permit required WSMR to investigate and clean up 92 SWMU sites and four AOCs.

Before the investigation of SWMUs, the USEPA Region VI directed WSMR to conduct an interim remedial measure (IRM) to address a leaking underground storage tank (UST) at the HELSTF. An IRM work plan was submitted to the USEPA and the NMED in December 1991. Since that time, WSMR has been performing the required cleanup to remove floating diesel product from the groundwater. This is IRP site WSMR-55.

The 92 SWMU sites identified in Appendices I-IV of the permit were assessed for releases to the environment during the implementation of the Phase I RCRA RFI. The Phase I RFI Report (IT Corp., 1992) identified 80 SWMUs that required further investigation. Of the 80 sites, 24 were approved for no further RA planned in September 1993. A modification to the RCRA Part B permit was initiated to include this change in the HSWA corrective action module of the permit. The change was made and approved by the USEPA Region VI in December 1995.

Based on the USEPA and the NMED direction, WSMR initiated a Phase II work plan to further investigate the presence or absence of contaminates at 52 SWMUs identified by the Phase I investigation as containing contaminates that may pose a risk to human health or the environment. The USEPA and the NMED approved the work plan in September 1993.

In December 1994, WSMR completed the Phase II RFI (Sverdrup, 1994) and submitted the report for regulatory review. The WSMR received state and federal USEPA, Region VI comments on the Phase II RFI in 1996. Both the NMED and the USEPA Region VI issued notices of deficiency (NOD) (Kelley, 1996; Honker, 1996) regarding the report. The NMED emphasized the need to address the SWMUs at HELSTF differently from those at other locations. The WSMR provided their final response to the NOD on Sept. 22, 1997 (Ladd, 1997). Since then, many environmental restoration activities have been initiated and/or completed on a site-by-site basis.

Beginning in January 2000, WSMR submitted a series of NFA petitions to the NMED Hazardous Waste Bureau (HWB) for various SWMUs on the WSMR RCRA permit. The petitions were submitted based on the results of previous investigations and closure reports documenting remedial activities, but were denied by the NMED in March 2002 (Frischkorn, 2002) on the basis that further characterization and ecological risk assessment were required. Many of the related IRP sites were designated as RC during 2000 in the Army's defense site environmental restoration tracking system (DSERTS) database system. During fiscal year (FY)02, the SWMUs were subsequently reopened within WSMR's IRP for further study and included 18 SWMUs dispersed among 14 related IRP sites.

The sites reopened in 2002 are being investigated under two distinct groups - those sites located near the main post and those sites located at HELSTF. A Phase III RFI work plan was developed for those sites located on or near the main post. [The work plan was subsequently approved by the NMED in March 2005.] This effort is commonly referred to as the "Multi-Site Main Post Phase III RFI". This work plan includes 15 SWMUs dispersed among 11 IRP sites.

IRP Contamination Assessment

Contamination Assessment Overview

Additionally, and in large part due to the Phase II RFI comments received from the NMED in 1996, WSMR has initiated a Phase III RFI at the HELSTF to investigate environmental contamination at HELSTF using a holistic approach. The work plan was developed and includes IRP sites WSMR-52 through WSMR-55, WSMR-78, WSMR-83 and WSMR-85. [The work plan was subsequently approved by the NMED in January 2006.] IRP sites WSMR-53, WSMR-78 and WSMR-83 were part of those sites reopened during FY02, and have one SWMU related to each. This investigative effort is underway and is commonly referred to as the "HELSTF Phase III RFI".

Finally, various efforts continue on a site-by-site basis at other IRP sites including WSMR-14 and WSMR-61. A multi-site performance-based acquisition (PBA) was awarded in September 2008.

NM does not recognize LUCs. Therefore, all existing LUCs at WSMR are internal Army controls. They are documented in the Master Plan, the installation geographic information system (GIS), and site-specific documents.

In December 2009, WSMR renewed the RCRA Part B permit with the NMED. The new permit includes sites that have not been formally closed and require corrective action.

Cleanup Exit Strategy

The strategy for reaching RIP/RC for the current IRP WSMR sites that require future activity is as follows. Awaiting final state approval of the CAC petition report, thus RC, for sites WSMR-30 through WSMR-33, WSMR-36, WSMR-57, WSMR-60, WSMR-73, WSMR-74, WSMR-79 and WSMR-84 (11 sites) will be achieved.

WSMR anticipates achieving CAC with controls on the majority of the HELSTF sites upon completion and approval of the HELSTF Phase III RFI report. LTM will include continued groundwater monitoring at HELSTF.

WSMR-14 continues to be under LTM.

IRP Previous Studies

	Title	Author	Date
1979			
	Installation Assessment of White Sands Missile Range	Report No. 138, US Army Toxic and Hazardous Materials Agency	APR-1979
1984			
	Part A Revision, USEPA ID NO: NM 2750211235	USEPA	DEC-1984
1987			
	Final Contamination Assessment Report Temperature Test Facility	Geoscience Consultants Ltd	MAY-1987
1988			
	Groundwater Contamination Survey No. 38 26 0862 88 Evaluation of Solid Waste Management Unit	U.S. Army Environmental Hygiene Agency,	FEB-1988
	RCRA Facility Assessment PR/VSI Report	A.T. Kearney	AUG-1988
	Simulated Water-Level and Water Quality Changes in the Bolson-Fill Aquifer, Post Headquarters Area	US Geological Survey	DEC-1988
1991			
	Factors That Effect Performance of In-Situ Soil Venting Operations and Contamination Assessment of Methylene Chloride at the TTF Facility	New Mexico State University	OCT-1991
	Interim Remedial Measures Work Plan for the Systemic Diesel Spill (SWMU 154), High Energy Laser System Test Facility	Lockheed Engineering and Science Co.	DEC-1991
1992			
	Final RCRA Facility Investigation (RFI) Report, Appendix I Sites (Vol. I & II)	I.T. Corp.	MAR-1992
	Final HELSTF Groundwater Assessment	I.T. Corp.	DEC-1992
	Final RCRA Facility Investigation (RFI) Report, Appendix II IV Sites (Vol. I & II)	I.T. Corp.	DEC-1992
1993			
	Final Closure Report for the Storage Tank Removal and Remediation at Stallion Range Center	ASI	AUG-1993
	Final Phase II Addendum to the RCRA Facility Investigation (RFI) Work Plans, Appendix I, II, III and IV Sites	Sverdrup	OCT-1993
	Final Interim Report Systemic Diesel Spill (SWMU 154) HELSTF Cleaning Facility (Vols. I&II)	I.T. Corp.	DEC-1993
1994			
	Systemic Diesel Spill, SWMU 154 [Final] Free Product Recovery	Tetra Tech, Inc.	AUG-1994
	Commissary Landfill Trench Sampling	ASI	OCT-1994
	Groundwater Quality Investigation [Report] for the Monitoring Well Program	Environmental Science and Engineering (ESE)	OCT-1994
	Phase II RCRA Facility Investigation Appendices I, II, III and IV Sites (Revision 1)	Sverdrup	DEC-1994
1995			
	Soil Vapor Extraction & Treatment Plant for the Temperature Test Facility	AWD Technologies, Inc.	JAN-1995
	Operations and Maintenance Manual; Product Recovery System for the HELSTF Systemic Diesel Spill (SWMU 154)	ASI	MAY-1995

IRP Previous Studies

	Title	Author	Date
1995			
	Investigation Derived Waste [Disposal] Close out Report	Dow	DEC-1995
1996			
	RCRA Facility Investigation Report - Temperature Test Facility	Woodward-Clyde Consultants	MAY-1996
	Notice of Deficiencies Phase II RCRA Facility Investigation (RFI) Report for Appendices I, II, III and IV SWMUs	Honker, W.K.	MAY-1996
	Close Out Report, SWMU 61, Tula Peak Unexploded Ordnance Incinerator, SWMUs 92-100, Liquid Propellant Storage Area	Dow	AUG-1996
	Results of Groundwater Sampling and Analyses from Red Rio Munitions Burial Sites [SWMUs 50-54]	MEVATEC Corp.	AUG-1996
	Report of Interim Remedial Action, Removal and Disposal of Dried Sludge, SWMU 79 White Sands Missile Range, New Mexico	Dow	AUG-1996
	Rational National Standards Initiative, White Sands Missile Range, Final Report - Presentation of Screening Levels and Remedial Cost Estimates	Radian International	AUG-1996
	Notice of Deficiency (NOD) for the Phase II RFI Report for Appendix I, II, II and IV Sites, dated December 1994	NMED (Kelly, Ed)	SEP-1996
	Groundwater Quality Investigation [Report] for the Monitoring Well Program	ESE	OCT-1996
1997			
	Close Out Report, SWMU 8, Waste Oil Tank	Dow	JAN-1997
	Close Out Report, SWMU 21, Former Fire Fighting Training Area	Dow	JAN-1997
	Close Out Report, SWMU 145, Test Cell 4 Lagoon	Dow	JAN-1997
	Close Out Report, SWMU 22, Abandoned Soil Piles Near the FFTA	Dow	JAN-1997
	Close Out Report, SWMU 147, Underground Waste Tank (Sump)	Dow	JAN-1997
	Close Out Report, Underground Waste Tank (Sump)	Dow	JAN-1997
	WSMR Final Response to NMED Comments on the WSMR Phase-II RFI-Revision 1, December 1994	Ladd, T.A.	SEP-1997
	Close Out Report (Draft), SWMUs 14 and 15, Used Battery Accumulation Areas	Radian International	SEP-1997
	Closeout Report, SWMUs 82 & 83, Sewage Treatment Plant Former Drainage Ditches	Radian International	SEP-1997
1998			
	Groundwater Monitoring Program at Hazardous Test Area, Tula Peak, Stallion Range Center and Oscura Bombing Range	MEVATEC Corp.	MAR-1998
	Historic Property Identification Efforts of Four Solid Waste Management Units	Human Systems Research (HSR)	MAY-1998
	Work Plan of Action, Landfill Debris Removal, Oscura Range Center	Radian International	JUN-1998
	Plan of Action, Landfill Debris Removal, Oscura Range Center	Radian International	DEC-1998
1999			
	Groundwater Monitoring at the HELSTF, Cleaning	USGS	FEB-1999

IRP Previous Studies

	Title	Author	Date
1999			
	Facility RCRA Monitoring Well Sampling		
	In situ Gaseous Reduction Pilot Demonstration-Final Report	DOE	FEB-1999
2000			
	Petition to Perform Class III Modifications to Remove Solid Waste Management Units 10, 11, 16, 17, 19, 20, 80, 132, 140 and 156 from the White Sands Missile Range RCRA Part B Permit	MEVATEC Corp.	JAN-2000
	RCRA Facility Investigation Former Main Post Landfill 1A [WSMR-39 (SWMU 64)]	MEVATEC Corp.	APR-2000
	RCRA Facility Investigation Former Main Post Landfill 2A WSMR-40 (SWMU 64	MEVATEC Corp.	JUN-2000
2001			
	RCRA Facility Investigation Former Main Post Landfill No. 3 WSMR-61 (SWMU 65)	MEVATEC Corp.	JUN-2001
	Closure Report Waste Pond #1, Nuclear Effects Reactor Facility	MEVATEC Corp.	SEP-2001
	Petition to Perform Class III Modifications to Remove Solid Waste Management Units 27, 28, 29, 30, 66, 67, 85, 144 and 146 from the White Sands Missile Range RCRA Part B Permit	MEVATEC Corp	SEP-2001
2002			
	Results of the April 2002 Semiannual Long Term Groundwater Monitoring Event at the TTF (WSMR-41, SWMU 108; WSMR-34, SWMU 104)	MEVATEC Corp.	JUL-2002
	Report of the Spring 2002 Groundwater Sampling Event at the HELSTF Construction Landfill Site [WSMR-52]	MEVATEC Corp.	OCT-2002
	Report of the Spring 2002 Groundwater Sampling Event at the HELSTF Chromium Spill Site [WSMR-54]	MEVATEC Corp.	OCT-2002
	Report of the Spring 2002 Groundwater Sampling Event at the HELSTF Diesel Spill Site [WSMR-55]	MEVATEC Corp.	OCT-2002
	1st Round Semiannual Groundwater Sampling Event CY02, Rhodes Canyon Landfills, WSMR-14 (SWMUs 114/115)	MEVATEC Corp.	OCT-2002
	Cyanide Contamination at the Former STP Percolation Ditches Groundwater Monitoring Report for September/October and December Sampling Events of Calendar Year 2001 (WSMR-62, SWMU 82 and 83)	MEVATEC Corp.	DEC-2002
2003			
	Final Long-Term Monitoring Report: October 2002 Event at the TTF MeCl Spill Site (WSMR-41, SWMU 108)	MEVATEC Corp.	FEB-2003
	Final 2002 Annual Report: Temperature Test Facility Disposal Surface Impoundment (WSMR-41, SWMU 108)	MEVATEC Corp.	FEB-2003
	Arsenic Background Evaluation Hazardous Waste Storage Facility Evaporation Tank [WSMR-37, SWMU 90]	MEVATEC Corp.	FEB-2003
	Final Groundwater Monitoring Report, June 2002 Sampling Event at the HELSTF Construction Landfill (WSMR-52; SWMU 38 and 39)	MEVATEC Corp.	FEB-2003
	Final Groundwater Monitoring Report, June 2002 Sampling Event at the HELSTF Chromium Spill Site	MEVATEC Corp.	FEB-2003

IRP Previous Studies

	Title	Author	Date
2003			
	(WSMR-54; SWMU 143)		
	Final Groundwater Monitoring Report, June 2002 Sampling Event at the HELSTF Diesel Spill Site (WSMR-55; SWMU 154)	MEVATEC Corp.	FEB-2003
	Revised Final Rhodes Canyon Landfill Corrective Measure Implementation Work Plan (WSMR-14; SWMUs 114 and 115)	BAE Systems	MAR-2003
	Final Groundwater Monitoring Report First Semi-Annual Event for 2002 Former STP Percolation Ditches (WSMR-62; SWMU 82 and 83)	BAE Systems	MAR-2003
	Revised Final Rhodes Canyon Landfill Corrective Measure Implementation Work Plan (WSMR-14; SWMUs 114 and 115)	BAE Systems	JUN-2003
	Final Long-Term Monitoring Report April 2003 Sampling Event and Monthly Inspections at the TTF MeCl Spill Site (WSMR-41; SWMU 108)	BAE Systems	JUL-2003
	Final Groundwater Monitoring Report January 2003 Sampling Event Rhodes Canyon Landfill WSMR-14; SWMU 114 and 115	BAE Systems	AUG-2003
	Final Groundwater Monitoring Report June 2002 Sampling Event Rhodes Canyon Landfill WSMR-14; SWMU 114 and 115	BAE Systems	AUG-2003
	Final Groundwater Monitoring Report February 2003 Sampling Event HELSTF Construction Landfill WSMR-52; SWMU 38 and 39	BAE Systems	AUG-2003
	Final Groundwater Monitoring Report January 2003 Sampling Event HELSTF Diesel Spill Site WSMR-55; SWMU 154	BAE Systems	AUG-2003
	Final Groundwater Monitoring Report January 2003 Sampling Event HELSTF Chromium Spill Site WSMR-54; SWMU 143	BAE Systems	SEP-2003
2004			
	Revised Final Corrective Measures Study Addendum Monitored Natural Attenuation Proposal Former Sewage Treatment Plant Percolation Ditches [WSMR-62] (SWMUs 82 and 83)	BAE Systems	JAN-2004
	Final Long-Term Monitoring Report October 2003 Sampling Event and Monthly Inspections TTF MeCl Spill Site (WSMR-41, SWMU 108)	BAE Systems	JAN-2004
	Final RCRA Facility Investigation Report Former Oscura Range Center Construction Landfill (WSMR-05; SWMU 159)	BAE Systems	JAN-2004
	Final Voluntary Corrective Measures Implementation Report North Oscura Peak Landfill (WSMR-71; SWMUs 47, 48, and 49)	BAE Systems	FEB-2004
	Final Groundwater Monitoring Report February-March, June and December 2003 Sampling Events Former STP Percolation Ditches (WSMR-62; SWMU 82 and 83)	BAE Systems	MAY-2004
	Final Work Plan Phase III RFI for Multiple Sites SWMU 8-17, 21, 22, 80, 140 & 156 (IRP Sites WSMR# 30-32, 57, 73, 79 and 84)	BAE Systems	JUL-2004
	June 2004 Sampling Event at the Former STP Percolation Ditches WSMR-62 (SWMUs 82-83)	BAE Systems	JUL-2004

IRP Previous Studies

	Title	Author	Date
2004			
	Long-Term Monitoring Report: April 2004 Sampling Event and Monthly Inspections (Dec 2003 ¿ May 2004) TTF Methylene Chloride Spill Site (WSMR-41, SWMU 108)	BAE Systems	JUL-2004
	Final HELSTF Groundwater Monitoring Report July 2003 Sampling Event [WSMR-52, WMSR-54 and WSMR-55	BAE Systems	AUG-2004
	Work Plan Clean Closure Demonstration at the TTF	BAE Systems	AUG-2004
	May 2004 Groundwater Monitoring Sampling Event at the HELSTF Sites: Construction Landfill (WSMR-52, SWMUs 38 & 39), Chromate Spill (WSMR-54, SWMU 143) and Systemic Diesel Spill (WSMR-55, SWMU 154)	BAE Systems	AUG-2004
	Final Remedial Action Decision Document Rhodes Canyon Landfill	BAE Systems	AUG-2004
	Letter Report - Well T-21 Groundwater Sampling [WSMR-40; SWMU 64	BAE Systems	AUG-2004
	Voluntary Corrective Measures Implementation Report Nuclear Effects Reactor Facility Waste Ponds #1 and #2	BAE Systems	SEP-2004
	Final Groundwater Monitoring Report Rhodes Canyon Landfill June 2003 and January 2004 Sampling Events	BAE Systems	SEP-2004
	Final Corrective Measures Implementation Report Rhodes Canyon Landfill (WSMR-14; SWMUs 114 and 115)	BAE Systems	SEP-2004
2005			
	Final Revised Work Plan Clean Closure Demonstration at the TTF (WSMR-41; SWMU 108)	White Sands Technical Services L.L.C.	FEB-2005
	Final Long-Term Monitoring Report November 2004 Sampling Event and Monthly Inspections (June-December 2004) TTF Methylene Chloride Spill Site (WSMR-41; SWMU 108)	White Sands Technical Services L.L.C.	FEB-2005
	Corrective Measures Study Addendum: Former STP Percolation Ditches Work Plan to Install Additional Monitor Wells (WSMR-62; SWMUs 82 and 83)	White Sands Technical Services L.L.C.	FEB-2005
	Final Phase III RFI Work Plan for Multiple Sites [SWMU 8-17, 21, 22, 80, 140 & 156 (IRP Sites WSMR# 30-33,36, 57, 60, 73, 74, 79 and 84)]	White Sands Technical Services L.L.C.	FEB-2005
	Final TTF Long-Term Monitoring Report for January-May 2005 SWMU 108 [WSMR-41]	White Sands Technical Services L.L.C.	JUN-2005
	Analytical Results of First [February/March] 2005 Groundwater Sampling Event for the Former STP Percolation Ditches (WSMR-62)	White Sands Technical Services L.L.C.	JUL-2005
	Combine Results of spring 2005 [March-May 2005] HELSTF Groundwater Sampling Event (WSMR-52, 54 and 55)	White Sands Technical Services L.L.C.	JUL-2005
	Phase III RFI Work Plan HELSTF Sites (WSMR-52, 54, 55 and 85)	White Sands Technical Services L.L.C.	AUG-2005
	Abbreviated Work Plan for the Abandonment of Well T-21 IRP Site WSMR-40, SWMU 64	White Sands Technical Services L.L.C.	OCT-2005
	Clean Closure Demonstration Report Methylene Chloride Spill Area Vapor Extraction at the TTF [WSMR-41, SWMU 108]	White Sands Technical Services L.L.C.	OCT-2005

IRP Previous Studies

	Title	Author	Date
2005			
	Considerations of Monitored Natural Attenuation [WSMR-62]	White Sands Technical Services L.L.C.	OCT-2005
	2004 Annual Sampling Event HELSTF Groundwater Monitoring Report [WSMR-52, 54 and 55]	White Sands Technical Services L.L.C.	NOV-2005
	Addendum Corrective Measures Implementation Report Rhodes Canyon Landfill [WSMR-14; SWMUs 114 and 115]	White Sands Technical Services L.L.C.	DEC-2005
2006			
	Final Long-Term Monitoring Report: 2005 Groundwater Monitoring Events & Monthly Inspections at the Methylene Chloride Spill Site (WSMR-41, SWMU 108)	White Sands Technical Services L.L.C.	FEB-2006
	Voluntary Corrective Measures Work Plan Oscura Range Center Landfill C (WSMR-05; SWMU 159)	White Sands Technical Services L.L.C.	FEB-2006
	Final Performance Monitoring Report, October 2004-September 2005, Rhodes Canyon Landfill (WSMR-14; SWMU 114/115)	White Sands Technical Services, LLC	FEB-2006
	Letter Report: Abandonment of Well T-21; IRP Site WSMR-40, SWMU 64	White Sands Technical Services, LLC	FEB-2006
	Logs of Monitoring Wells Associated with Former STP Percolation Ditches, Compiled April 2006	White Sands Technical Services, LLC	APR-2006
	Final 2005 Groundwater Monitoring Program Multiple Sites: SWMUs 38, 39, 41-46, 50-56a, 61, 65, 82-83, 108, 114-115, 143, 154-155 and 197-198 [CC and IRP Sites]	White Sands Technical Services, LLC	APR-2006
	Phase III RFI Report Main Post Multiple Sites SWMUs 8-17, 21, 22 80, 140 and 156 (IRP Sites WSMR-30-33, 36, 57, 60, 73, 74, 79 and 84)	White Sands Technical Services, LLC	MAY-2006
	Consideration of Aquifer Permeability in the Vicinity of the Former STP Percolation Ditches	White Sands Technical Services, LLC	MAY-2006
	Temperature Test Facility Long Term Monitoring Report for January - May 2006 (WSMR-41; SWMU 108)	White Sands Technical Services L.L.C.	JUN-2006
	Phase III RCRA Facility Investigation Work Plan, Former Main Post Landfill No. 3 (Scrap Yard) [WSMR-61; SWMU 65]	White Sands Technical Services L.L.C.	JUN-2006
	Addendum - Clean Closure Demonstration Report, Methylene Chloride Spill Area - Vapor Extraction at the Temperature Test Facility (WSMR-41; SWMU 108)	White Sands Technical Services L.L.C.	JUL-2006
	Revised Final Phase III RFI Work Plan HELSTF Sites [Multiple Sites]	White Sands Technical Services L.L.C.	OCT-2006
	Revised Addendum - Clean Closure Demonstration Report, Methylene Chloride Spill Area Vapor Extraction at the Temperature Test Facility (WSMR-41; SWMU 108)	White Sands Technical Services L.L.C.	DEC-2006
2007			
	2006 Long Term Monitoring Program Report	White Sands Technical Services L.L.C.	MAR-2007
	Phase III RCRA Facility Investigation Work Plan (Revised Final), Former Main Post Landfill No. 3 (Scrapyard), WSMR-61	White Sands Technical Services L.L.C.	APR-2007
	RCRA Monitoring Plan, Former STP Percolation Ditches, WSMR-62 (SWMU 82)	White Sands Technical Services L.L.C.	APR-2007
	Accelerated Corrective Action Completion Report: Oscura Range Center Landfill C WSMR-05 Landfill A (SWMU 157) and Landfill C (SWMU 159)	White Sands Technical Services L.L.C.	MAY-2007

IRP Previous Studies

	Title	Author	Date
2007			
	Letter Report, Analytical Results of First 2007 Groundwater Sampling Event for the Former Sewage Treatment Plant Percolation Ditches, WSMR-62 (SWMU 82)	White Sands Technical Services L.L.C.	MAY-2007
	Closure Report for the Oscura Range Center Landfill "B" (SWMU 158) (LDU-19), a.k.a. WMSR-05	White Sands Technical Services L.L.C.	JUN-2007
2008			
	Phase III RFI Report HELSTF Sites (Final)	White Sands Technical Services L.L.C.	FEB-2008
	RCRA Monitoring Plan, Former STP Percolation Ditches, WSMR-62 (Revised Final)	White Sands Technical Services L.L.C.	FEB-2008
	RCRA Aquifer Characterization Work Plan, Former STP Percolation Ditches, WSMR-62	White Sands Technical Services L.L.C.	FEB-2008
	RCRA Monitoring Plan, Former STP Percolation Ditches, WSMR-62 (Revised Final)	White Sands Technical Services L.L.C.	MAY-2008
	2007 Long Term Monitoring Program Report (Multiple Sites)	White Sands Technical Services L.L.C.	JUN-2008
2010			
	2008 Long Term Monitoring Program Report (Multiple Sites)	White Sands Technical Services L.L.C	MAR-2010
	RCRA Facility Investigation Work Plan SWMU 153 Former Vandal Burial Site (WSMR-58)	Shaw Environmental, Inc.	OCT-2010
	RCRA Facility Investigation Work Plan SWMU 125 Veterinary Clinic & SWMU 126 McAfee Clinic Incinerators (WSMR-77)	Shaw Environmental, Inc.	DEC-2010
	Subsurface Soil Investigation Work Plan SWMU 137 Paint Shop Sump (WSM-56)	Shaw Environmental, Inc.	DEC-2010
	RCRA Facility Investigation Work Plan SWMU 116 Subgrad Tanks at Rhodes Canyon (WSMR-75)	Shaw Environmental, Inc.	DEC-2010
2011			
	RCRA Facility Investigation Work Plan SWMU 119 & 120 Stallion Range Center Landfill (WSMR-70))	Shaw Environmental, Inc.	JAN-2011
	Petition to Perform Class III Modifications to Change the Status of SWMUs 19, 47, 48, 63, 64, 108, 157, 158, 159, 164, 167, 168 and 198 from Corrective Action Required to CAC or CAC with Controls	ARCADIS, U.S., Inc.	JAN-2011
	2009 Long Term Monitoring Program Report (Multiple Sites)	White Sands Technical Services, L.L.C.	APR-2011
	Revised Subsurface Soil Investigation Work Plan SWMU 137 Paint Shop Sump (WSMR-56)	Shaw Environmental, Inc.	JUN-2011
	Revised RCRA Facility Investigation Work Plan SWMU 153 Former Vandal Burial Site (WSMR-58)	Shaw Environmental, Inc.	SEP-2011
	Revised RCRA Facility Investigation Work Plan SWMU 125 Veterinary Clinic and SWMU 126 McAfee Clinic Incinerators (WSMR-77)	Shaw Environmental, Inc	OCT-2011
	Revised RCRA Facility Investigation Work Plan SWMU 119 & 120 Stallion Range Center Landfill (WSMR-70)	Shaw Environmental, Inc.	OCT-2011
	2010 Long Term Monitoring Program Report (Multiple Sites)	Shaw Environmental, Inc.	OCT-2011
	Revised Soil Background Study Work Plan (SWMUs 12, 14, 16, 17, 21, 22, 80, 140)	Shaw Environmental, Inc.	OCT-2011
	Revised Accelerated Corrective Action Work Plan, SWMU 89 former Acid Neutralization Unit at the Hazardous Waste Storage Facility (WSMR-27)	Shaw Environmental, Inc.	OCT-2011

IRP Previous Studies

	Title	Author	Date
2012			
	Subsurface Soil Investigation Report SWMU 137 Paint Shop Sump (WSMR-56)	Shaw Environmental, Inc.	APR-2012
	RCRA Facility Investigation Work Plan SWMUs 86 & 87 Main Post Sanitary Landfill and Construction Landfill (WSMR-81 & 82)	Shaw Environmental	JUN-2012
	Soil Background Study Report (SWMUs 12, 14, 16, 17, 21, 22, 80, 140)	Shaw Environmental, Inc.	AUG-2012
	2011 Long Term Monitoring Program Report (Multiple Sites)	Shaw Environmental, Inc.	SEP-2012
	RCRA Facility Investigation Report SWMU 153 Former Vandal Burial Site (WSMR-58)	Shaw Environmental, Inc	DEC-2012
	Accelerated Corrective Action Completion Report, SWMU 89, Former Acid Neutralization Unit at Hazardous Waste Storage Facility (WSMR-27)	Shaw Environmental, Inc.	DEC-2012
2013			
	RCRA Facility Investigation Report SWMU 125, Former Veterinary Clinic and SWMU 126 Former McAfee Clinic Incinerators (WSMR-77)	Shaw Environmental, Inc.	JAN-2013
	RCRA Facility Investigation Report SWMU 119 & 120 Stallion Range Center Landfill (WSMR-70))	Shaw Environmental, Inc.	JAN-2013
	Corrective Action Complete Petition Proposal (SWMUs 107, 121 through 123, 156, 167)	Shaw Environmental, Inc.	JAN-2013
	RCRA Facility Investigation Report for the Stallion Range Center Landfills (SWMUs 119 &120)	Shaw Environmental, Inc.	JAN-2013
	RCRA Facility Investigation Report SWMU 116 Subgrad Tanks at Rhodes Canyon (WSMR-75)	Shaw Environmental, Inc.	FEB-2013
	2012 Long Term Monitoring Program Report (Multiple Sites)	Shaw Environmental (A CB&I Company)	JUL-2013
2014			
	Final RCRA Facility Investigation Report, SWMU 137, Paint Shop Sump (WSMR-56)	Shaw Environmental (A CB&I Company)	APR-2014
	Revised RCRA Facility Investigation Report, SWMU 153, Former Vandal Burial Site	Shaw Environmental (A CB&I Company)	MAY-2014
	Revised RCRA Facility Investigation Report, SWMUs 86 & 87, Main Post Sanitary Landfill and Construction Landfill (WSMR-81 & 82)	RCRA Facility Investigation Work Plan SWMUs 86 & 87 Main Post Sanitary Landfill and Construction Landfill (WSMR-81 & 82)	MAY-2014

WHITE SANDS MISSILE RANGE

Installation Restoration Program

Site Descriptions

Site ID: WSMR-05
Site Name: FORMER OSCURA RANGE CENTERLANDFILLS
Alias: SW157,159

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Soil

Phases	Start	End
RFA	199708	199709
RFI/CMS	199710	201609
IRA	200510	200809

RIP Date: N/A

RC Date: 201609

SITE DESCRIPTION

WSMR-05 consists of three separate landfill areas located near the Oscura Range Center (ORC) in the northeastern portion of the range. Data from the third landfill was used for relative risk site evaluation (RRSE).

Landfill A (SWMU 157) is located south of the communications building within the ORC cantonment area. Waste including insulated wire, wood, scrap metal, tires, paper, and miscellaneous office materials were deposited into an excavated trench measuring 16 feet (ft) by 6.5 ft by 5 ft. Adjacent former waste disposal sites included a scaffold used for POL from vehicles, scattered small piles of construction and demolition debris, and several smaller and shallower trenches used to bury insulated wire. In June 1998, all wastes described above were excavated and transported to the Lincoln/Otero Regional Landfill.

Landfill B (SWMU 158) is located 0.5 miles south of ORC. Refuse was dumped on the ground surface at this site until the early-1980s. Waste was similar in volume and type to Landfill A. In June 1998, all wastes were excavated and transported to the Lincoln/Otero Regional Landfill.

Landfill C (SWMU 159) is situated approximately two miles north of ORC. Approximately three acres is bladed with little waste visible on the surface. A geophysical survey defined buried metal approximately 8-10 ft below grade in an area 200 ft by 30 ft. Non-compacted clean soil covers the site. An investigation of Landfill C was conducted during FY02 to determine if buried material from the landfill has contaminated soil beneath the site. Soil contamination was not detected. The WSMR submitted an RFI report to the NMED in FY04 that recommended the site be excavated. Excavation was completed during 2006. The WSMR will submit a report on the excavation and await the NMED review. Since all buried material was removed, future LTM will not be required and a CAC petition for SWMUs 157-159 was anticipated following approval of remedial activities.

SWMU 157 and 159 received an NFA recommendation by the NMED in an Oct. 24, 2007 letter. The NMED approved the closure of SWMU 158 in a letter dated April 15, 2008.

A CAC petition is being submitted under the current PBA contract. This site was included in the PBA ordered on Sept. 25, 2008 to achieve approval of a CAC petition.

A CAC petition was submitted in January 2011 and NMED determined the document to be administratively incomplete in October 2011. A revised CAC petition was submitted in July 2013. The revised CAC is currently under NMED review.

The CAC petition with out controls is currently captured under the current RFI/correction measure study (CMS) phase.

CLEANUP/EXIT STRATEGY

WSMR will complete the CAC petition efforts as required by the NMED.

Site ID: WSMR-14
Site Name: FORMER RHODES CANYON LANDFILLS
Alias: SMW114-115

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater

Phases	Start	End
RFA	198805	198808
RFI/CMS	199103	200310
CMI(C)	200310	200409
LTM	200601	203109

RIP Date: N/A

RC Date: 200409

SITE DESCRIPTION

WSMR-14 consists of two inactive landfills located approximately 0.25 miles northwest of Rhodes Canyon Range Center, 65 miles north of the WSMR main post at the intersection of Range Road 6 and Range Road 7.

The start-up date for the oldest landfill (SWMU 115) is unknown, but it was closed in 1976, prior to the implementation of RCRA. Results from a geophysical survey conducted during the Phase I RFI indicate that SWMU 115 is irregularly shaped; the southern section is approximately 400 ft across, while the northern section is approximately 380 ft long and 120 ft wide.

SWMU 114 is the most recently active area, reportedly receiving waste until approximately 1987. SWMU 114 is located east of SWMU 115 and is approximately 360 ft by 480 ft. An 8 ft chain link perimeter fence surrounded the landfill until implementation of corrective measures in 2004. The exact dates of landfill operation could not be determined. SWMU 114 was reported by the RFA to have received office refuse and construction debris from the Rhodes Canyon Range Center. The RFA reported that SWMU 115 received sanitary waste from Rhodes Canyon and inert missile debris from up-range impact areas. The RFA concluded that there was a low to moderate potential for release to soil and groundwater from SWMU 115, based on the lack of documentation on the types of waste managed. The RFA suggested an RFI be conducted to confirm no hazardous constituents were disposed. NFA was suggested at SWMU 114 because it was considered active at the time the RFA was conducted. The RFI concluded that no release is suspected to have occurred from SWMU 115 and recommended that the RFI be discontinued.

Groundwater samples were collected semiannually from 1996 through 2003. Annual sampling commenced in 2004 according to an approved corrective measures implementation (CMI) work plan discussed later. Samples were taken from one upgradient well and three downgradient wells.

The original landfill soil cover was deficient and there were no surface water control measures in place to prevent storm water run-on onto and off the site. On Jan. 15, 2002 a CMI work plan was submitted to the NMED. The CMI proposed that a landfill soil cover and storm water control structures be designed and constructed to minimize the potential for groundwater contamination from the site. The NMED approved the CMI work plan in October 2003. The CMI work plan was implemented beginning in FY04. Soil cover construction completion occurred in August 2004 along with revegetation efforts, fence construction, signage and drainage controls. The installation of two replacement monitoring wells was completed in 2005. A decision document (DD) was completed in August 2004 and signed in October 2004.

In 2005 two additional downgradient wells were installed, and LTM activities were initiated, including annual groundwater monitoring and soil cover/fence maintenance. In a January 2006 NMED letter, the NMED requested closure certification and survey plat in accordance with 40 CFR 264. WSMR received final closure verification in a July 12, 2006 NMED letter.

The site will maintain LTM status with periodic reviews. The first periodic review was conducted in FY09. The second periodic review was completed in June 2104.

Site ID: WSMR-14
Site Name: FORMER RHODES CANYON LANDFILLS
Alias: SMW114-115

CLEANUP/EXIT STRATEGY

Groundwater monitoring, semiannual landfill cap inspections and five year remedy reviews will continue and will be reevaluated periodically as prescribed by the post-closure care guidance.

Site ID: WSMR-27
Site Name: FORMER ACID NEUT UNIT @ HWSF LDING
Alias: SWMU 89

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Other (Solvents), Polychlorinated Biphenyls (PCB)

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199205	201709
IRA	199205	201407

RIP Date: N/A

RC Date: 201709

SITE DESCRIPTION

WSMR-27 was formerly an open-topped, concrete evaporation tank located adjacent to the Hazardous Waste Storage Facility (HWSF), which is located eight miles east of the main post area. Facility personnel estimated the date of construction between 1973 and 1978. Prior to 1981, the tank was used to evaporate liquid chemical wastes generated at the installation's photographic laboratories. When not being used for evaporation, the unit was occasionally used as a storage pad for damaged transformers containing PCBs.

In 1981, PCB transformers were being stored in the tank when a batch of corrosive photographic waste was added to the unit. As a result, PCBs leaked from the transformers and mixed with the corrosive photographic waste. Soil sampling around the unit indicated PCB contamination. The sludge and soils were removed, drummed, and buried in the hazardous waste landfill. The remediation and cleanup was performed in 1981 by WSMR with USEPA Region VI and the NMED oversight. The unit was converted to a loading dock in 1981 by installing a reinforced concrete cap/seal over the structure.

The Phase II RFI recommended that no further investigation is necessary; however, the NMED issued a NOD for additional soil and groundwater investigation.

WSMR-27 is listed in Appendix 8 of the approved WSMR RCRA Part B permit requiring a closure plan submittal.

A PBA contract was issued in June 2010, to achieve CAC without controls by closing the unit in accordance with the RCRA permit and achieving RC.

In February 2011 an ACA work plan was submitted to NMED. The NMED responded with a NOD for the work plan in August 2011. WSMR submitted a revised ACA work plan to NMED in November 2011 and was approved by NMED in May 2012. Following approval of the revised ACA work plan interim removal actions commenced at the site. Site activities included removal of the loading dock and concrete tank. Soil excavation activities also took place at the site following removal of the structures. An ACA investigation report was submitted to NMED in December 2012. NMED disapproved the ACA report requiring the submittal of a closure plan. A closure plan addressing the disapproval comments was submitted in June 2014. NMED responded with a disapproval requiring additional investigation work and a revised closure plan.

The objective at WSMR-27 is to complete closure plan activities and achieve clean closure. Anticipated post closure activities include additional investigations to include plugging and abandoning of the current groundwater monitoring wells.

CLEANUP/EXIT STRATEGY

The installation will seek NMED approval of the closure plan to achieve clean closure of the site. The ACA report will be approved upon NMED approval and implementation of the closure plan.

Site ID: WSMR-29
Site Name: STP DRYING BEDS (MAIN POST)
Alias: SWMU-79

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Metals

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199205	201901
IRA	199507	199508

RIP Date: N/A

RC Date: 201901

SITE DESCRIPTION

WSMR-29 (SWMU 79) is a series of 11 parallel beds used for the drying of the sewage treatment plant (STP) sludge. The beds are separated by 2-ft high concrete walls and have sand bottoms. The unit is bounded on the north by a concrete distribution trough for the entire length of the beds. Each bed is estimated to be 15 to 20 ft. wide and 50 ft long. The southern end of each bed is designed with an elevated concrete drive for unloading of the sludge from trucks. Sludge is deposited in the beds approximately once a month, and the dried sludge is cleaned out once a year. Facility representatives estimated that 3 to 4 cubic yards (cy) of sludge cake is removed from each cell each year. The cake was disposed of at the Sanitary Landfill (SWMU 86). The unit was originally constructed in 1958. The unit was reconstructed after a flood washed the unit out in 1978. The unit receives sludge from the two primary clarifiers (SWMUs 68-69). The debris was removed and stored in the nearby waste pile (SWMU 80).

An RFA was conducted in 1988 that suggested a high release potential to soil and groundwater based on the probability of heavy metal constituents leaching into the soils. The potential for past release to surface water was high based on flood waters infiltrating the unit in 1978. The potential for ongoing release to surface water was low based on the 2-ft high containment walls and the absence of nearby perennial surface water. The RFA also said the potential for release to air is low based on the likely low concentration of volatile waste constituents. The RFA also suggested that there was no potential for subsurface gas generation based on the application of the wastes directly on the ground for evaporation.

At the conclusion of the Phase I RFI, USEPA Region 6 approved a Class III permit modification dated Dec. 31, 1995 for NFA at the site.

In 1994, an interim removal action (IRA) was performed at the site. Excavation of the sludge material from the beds and sludge piles to a depth of 2 ft. below ground surface (bgs) was completed. There were no samples collected from the sludge bed floors following excavation.

This SWMU was included in the WSMR's 2009 hazardous waste permit requiring corrective action.

WSMR's objective to conduct an RFI followed by a CAC petition. Because there were no samples taken following removal of the beds, confirmation sampling may be required as part of the RFI.

The RFI and CAC will be captured under the RFI/CMS phase.

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting an RFI per the permit corrective action requirements.

Site ID: WSMR-30
Site Name: STP SLUDGE WASTE PILE (MAIN POST)
Alias: SWMU-80

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Metals, Other (Cyanide)

Media of Concern: Other (Sludge), Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199205	201707
IRA	199507	199508

RIP Date: N/A

RC Date: 201707

SITE DESCRIPTION

WSMR-30 was the site of a waste pile consisting of soil/sludge/rubble that was created following a flash flood in 1978 that destroyed the sludge beds (SWMU 79). Sludge, excavated soils and sludge bed debris (e.g., reinforced concrete) were washed from the original sludge bed location and relocated approximately 100 ft to the southeast of the STP sludge beds active as of 2002. The pile was approximately 50 ft to 75 ft long with heights varying from 2 ft to 6 ft.

Between November 1994 and March 1995, sludge from the drying beds and the waste piles 2 ft bgs was excavated and containerized. Samples of the sludge were collected, analyzed and found to be within regulatory limits for disposal in the WSMR landfill (Dow, 1996).

A Class III permit modification petition for NFA was submitted on Jan. 24, 2000 for this and many other sites. A public meeting was held on Feb. 23, 2000 to solicit public comment concerning the Class III permit modification as part of the final RCRA Expanded Public Participation Rule (40 CFR 270.2). The public did not provide comments on this site.

The state disapproved the petition in March 2002. The state requested additional investigation including background metals study, confirmatory sampling (CS), and an ecological risk assessment. This investigation recommenced in FY03 and the background study was completed. The WSMR submitted a Phase III RFI work plan dated June 2004. The work plan covered WSMR-30 plus 10 additional IRP sites which were also disapproved in the March 2002 letter. The sites were all funded under WSMR-30 beginning in FY05. This work is referred to as the main post Phase III RFI since all sites are within the main post cantonment area.

The NMED submitted a NOD in November 2004 including a total of 10 comments requiring WSMR response. A WSMR response addressed these comments and the work plan was executed in FY05. The final RFI report was submitted and reviewed by the NMED. The NMED submitted a NOD in December 2006 with six comments. Additionally, the NMED expressed reservations with conclusions of a soil background study conducted under the Compliance-related Cleanup (CC) program. This study was used in supporting conclusions and recommendations included in the Phase III RFI final report. Discussions between WSMR and NMED are ongoing. The WSMR is preparing a response to the NMED December 2006 comments; furthermore, in a Jan. 24, 2007 letter, the NMED stated that several sites covered under the Phase III RFI could be eligible or "NFA with controls" in place.

WSMR-30 is listed in the 2009 RCRA Part B permit requiring corrective action.

WSMR-30 is included in the WSMR PBA contract to achieve CAC. A background study was completed and approved by the NMED in June 2013. Based on the findings of the background study, the site was petitioned for CAC with controls to NMED in June 2013. NMED disapproved the CAC petition requiring additional sampling. At this time, WSMR feels additional investigation for this site is not warranted and will discuss options with the NMED.

CLEANUP/EXIT STRATEGY

Site ID: WSMR-30
Site Name: STP SLUDGE WASTE PILE (MAIN POST)
Alias: SWMU-80

WSMR may be required to conduct additional sampling. It is anticipated that discussions will be held with the NMED regarding additional investigations to complete the CAC petition requirements.

Site ID: WSMR-31
Site Name: MAIN POST FORMER FFTA & PIT
Alias: SWMU-21

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Other (TPH)

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199607	201707
IRA	199607	199608

RIP Date: N/A

RC Date: 201707

SITE DESCRIPTION

WSMR-31, the former firefighting training area located at the southern end of the main post, was used in the early-1960s and deactivated in 1982. During operation, waste POLs were used to simulate fire emergencies. The unit was excavated to a maximum depth of 8 ft in search of oil-contaminated soils. The unit contained two aboveground storage tanks (ASTs) and one partially buried tank. The two ASTs reportedly held waste jet and diesel fuel, while the partially buried tank was used as a holding tank for water.

Based on analytical results of soil samples from the Phase II RFI, the extent of contamination was limited horizontally to the area about the ASTs and vertically to the upper 1 ft of soil.

The two ASTs and one UST were removed. A 50-ft by 50-ft area was scraped to a depth of 1 ft bgs. The excavated soil was containerized for characterization sampling. In addition, six samples were collected 6 inches beneath the excavation floor. Results of the sampling characterized the roll-off containers' content and the excavation floor as nonhazardous except for one roll-off. The remaining containers' contents were used as backfill at the excavation. The closeout report recommended that WSMR apply for closure.

A Class III permit modification petition for NFA was submitted on Jan. 24, 2000 for this and several other sites. A public meeting was held on Feb. 23, 2000 to solicit public comment concerning the Class III permit modification as part of the final RCRA Expanded Public Participation Rule (40 CFR 270.2). The public did not provide comments on this site.

The state disapproved the petition in March 2002 and requested additional investigation including background metals study, CS, and an ecological risk assessment. This investigation recommenced in FY03 and is slated to be completed by FY06. The WSMR submitted a Phase III RFI work plan (BAE, 2004c) dated June 2004. The work plan covered WSMR-30 plus 10 additional IRP sites which were also disapproved in the March 2002 letter. The sites were all funded under WSMR-30 beginning in FY05. This work is referred to as the Main Post Phase III RFI since all sites are within the main post cantonment area.

The NMED submitted a NOD (dated Nov. 15, 2004) including a total of 10 comments requiring a WSMR response. The WSMR's response addressed these comments and the work plan was executed in FY05. The final RFI report was submitted and reviewed by the NMED. The NMED submitted a NOD (dated Dec. 8, 2006) with six comments. Additionally, the NMED expressed reservations with conclusions of a soil background study conducted under the CC program. This study was used in supporting conclusions and recommendations included in the Phase III RFI final report. Discussions between the WSMR and the NMED are ongoing. The WSMR prepared a response to the NMED December 2006 comments; furthermore, in a Jan. 24, 2007 letter, the NMED stated that several sites covered under the Phase III RFI could be eligible for "NFA with controls" in place.

WSMR-31 is listed in the 2009 WSMR RCRA Part B permit requiring corrective action.

WSMR-31 is included in the WSMR PBA contract to achieve CAC. A background study was completed under the PBA contract. Based on the findings of the background study, the site was petitioned for CAC without controls to NMED in June 2013. The CAC petition is currently under NMED review.

Site ID: WSMR-31
Site Name: MAIN POST FORMER FFTA & PIT
Alias: SWMU-21

CLEANUP/EXIT STRATEGY

WSMR will complete the CAC petition requirements. The NMED review is expected to be completed in FY15.

Site ID: WSMR-32
Site Name: MAIN POST FORMER FFTA WASTE PILE
Alias: SWMU-22

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Other (TPH)

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199609	201707
IRA	199607	200512

RIP Date: N/A

RC Date: 201707

SITE DESCRIPTION

WSMR-32 was the abandoned soil piles from the old former fire training area (FFTA). The unit was approximately 25 ft by 50 ft. A 50-ft by 50-ft area was scraped to a depth of 1 ft bgs. The excavated soil was containerized in six roll-off containers for characterization sampling and six samples were collected six in beneath the excavation floor. Results of the sampling characterized the roll-off containers and the excavation floor as nonhazardous; however, the total petroleum hydrocarbons (TPH) level from roll-off container No.3 was 220 parts per million (ppm) and was disposed at the WSMR landfill. The remaining containers were used as backfill at the excavation. The area was leveled to match the existing terrain and hydro-seeded on April 23, 1996 with an approved seed mixture. The closeout report documents the removal of SWMU 22 debris and the disposal of the nonhazardous material. The report recommended WSMR apply for closure of the site.

A Class III permit modification petition for NFA was submitted on Jan. 24, 2000 for this and several other sites. A public meeting was held on Feb. 23, 2000 to solicit public comment concerning the Class III permit modification as part of the final RCRA Expanded Public Participation Rule (40 CFR 270.2). The public did not provide comments on this site.

The state disapproved the petition in March 2002 and requested additional investigation including a background metals study, CS, and an ecological risk assessment. This investigation recommenced in FY03 and is slated to be completed by FY06. WSMR submitted a Phase III RFI work plan dated June 2004. The work plan covered WSMR-30 plus 10 additional IRP sites which were also disapproved in the March 2002 letter. The sites were all funded under WSMR-30 beginning in FY05. This work is referred to as the main post Phase III RFI since all sites are within the main post cantonment area.

The NMED submitted a NOD (dated Nov. 15, 2004) including a total of 10 comments requiring a WSMR response. WSMRs response addressed these comments and the work plan was executed in FY05. The final RFI report was submitted and reviewed by the NMED. The NMED submitted a NOD (dated Dec. 8, 2006) with six comments. In 2005 5 cys of soil was removed for arsenic detected a 12.2 milligrams per kilogram (mg/kg). Additionally, the NMED expressed reservations with conclusions of a soil background study conducted under the CC program. This study was used in supporting conclusions and recommendations included in the Phase III RFI final report. Discussions between the WSMR and the NMED are ongoing. The WSMR is preparing a response to the NMED December 2006 comments; furthermore, in a Jan. 24, 2007 letter, the NMED stated that several sites covered under the Phase III RFI could be eligible for "NFA with controls" in place.

WSMR-32 is listed the 2009 WSMR RCRA Part B permit requiring corrective action.

WSMR-32 is included in the WSMR PBA contract to achieve CAC. A background study was completed and approved by the NMED in June 2013. Based on the findings of the background study, the site was petitioned for CAC with controls to NMED in June 2013. NMED disapproved the CAC petition requiring additional information regarding arsenic levels. WSMR anticipates submitting a revised petition with the required information.

Site ID: WSMR-32
Site Name: MAIN POST FORMER FFTA WASTE PILE
Alias: SWMU-22

CLEANUP/EXIT STRATEGY

WSMR will complete the CAC petition requirements by submitting additional information per the NMED disapproval notice.

Site ID: WSMR-33
Site Name: USED BATTERY ACCUM AREAS (MAIN POST)
Alias: SWMU 14-15

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199407	201707
IRA	199701	199709

RIP Date: N/A

RC Date: 201707

SITE DESCRIPTION

WSMR-33 consisted of two used battery accumulation areas located immediately south (SWMU 14) and approximately 50 ft north (SWMU 15) of the battery shop in the main post maintenance area. This open-air facility paved with asphalt was used for the accumulation and storage of batteries. A sump discharges to the Main Post STP. An asphalt lined drainage ditch is also located east of Building 1776. Batteries are no longer stored here and the dates of former battery operations are unknown.

The Phase I and Phase II RFI reports both stated that there is no threat of a future release from these areas because they are no longer in use. It was recommended that the RFI be discontinued and a Class III permit modification NFA petition be submitted.

All contents of the sump were removed, sampled, and characterized. The concrete apron was demolished and removed. A new concrete apron was constructed following a confirmation soil sample. Surface soil covering the drainage ditch was removed and sampled and characterized as nonhazardous. Asphalt was excavated to a depth of 18 inches, containerized and sampled. Confirmation soil samples were collected from the drainage ditch and characterized as nonhazardous. The drainage ditch area was contoured, compacted and re-paved to match the original drainage ditch.

A Class III permit modification petition for NFA was submitted on Jan. 24, 2000 for this and several other sites. A public meeting was held on Feb. 23, 2000 to solicit public comment concerning the Class III permit modification as part of the final RCRA Expanded Public Participation Rule (40 CFR 270.2). The public did not provide comments on this site.

The state disapproved the petition in March 2002 and requested additional investigation including a background metals study, CS, and an ecological risk assessment. This investigation recommenced in FY03 and is slated to be completed by FY06. The WSMR submitted a Phase III RFI Work Plan (BAE, 2004c) dated June 2004. The work plan covered WSMR-30 and 10 additional IRP sites which were also disapproved in the March 2002 letter. The sites were all funded under WSMR-30 beginning in FY05. This work is referred to as the Main Post Phase III RFI since all sites are within the main post cantonment area.

The NMED submitted a NOD (dated Nov. 15, 2004) including a total of 10 comments requiring a WSMR response. The WSMR's response addressed these comments and the work plan was executed in FY05. The final RFI report was submitted and reviewed by the NMED. The NMED submitted a NOD(dated Dec. 8, 2006) with six comments. Additionally, the NMED expressed reservations with conclusions of a soil background study conducted under the CC program. This study was used in supporting conclusions and recommendations included in the Phase III RFI final report. Discussions between the WSMR and the NMED are ongoing. The WSMR is preparing a response to the NMED's December 2006 comments received; furthermore, in a Jan. 24, 2007 letter, the NMED stated that several sites covered under the Phase III RFI could be eligible for "NFA with controls" in place.

WSMR-33 is listed in the 2009 WSMR RCRA Part B permit requiring corrective action.

WSMR-33 is included in the WSMR PBA contract to achieve CAC. A background study was completed under the PBA contract. Based on the findings of the background study, the site was petitioned for CAC with controls to NMED in June 2013. NMED disapproved the CAC petition requiring additional historical information regarding the use of the area. Additional sampling may also be required. At this time, WSMR feels additional investigation for this site is not warranted and will discuss options with the NMED.

Site ID: WSMR-33
Site Name: USED BATTERY ACCUM AREAS (MAIN POST)
Alias: SWMU 14-15

CLEANUP/EXIT STRATEGY

WSMR will complete the CAC petition requirements by submitting additional information per the NMED disapproval notice.

Site ID: WSMR-35
Site Name: Storage Tank at Temp Test Facility
Alias: SWMU 107

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Other (MeCl)

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199404	201707

RIP Date: N/A

RC Date: 201707

SITE DESCRIPTION

WSMR-35 was a 95,000-liter (L) (25,000-gallon) cylindrical closed steel tank located at the Temperature Test Facility (TTF) approximately 4 km (2.5 miles) east of the main post area. It was installed as an interim measure for process water overflow containment until a new stainless steel evaporation tank (SWMU 105) was constructed. It is not clear if the evaporation tank actually did receive any waste but it was taken off line in 1987 when construction of the stainless steel evaporation tank (SWMU 105) was completed. The 95,000-L (25,000-gallon) tank was cleaned and removed in 1990 and the site is now RC.

A Class III permit modification petition will be submitted to the NMED to remove this site from the HSWA corrective action module of the RCRA Part B permit.

WSMR-35 is listed in the 2009 WSMR RCRA Part B permit requiring corrective action.

WSMR-35 is included in the WSMR PBA contract to achieve a CAC petition for the site. The site was petitioned for CAC without controls on July 26, 2012. NMED determined the petition to be administratively incomplete and required WSMR to submit a revised CAC. WSMR submitted a revised CAC without controls on January 25,2013. The revised CAC without controls is currently under NMED review.

The CAC to achieve RC at the site is captured under the current RFI/CMS phase.

CLEANUP/EXIT STRATEGY

WSMR will complete the CAC petition requirements. The NMED review is expected to be completed in FY15.

Site ID: WSMR-39
Site Name: FORMER MAIN POST LANDFILL 1A
Alias: SWMU-63

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198805	198808
RFI/CMS	199602	201709

RIP Date: N/A

RC Date: 201709

SITE DESCRIPTION

WSMR-39 (SWMU 63) is the suspected former Landfill No. 1, supposedly located in the southeast area of the main post. Previous studies indicated that the landfill was located in the immediate area of Building 1678. No historical information was available on the design, construction, and operating procedures used at this unit.

In 1988, an investigation of SWMU 63 under the WSMR RFA concluded that the potential for releases to soil and groundwater was unknown based on the age of the landfill and the lack of information regarding the types of waste received and the past management practices. A 1992 Phase I RFI also found no evidence of contamination.

In 1994, four monitoring wells were installed and sampled around the suspected landfill as part of the Phase II RFI. Analyses indicated no constituents exceeding their respective action levels; however, this report speculated that the actual site of SWMU 63 may have been southeast of Building 1678 and recommended that further studies be performed to identify its actual location.

A review of aerial photographs from 1956 and field inspections indicated that the site was most likely located approximately 330 ft south of Building 1678. To avoid confusion with the previously misidentified site, the new alleged landfill location was referred to as Landfill 1A.

An additional RFI was conducted and consisted of an archeological study, geophysical survey, and soil borings. Boring activities were conducted in 1999 at sites identified as possible trench locations containing buried waste. Through visual classification of soil samples, no buried waste was detected. From this study, it was concluded that no landfill exists and that NFA is required at this site.

In an Aug. 2, 2004 letter, the NMED agreed with WSMR's assertion that Landfill 1A does not exist and recommended that an NFA petition be submitted. A Class III permit modification was submitted under the current PBA contract.

A CAC petition was submitted in January 2011 and NMED determined the document to be administratively incomplete in October 2011. A revised CAC petition was submitted in July 2013. The revised CAC is currently under NMED review.

The CAC without controls petition is currently captured under the current RFI/CMS phase.

CLEANUP/EXIT STRATEGY

WSMR will complete the CAC petition requirements. The NMED review is expected to be completed in FY15.

Site ID: WSMR-40
Site Name: FORMER MAIN POST LANDFILL 2A
Alias: SWMU-64

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198805	198808
RFI/CMS	199405	201709

RIP Date: N/A

RC Date: 201709

SITE DESCRIPTION

WSMR-40 is the suspected former Landfill No. 2 (SWMU 64) supposedly located in the southeast area of the main post presumably located near Building 1774 and operated from 1948-1965. No historical information was available on the design, construction, and operating procedures used at this unit.

In 1988, SWMU 64 was investigated as part of the WSMR RFA and concluded that the potential for releases to soil and groundwater was unknown. The Phase I RFI found no evidence of a contamination source or release.

Five monitoring wells were installed and sampled as part of the Phase II RFI. Analyses indicated no constituents exceeded their respective action levels; however, this report speculated that the actual site may have been southeast of Building 1747.

A review of aerial photographs and field inspections indicated that the site was possibly located approximately 660 ft to the south of Building 1774. The new alleged landfill location was referred to as Landfill No. 2A.

An additional RFI was conducted. A smaller potential waste disposal area was found northeast of the main landfill area. The archeological study was extended to cover the newly identified area.

A geophysical study and boring activities were conducted in conjunction with WSMR-39. No evidence of refuse was discovered during the soil borings. From this study it was determined that no landfill exists and that NFA is required at this site.

NMED concurred that the Former Main Post Landfill 2A does not exist, and requires no further investigations in a July 2003 letter (Attachment 1). However, the state did request additional investigation of monitoring well T-21 where chromium and lead were detected above Water Quality Control Commission (WQCC) standards. After further investigation at T-21, it was determined on Dec. 1, 2004 that neither lead nor chromium was detected in groundwater samples collected in August 2005. In the December 2004 letter NMED determined that WSMR had completed the required investigations pertaining to Landfill 2A.

In September 2008 a PBA was awarded to achieve approval of a CAC petition. The petition was submitted to NMED in March 2010 and revised CAC petition was submitted in January 2011 adding two additional sites to the petition. NMED determined the petition to be administratively incomplete in October 2011 requiring WSMR to provide additional information for SWMU 64. The revised CAC petition was submitted to NMED on July 3, 2013. NMED issued an administratively complete determination of the CAC petition on Feb 3, 2014 stating that they will now initiate a technical review of the submittal.

The objective at WSMR-39 is to complete the required CAC efforts.

CLEANUP/EXIT STRATEGY

WSMR will complete the CAC petition requirements. NMED review is expected to be completed in FY15.

Site ID: WSMR-41
Site Name: VE Well at TTF
Alias: SWMU-108

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Other (MeCl), Volatiles (VOC)

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199405	201709
IRA	198806	199505

RIP Date: N/A

RC Date: 201709

SITE DESCRIPTION

WSMR-41 (SWMU 108) was an SVE system installed in 1995 to remediate methylene chloride and other constituents in soils associated with a release at the TTF, located approximately two miles east of the main post. The constituents in the soil were the result of releases of approximately 8,000 gallons of coolant from a lined wastewater pond (SWMU 104) approximately 5,000 gallons, from faulty valves associated with an underground tank located between SWMU 104 and the TTF building and approximately 4,500 gallons spilled on the ground during building construction. SWMU 108 consisting of 19 soil vapor extraction (SVE) wells was installed in 1998. SWMU 108 was designed and constructed based on the finding of the investigations conducted for SWMU 104. Operation of the SVE system continued until October 2002, when the system shut down due to maintenance issues. At this time permanent system shutdown was recommended, as no constituents had been detected in soil vapor extracted from the system since October 2000. Dismantling of the SVE system was initiated in January 2003 and completed in August 2004. Vapor and groundwater wells associated with the system were plugged and abandoned in November and December 2007.

No unit-specific environmental investigation were conducted for SWMU 108, and all of the investigation and closure work conducted for SWMU 104 has already been reviewed and approved by NMED.

Field activities for the TTF clean closure demonstration were conducted during May and June 2005. These activities were conducted to accomplish clean closure for SWMU 104. Successful closure of SWMU 104 would then lead to successful closure of SWMU 108. NMED approved the clean closure certification for SWMU 104 in a letter dated July 11, 2007. SWMU 108 was the SVE system used to remediate SWMU 104 impacts and to achieve the clean closure. The clean closure of SWMU104 included the dismantling of SWMU 108, pursuant to an NMED approved closure plan. The closure activities at SWMU 104 were certified complete by WSMR and approved by the NMED and well abandonment (34 wells) was completed in late 2007. The closure activities conducted met the requirements for a release assessment, which was required for SWMU 108 in Table 8-2 of the RCRA permit.

In September 2008 a PBA was awarded to achieve approval of a CAC petition.

A CAC petition was submitted to NMED in March 2010 and a revised CAC petition was submitted in January 2011 adding two additional sites to the petition. The NMED determined the petition to be adminministravely incomplete in October 2011 requiring removing SWMU 108 from the petition because release assessment for this SMWU and submittal of additional information for SWMU 108 is required in Table 8-2 of the RCRA permit. WSMR determined that the closure activities conducted met the requirements for a release assessment, which was required for SWMU 108 in Table 8-2 of the RCRA permit. The revised CAC petition was submitted to NMED on July 3, 2013. The NMED issued an administratively complete determination of the CAC petition on Feb. 3, 2014 stating that they will now initiate a technical review of the submittal.

The objective at WSMR-41 is to complete the required CAC efforts.

CLEANUP/EXIT STRATEGY

Site ID: WSMR-41
Site Name: VE Well at TTF
Alias: SWMU-108

WSMR will complete the CAC petition requirements. The NMED review is expected to be completed in FY15.

Site ID: WSMR-43
Site Name: CHEMICAL WASTE TANKS (Former)
Alias: SWMU 31-32

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Other (Chromium)

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199205	201710

RIP Date: N/A

RC Date: 201710

SITE DESCRIPTION

WSMR-43 (SWMUs 31-32) consisted of two RCRA-regulated tanks located at the HELSTF. This site was approximately 37 km (23 mi) northwest of main post on WSMR Road 264. The chemical waste tanks were identical, located side-by-side, above-grade, and were constructed of reinforced concrete. The tanks were lined with a 45-milliter hypalon liner open to the atmosphere. Together, both tanks were capable of storing six months of waste.

In 1991, the HELSTF hazardous waste evaporation tanks were determined to be leaking. Approximately 113,500 L (30,000 gallons) of waste was removed from the tanks in 1992. The waste was disposed of at a permitted hazardous waste treatment facility. Following the removal, the concrete tank floor and walls were decontaminated, cored, and sampled. Results indicated that the concrete was not hazardous and the two concrete tanks were demolished and disposed of as construction debris.

The Phase III RFI work plan was submitted to the NMED in September 2005. The NMED submitted comments on the work plan in July 2006. WSMR responded in August 2006 with the commitment that the work plan would be revised in response to the NMED comments, however, WSMR requested the fieldwork commence in September 2006, with the understanding that official work plan approval would follow. The NMED agreed. WSMR submitted the revised work plan in January 2007 and the NMED approved it in January 2007. The final Phase III RFI report was submitted in 2007.

The original Phase III RFI report was submitted to NMED in February 2008. Per NMED's NOD, a revised Phase III RFI report was submitted to the NMED in September 2009. The NMED issued another NOD to the revised Phase III RFI report. WSMR submitted a second revision to the Phase III RFI report in August 2010. WSMR received a third NOD on the second revision of the report in FY12. The Phase III RFI report is currently under a third revision. Upon NMED approval of the Phase III RFI, WSMR anticipates petitioning the site for CAC with controls.

This SWMU is included in the WSMR's 2009 hazardous waste permit requiring corrective action.

CLEANUP/EXIT STRATEGY

WSMR anticipates achieving CAC with controls upon completion and approval of the Phase III RFI report.

Site ID: WSMR-49
Site Name: HELSTF HOLDING TANKS (Fluorspar)
Alias: SWMU 33-34

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Other (Calcium Fluoride (CaF2) Sodium Hydroxide (NaOH))

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199203	201710

RIP Date: N/A

RC Date: 201710

SITE DESCRIPTION

WSMR-49 (SWMUs 33-34) consisted of two side-by-side tanks located at the HELSTF area. The tanks were 30 by 60 by 2 by 4 ft and received fluorspar from the Laser System Pressure Recovery System (PRS). During lasing operations, effluents produced by combustion of the fuel and oxidizer must be removed from the laser cavity as they are produced. The PRS then treats the combustion products to remove the hydrogen fluoride (HF) and deuterium fluoride (DF) and discharges the exhaust gas to the atmosphere. The emission control scrubber used a solution of sodium hydroxide to react with the HF and DF to form sodium fluoride. The solution is then treated with lime to form fluorspar. The fluorspar is then pumped to the tanks. The tanks act as drying beds for the fluorspar sludge. The dried fluorspar is periodically removed for off-site disposal. The tanks are below grade level, are made of concrete and have a capacity sufficient to contain the fluorspar produced during a period of one year. Approximately 900 pounds (lbs) was produced per week. The tanks have two sloped entrances suitable for use by a frontend loader for removal of dry solids. The tanks have no secondary containment. The use of these tanks was discontinued in 2009 and fluoride was found above residential soil screening levels (SSL).

An RFA was conducted in 1988 that suggested a high release potential to soil and a low release potential to groundwater. The RFA stated a moderate release potential to surface water, a low release potential to air, and no release potential to subsurface gas generation for all the SWMUs included in CCWS-83. The RFA suggested that an NFA is warranted. Supplemental sampling and a risk assessment were completed and a revised Phase III RFI was submitted in September 2008. This SWMU was included with as part of the HELSTF Phase III RFI. A HELSTF Phase III RFI began in FY03 to address all HELSTF sites under one comprehensive study. The Phase III RFI includes a comprehensive data review, further data collection (groundwater sampling) and an ecological risk assessment. The work includes various IRP sites as well as various sites currently under the CC program.

The Phase III work plan was submitted to the NMED in September 2005. The NMED submitted comments on the work plan in July 2006. The WSMR responded in August 2006 with the commitment that the work plan would be revised in response to the NMED comments; however, WSMR requested the fieldwork commence in September 2006, with the understanding that official work plan approval would follow. The NMED agreed. The WSMR submitted the revised work plan in January 2007 and the NMED approved it in January 2007.

The original Phase III report was submitted to NMED in February 2008. Per the NMED's NOD, a revised Phase III RFI report was submitted to the NMED during September 2009. Following submittal of the revised Phase III RFI report the NMED conducted a preliminary review of the document and provided comments to the revised RFI report. The WSMR submitted a second revision to the Phase III RFI report in August 2010. WSMR received another NOD on the second revision of the Phase III RFI report in March 2012. The Phase III RFI report is currently under a third revision. The findings of the Phase III RFI showed that achieving a CAC with controls is warranted.

CLEANUP/EXIT STRATEGY

WSMR anticipates achieving CAC with controls upon completion and approval of the Phase III RFI report.

Site ID: WSMR-50
Site Name: SWMUs 35-36 and AOC-V
Alias: SWMU 35-36

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Other (Ethylene Glycol)

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198809
RFI/CMS	198901	201710
IRA	198902	198905

RIP Date: N/A

RC Date: 201710

SITE DESCRIPTION

WSMR-50 (SWMUs 35-36 and AOC V), consisted of two ethylene glycol tanks (SWMUs 35-36) and a pressure recovery system (AOC-V) located in the SE portion HELSTF.

These steel tanks were located immediately west of the Former Chemical Waste Evaporation Tanks at HELSTF and were approximately 5 ft long by 4 ft tall by 4 ft wide. The tanks were used as emergency storage containers for ethylene glycol in the event the compressor system at HELSTF failed. An emergency release occurred, in 1988. The ethylene glycol was disposed through the Holloman AFB Defense Reutilization Marketing Organization (DRMO) now known as the Defense Logistics Agency (DLA) Disposition Services. There were no other reported releases of ethylene glycol to the tanks.

A RFA was conducted in 1988 that suggested a low release potential to soil and groundwater. The RFA stated a low release potential to surface water, a low release potential to air, and low release potential to subsurface gas generation for all the SWMUs included in CCWS-83. The RFA suggested that NFA is warranted.

A HELSTF Phase III RFI commenced in 2003 to address all HELSTF sites under one comprehensive study. WSMR-50 is one of several sites being addressed under the HELSTF Phase III RFI. The Phase III RFI included a CSM that considers HELSTF as a single corrective action unit for the purpose of evaluating and determining appropriate remedial options. A Phase III work plan was submitted to the NMED in September 2005. The NMED submitted comments on the work plan in July 2006. WSMR responded in August 2006 with the commitment that the work plan would be revised in response to NMED comments; however, WSMR requested the fieldwork commence in September 2006 with the understanding that official work plan approval would follow. The NMED agreed. WSMR submitted the revised work plan in January 2007 and the NMED approved it in January 2007. The original Phase III RFI report was submitted in February 2008. Per NMED's NOD, a revised Phase III RFI report was submitted to the NMED in September 2009. Following submittal of the revised Phase III RFI report NMED conducted a preliminary review of the document and provided comment to the revised RFI report. WSMR submitted a second revision to the Phase III RFI report in August 2010. WSMR received another NOD on the second revision of the Phase III RFI report in March 2012. The Phase III RFI report is currently under a third revision. The findings of the Phase III RFI showed that achieving a CAC with controls is warranted.

Following the approval of the Phase III RFI report, WSMR-50 will be included in a petition to perform a Class III permit modification to change the status of SWMUs from corrective action required to CAC with controls.

The SWMUs and AOC are included in the WSMR 2009 hazardous waste permit requiring correction action.

CLEANUP/EXIT STRATEGY

WSMR anticipates achieving CAC with controls upon completion and approval of the Phase III RFI report.

Site ID: WSMR-53
Site Name: HELSTF TEST CELL LAGOONS
Alias: SWMU-145

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Other (Fluoride, Sodium Hydroxide)

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199206	201710
IRA	199606	199607

RIP Date: N/A

RC Date: 201710

SITE DESCRIPTION

WSMR-53 consisted of the Test Cell 4 Lagoon located in the HELSTF area. The dimensions of the unit were 105 by 60 by 6 ft with a single liner and no secondary containment. The laser was never installed; therefore, the lagoon was never used for its original purpose. In 1989, a one-time discharge of 30,000 gallons of sodium fluoride and sodium hydroxide wastewater was released and the liner failed and the wastewater leaked into the ground.

In 1992, a Phase I RFI was conducted and included a composite sediment sample from within the lagoon, a background soil sample, and installation of a groundwater monitoring well.

In 1994, a Phase II RFI was conducted and included the installation of three monitoring wells. Soil samples were collected during the installation of the wells and analyzed for VOC, SVOC, RCRA metals, and fluoride. VOCs and SVOCs were not detected. Groundwater samples were collected and analyzed for various contaminants. 1,1-Dichloroethene, lead, selenium, and fluoride exceeded their respective maximum contaminant levels (MCL).

Following the Phase II RFI, an RA was conducted to remove the lagoon and excavate possible contaminated soil. The liner and 2 ft of soil beneath were removed. Nine confirmatory samples were collected from a depth of 2 to 3 ft beneath the excavation floor. All samples were determined to be nonhazardous, the lagoon subsequently backfilled, and the area graded and paved to minimize precipitation infiltration into the area.

A Class III permit modification NFA petition was submitted to remove this site from the HSWA corrective action module of the RCRA Part B permit. The state disapproved the petition requesting additional investigation, including a background soil investigation and an ecological risk assessment.

A HELSTF Phase III RFI began in FY03 to address all HELSTF sites under one comprehensive study. The Phase III RFI includes a comprehensive data review, further data collection (groundwater sampling) and an ecological risk assessment. The work includes IRP sites WSMR-52, WSMR-53, WSMR-54, WSMR-55, WSMR-78 and WSMR-83, as well as various sites currently under the CC program.

The Phase III work plan was submitted to the NMED in September 2005. The NMED submitted comments on the work plan in July 2006. The WSMR responded in August 2006 with the commitment that the work plan would be revised in response to the NMED comments; however, WSMR requested the fieldwork commence in September 2006, with the understanding that official work plan approval would follow. The NMED agreed. The WSMR submitted the revised work plan in January 2007 and the NMED approved it in January 2007. The final Phase III report was submitted in 2007.

The original Phase III report was submitted to the NMED in February 2008. Per the NMED's NOD, a revised Phase III RFI report was submitted to the NMED in September 2009. The NMED issued a second NOD and WSMR submitted a second revision to the Phase III RFI report in August 2010. WSMR responded with a third NOD on the Phase III RFI report in March 2012. The report is currently under a third revision. The findings of the Phase III RFI showed that achieving a CAC with controls is warranted.

Site ID: WSMR-53
Site Name: HELSTF TEST CELL LAGOONS
Alias: SWMU-145

Since 1995, nine wells have undergone semiannual groundwater monitoring which have indicated the area remains impacted.

Following the approval of the Phase III RFI report, WSMR-53 will be included in a petition to perform a Class III permit modification to change the status of SWMUs from corrective action required to CAC with controls.

CLEANUP/EXIT STRATEGY

WSMR anticipates achieving CAC with controls upon completion and approval of the Phase III RFI report.

Site ID: WSMR-54
Site Name: HELSTF STORAGE YARD CHROMATE SPILL
Alias: SWMU-143

STATUS

Regulatory Driver: RCRA

RRSE: MEDIUM

Contaminants of Concern: Metals, Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199103	201705
IRA	199808	199812

RIP Date: N/A

RC Date: 201705

SITE DESCRIPTION

WSMR-54 consists of a hexavalent chromium spill located at the HELSTF Equipment Storage Area (SWMU 141), resulting from an accidental spill that occurred in the early-1980s, when unused hexavalent chromium-based corrosion inhibitor was released from leaking storage drums.

In 1992, a Phase I RFI soil borings indicated slightly elevated total chromium concentrations. A groundwater sample showed hexavalent chromium, total chromium, and 1,1-dichloroethylene levels exceeding federal and state MCLs and state groundwater protection standards.

In 1994, the Phase II RFI indicated chromium contamination in nearby monitoring wells and six solvent type organic compounds: benzene, toluene, ethylbenzene, and xylene (BTEX). These compounds were attributed to the neighboring diesel spill (WSMR-55).

Since 1995, semiannual groundwater monitoring which has been ongoing at nine wells, indicates the area remains impacted. Preliminary remedial efforts at this site included partial excavation of the contaminated soil and in situ gaseous reduction. The reduction pilot study involved injecting diluted hydrogen sulfide to immobilize and reduce the hexavalent chromium to its nontoxic trivalent form, resulting in the successful reduction of 70 percent of the hexavalent chromium.

WSMR-54 is one of several sites being addressed under the HELSTF Phase III RFI and conceptual site model (CSM) funded under WSMR-85. The CSM considers HELSTF as a single corrective action unit for the purpose of evaluating and determining appropriate remedial options.

A HELSTF Phase III RFI commenced in FY03 to address all HELSTF sites under one comprehensive study. The Phase III RFI includes a comprehensive data review, further data collection (groundwater sampling) and an ecological risk assessment. The work includes IRP sites WSMR-52 through WSMR-55, WSMR-78 and WSMR-83, as well as CCWS-05 and CC-16 in the CR program.

The Phase III work plan was submitted to the NMED in September 2005. The NMED submitted comments on the work plan in July 2006. WSMR responded in August 2006 with the commitment that the work plan would be revised in response to the NMED comments; however, WSMR requested the fieldwork commence in September 2006, with the understanding that the official work plan approval would follow. The NMED agreed. WSMR submitted the revised work plan in January 2007 and the NMED approved it in January 2007.

The original Phase III report was submitted to the NMED in February 2008. Per the NMED's NOD, a revised Phase III RFI report was prepared and submitted to the NMED during September 2009. Following submittal of the revised Phase III RFI report the NMED conducted a preliminary review of the document and provided comments to the revised RFI report. The WSMR submitted a second revision as well as supplemental sampling completed risk assessments for the Phase III RFI report in August 2010. WSMR received another NOD on the second revision of the Phase III RFI report in March 2012. The Phase III RFI report is currently under a third revision. The findings of the Phase III RFI showed that achieving a CAC with controls is warranted.

Site ID: WSMR-54
Site Name: HELSTF STORAGE YARD CHROMATE SPILL
Alias: SWMU-143

Following the approval of the Phase III RFI report, groundwater and soil remediation will be initiated followed by operation.

CLEANUP/EXIT STRATEGY

WSMR anticipates completing the Phase III RFI and developing a corrective measures plan to remediate the soil and groundwater contamination. Groundwater monitoring at the site will continue and WSMR plans to submit annual site-wide groundwater monitoring reports to NMED.

Site ID: WSMR-55
Site Name: HELSTF SYSTEMIC DIESEL SPILL
Alias: SWMU-154

STATUS

Regulatory Driver: RCRA

RRSE: MEDIUM

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199206	201709
IRA	199408	200709

RIP Date: N/A

RC Date: 201709

SITE DESCRIPTION

WSMR-55 (SWMU 154) is located in the vicinity of the HELSTF cleaning facility (HCF) (CCWS-05; SWMU 142). The diesel spill was discovered when a drain line failed resulting in the release of spent cleaning solvents. During the investigation, a large volume of diesel fuel in solution with the cleaning solvents was discovered. The diesel fuel came from a UST that provided fuel to the HCF through an underground pipeline. The pipeline failed when portions of it were corroded by the naturally occurring alkaline soil.

The UST was removed in 1988. In 1994 an IRA was initiated that included installation of wells designed to recover diesel fuel floating on the perched water-bearing zone. The system was operated for approximately 10 years; however, recent evaluation of the system determined diminishing returns. The system is no longer in operation.

Semiannual groundwater monitoring began in 1998. Eleven wells are monitored and sampled for various constituents. During FY05, sampling efforts were modified to include evaluation of the adjacent and commingled contamination plume related to SWMU 142, which in the past was monitored by the US Geological Survey (USGS) in a separate effort. This decision was part of the overall effort to environmentally investigate and manage the HELSTF area holistically.

WSMR-55 is one of several sites being addressed under the HELSTF Phase III RFI and CMS. The CMS considers HELSTF as a single corrective action unit for the purpose of evaluating and determining appropriate remedial options. The WSMR will continue monitoring the 11 wells semiannually and investigate this site under the HELSTF Phase III RFI being conducted under WSMR-85. In addition, WSMR will use the obtained groundwater monitoring data to evaluate releases from SWMU 142 and identify and implement remedial alternatives following the completion of a CMS (completed by end of FY09).

A HELSTF Phase III RFI commenced in FY03 to address all HELSTF sites under one comprehensive study. The Phase III RFI includes a comprehensive data review, further data collection (groundwater sampling) and an ecological risk assessment. The work includes IRP sites WSMR-52, WSMR-53, WSMR-54, WSMR-55, WSMR-78 and WSMR-83, as well as various sites currently under the CC program.

The Phase III work plan was submitted to the NMED in September 2005. The NMED submitted comments on the work plan in July 2006. The WSMR responded in August 2006 with the commitment that the work plan would be revised in response to the NMED comments; however, the WSMR requested that the fieldwork commence in September 2006, with the understanding that the official work plan approval would follow. The NMED agreed. The WSMR submitted the revised work plan in January 2007 and the NMED approved it in January 2007. The final Phase III report was submitted in 2007.

The original Phase III report was submitted to the NMED in February 2008. Per the NMED's NOD, a revised Phase III RFI report was prepared and submitted to the NMED during September 2009. Following submittal of the revised Phase III RFI report the NMED conducted a preliminary review of the document and provided comments to the revised RFI report. The WSMR submitted a second revision to the Phase III RFI report in August 2010. WSMR received another NOD on the second revision of the Phase III RFI report in March 2012. The Phase III RFI report is currently under a third revision. Based on the results of the RFI WSMR will implement a CMS.

Site ID: WSMR-55
Site Name: HELSTF SYSTEMIC DIESEL SPILL
Alias: SWMU-154

CLEANUP/EXIT STRATEGY

WSMR anticipates completing the Phase III RFI and developing a corrective measures plan to remediate the soil and groundwater contamination. Groundwater monitoring and operation of the system at the site will continue and WSMR plans to submit annual site-wide groundwater monitoring reports to NMED.

Site ID: WSMR-56
Site Name: PAINT SHOP SUMP
Alias: SWMU-137

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Metals, Other (Solvents)

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
RFI/CMS	199206	201706

RIP Date: N/A

RC Date: 201706

SITE DESCRIPTION

WSMR-56 (SWMU 137) is located at the northeast end of Building 1742 on the main post. Building 1742 is 4,321 square ft and operations at the site began in 1968; however it is no longer used as a paint shop. Wastewater generated from the paint spray booth located inside Building 1742 was discharged by gravity flow into a concrete sump. Sludge, paint, and other debris were separated by gravity and transferred by gravity flow to the STP. The sludge was removed periodically and disposed of a hazardous waste; however, the frequency of sludge removal is not known and was not documented. That paint shop sump is square (3 by 3 ft) and 3 feet deep with three in concrete walls. The head of the 6-in steel drain pipe is exposed in the northern face of the sump and extends for six ft north and then transitions to a vitreous clay pipe.The clay pipe measuring approximately 6 in in diameter trends downward for approximately 4 ft where it intersects the main wastewater line. A square metal cover (approximately 42 by 42 inches) and one-quarter in thick over the sump is flush with the surrounding asphalt-covered ground surface adjacent to Building 1742. The former owner stated only rainwater runoff currently drains to the sump and drain pipe. The drain hole from Building 1742 to the sum is now plugged and the sump no longer accepts wastewater. No paint sludge was observed during investigation activities in February 2012, and there is no history of a release at the unit.
In 1993, at the conclusion of the Phase I RFI, WSMR submitted a request to the USEPA petitioning to remove 25 SWMUS from the hazardous and solid waste amendments permit. The USEPA approved the removal of the 24 SWMUs and published a statement of basis (SOB) on November 29, 1995. The SOB served as the USEPA notice of decision that announced its intention to approve the request for a Class III permit modification. The paint shop sump was removed from the HSWA corrective action module of the RCRA Part B permit; however the drain line had not been adequately investigated.

In 1999, WSMR requested that NMED amend the annual unit audit (AUA) by removing several corrective action units from the permit; SWMU 137 was included in the list of protested corrective action units. In July 1999, NMED responded to the request and stated that HRMB concurs with USEPAs NFA determination for the unit.

This SWMU is included in Table 8-2 of WSMR's 2009 hazardous waste permit requiring a corrective action work plan submittal by July 1, 2015.

In September 2010 a PBA was awarded, to achieve RC.

An investigation work plan was approved by the NMED in August 2011. Upon NMED approval of the work plan, WSMR completed the fieldwork and submitted an investigation report in May 2012. NMED responded with disapproval in June 2013, calling for additional investigation, a revised report, and a letter report to report the abandonment of the sump. WSMR received NMEDs approval to include the abandonment activities as part of the revised investigation report. WSMR submitted a revised report in October 2013. On February 27, 2014 WSMR received a second disapproval requiring a risk assessment to supplement WSMRs proposal for CAC. A second revision was submitted and NMED approved the report on August 5, 2014. WSMR can now submit a petition to change the status of the site to CAC.

CLEANUP/EXIT STRATEGY

WSMR anticipates submitting a CAC without controls petition per the NMED approval of the RFI.

Site ID: WSMR-57
Site Name: FORMER GOLF COURSE PESTICIDE STG SHED
Alias: SWMU-156

STATUS

Regulatory Driver: RCRA

RRSE: MEDIUM

Contaminants of Concern: Other (Fertilizers), Pesticides

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199204	201705
IRA	199508	199508

RIP Date: N/A

RC Date: 201705

SITE DESCRIPTION

WSMR-57 (SWMU 156), Building T-1348, was located at the Main Post Golf Course. This site consisted of a butler-style metal building with a wooden floor. The building was used for more than 30 years to store pesticide, fungicide, and pesticide application equipment. The building was removed and the wooden flooring was stored in a pile on the concrete foundation of the former structure. A plastic cover was placed over the debris pile. The foundation dimensions measured 20 ft by 50 ft. RFI findings indicated the presence of low level VOCs and pesticides in the area.

Prior to remedial activities, 10 soil samples were collected at depths of 0 to 1 ft and 1 to 2 ft bgs in five soil borings at the storage shed site. Two composite wood samples were collected from the stored wood debris. All samples were characterized as nonhazardous. The concrete foundation, wood floor, plastic cover, and 2 ft of soil taken from the building footprint were disposed. Three confirmatory soil samples were collected from the building footprint and analyzed. Constituents detected were below regulatory limits.

A Class III permit modification petition for NFA was submitted on Jan. 24, 2000 for this and several other sites. A public meeting was held on Feb. 23, 2000 to solicit public comment concerning the Class III permit modification as part of the final RCRA Expanded Public Participation Rule (40 CFR 270.2). The public did not provide comments on this site.

The state disapproved the petition in March 2002 and requested additional investigation including background metals study, CS, and an ecological risk assessment. This investigation recommenced in FY03 and is slated to be completed by FY06. The WSMR submitted a Phase III RFI work plan (BAE, 2004c) dated June 2004. The work plan covered WSMR-30 plus 10 additional IRP sites which were also disapproved in the March 2002 letter. The sites were all funded under WSMR-30 beginning in FY05. This work is referred to as the Main Post Phase III RFI since all sites are within the main post cantonment area.

The NMED submitted a NOD (dated Nov. 15, 2004) including a total of 10 comments requiring a WSMR response. The WSMR's response addressed these comments and the work plan was executed in FY05. The final RFI report was submitted and reviewed by the NMED. The NMED submitted a NOD (dated Dec. 8, 2006) with six comments. Additionally, the NMED expressed reservations with conclusions of a soil background study conducted under the CC program. This study was used in supporting conclusions and recommendations included in the Phase III RFI final report. Discussions between the WSMR and the NMED are ongoing. The WSMR is preparing a response to the NMED December 2006 comments received; furthermore, in a Jan. 24, 2007 letter, the NMED stated that several sites covered under the Phase III RFI could be eligible for "NFA with controls" in place.

WSMR-57 is listed in Appendix 4 of the December 2009 WSMR RCRA Part B permit requiring corrective action. WSMR-57 is included in the WSMR PBA contract with the contractor to achieve approval of the CAC for the site.

The site was petitioned for CAC without controls on July 26, 2012. NMED submitted an administratively incomplete determination and required WSMR to submit a revised CAC. WSMR submitted a revised CAC without controls on Jan. 25, 2013. The revised CAC without controls is currently under NMED review.

The CAC to achieve RC at the site is being captured the current RFI/CMS phase.

Site ID: WSMR-57
Site Name: FORMER GOLF COURSE PESTICIDE STG SHED
Alias: SWMU-156

CLEANUP/EXIT STRATEGY

WSMR will complete the CAC petition requirements. The NMED review is expected to be completed in FY15.

Site ID: WSMR-58
Site Name: VANDAL BURIAL SITE
Alias: SWMU-153

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Explosives, Munitions constituents (MC)

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199205	201706
IRA	199507	199609

RIP Date: N/A

RC Date: 201706

SITE DESCRIPTION

WSMR-58 (SWMU 153) is an area approximately 270 by 140 ft that is located in the Hazardous Test Area (HTA) of WSMR adjacent (25 ft south) to the open burn/open detonation (OB/OD) area (SWMUs 55, 56, and 56a). The site is approximately 7 miles north of the Main Post. During the mid 1950s, missile and rocket parts were buried in three distinct cells and covered with approximately 2 to 3 ft of soil.

In 1992 an RFI was performed to determine whether a release had occurred. The RFI conclusion was no release from SWMU 153 was evident based on the data. In 1996, a removal action was performed to excavate the metal and debris and associated soil. Approximately 10,900 cys of soil were removed from the burial area. The metal and debris were disposed of off-site. After receiving approvals from the various WSMR departments, the soil was disposed of at the Main Post Landfill. Soil samples were collected from the base of the excavation, and the results confirmed that soil remaining in the area contained no RCRA metals above the 1992 NMED residential SSLs. During 1995 two monitoring wells were installed to provide cross-gradient and downgradient groundwater data within the HTA site. In 2001 NMED, requested additional soil sampling of the previously excavated area as part of the physical closure activities of the HTA OB/OD unit.

This SWMU is included in Table 8-2 of WSMRs 2009 Hazardous Waste Permit requiring a corrective action work plan submittal by July 1, 2015.

In September 2008 a PBA was awarded to achieve RC.

A RFI work plan was submitted in October 2011 and approve by NMED on April 30, 2012. The RFI report was submitted in December 2012. The results of the investigation at SWMU 153 indicated that no potential perchlorate source is present in the investigated area. Therefore, SWMUs 55, 56, and 56a the OB/OD site at HTA site are considered as the likely source for perchlorate concentration in groundwater from well HTA-14. To address the perchlorate and Research Department Explosive (RDX) groundwater contamination, the recommendation is to implement the NMED approved investigation plan for the OB/OD area and develop and implement the post-closure care plan for the site. The results of the RFI for the site indicated that no source of contamination is present in the soil from this site and that the site should be proposed for NFA. The NMED responded with disapproval to the RFI report on February 27, 2014. WSMR submitted a revised RFI report in May 2014. NMED approved the revised RFI in a letter dated December 12, 2014

Based on the NMED approval and NFA determination of the RFI, WSMR anticipates submitting a Class III Permit Modification Petition to the NMED to change the status of the site to CAC.

CLEANUP/EXIT STRATEGY

WSMR anticipates submitting a CAC with controls petition based on the approval of the RFI report.

Site ID: WSMR-59
Site Name: FORMER SEWAGE TREATMENT PLT(IMHOFF
Alias: SWMU-62

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Other (Metals, Cyanide and Solvents)

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199206	201701

RIP Date: N/A

RC Date: 201701

SITE DESCRIPTION

WSMR-59 (SWMU 62) was a wastewater treatment plant reportedly located adjacent to the former horse stables. The plant was abandoned in 1958 when the new STP was constructed. The plant was reported to have consisted of an Imhoff Tank. Effluent from the tank may have drained into a nearby ditch. As of 1988 no information was available on the management of sludge from the unit. In 1988, there was no reported visible evidence of the site. The date of start-up of the tank is unknown. The plant treated sewage wastes from the Post Area. The unit was also likely to receive any chemical wastes from tenant activities and support operations such as various photo and chemical labs. It is expected the wastes managed would have been similar to those handled by the active STP. Therefore such hazardous constituents as metals, cyanides, and solvents would have been in the wastes.

A RFA was conducted in 1988 that suggested a high release potential to soil/groundwater based on the reported discharge of effluent to a nearby drainage ditch. A high release potential to surface water was also reported based on the same discharge. The potential for release to air is unknown based on lack of information on operational procedures. The potential for past generation of gases is unknown based on lack of information on operational procedures. The RFA suggested an RFI be conducted. The RFA also suggested subsurface sampling to characterize the nature and extent of contamination.

In 1992, a Phase I RFI was performed to determine whether the Imhoff tank was still in place and whether a significant release had occurred. In March 1991, total magnetic field, ground conductivity, and in-phase component geophysical survey methods were used to tentatively locate the tank. All three methods exhibited highly anomalous values in the eastern portion of the survey area. This anomaly is roughly circular with a radius of approximately 50 ft. Due to magnitude of anomalous readings on all three data sets this area is suspected to be the location of the Imhoff tank.

This SWMU was included in Table 4-1 of the WSMR 2009 hazardous waste permit requiring corrective action.

The objective at WSMR-59 is to conduct an RFI followed by a CAC petition.

The RFI and CAC petition will be funded under the currently RFI/CMS phase.

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting an RFI followed by a CAC petition.

Site ID: WSMR-60
Site Name: WASH RAMP & DRAIN/SUMP EAST OF BLDG 1778
Alias: SWMU 12,13

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199206	201707

RIP Date: N/A

RC Date: 201707

SITE DESCRIPTION

WSMR-60 (SWMU 12-13) consists of the vehicle wash ramp and drains, and the sump and oil/water separator situated east of Building 1778 and west of Building 1776 in the main post maintenance area. The units have been active since the mid-1950s. The vehicle wash ramp (SWMU 12) consists of a concrete pad approximately 40 ft long and 15 ft wide with an open metal work ramp erected above the concrete pad. The pad slopes toward the drain (at the center of the pad) that discharges into a 200-gallon sump and oil/water separator (SWMU 13) at the south end of the drain. The separator/sump is constructed of reinforced concrete and covered by a metal grate. Separation of water, oil and debris is accomplished by gravity. The waste oil and debris from the sump/separator are periodically transferred to the waste oil tank (SWMUs 8 and 9) while rinse water is piped to the STP (SWMUs 66-78).

Both Phase I (1992) and Phase II (1994) RFIs found no significant release of contaminants at this site. The ramp portion of the facility was dismantled in 1997 and removed as scrap.

A Class III permit modification petition for NFA was submitted on Jan. 24, 2000 for this and several other sites. A public meeting was held on Feb. 23, 2000 to solicit public comment concerning the Class III permit modification as part of the final RCRA Expanded Public Participation Rule (40 CFR 270.2). The public did not provide comments on this site.

The state disapproved the petition in March 2002 and requested additional investigation including background metals study, CS, and ecological risk assessment. This investigation recommenced in FY03 and is slated to be completed by FY06. The WSMR submitted a Phase III RFI work plan (BAE, 2004c) dated June 2004. The work plan covered WSMR-30 plus 10 additional IRP sites which were also disapproved in the March 2002 letter. The sites were all funded under WSMR-30 beginning in FY05. This work is referred to as the Main Post Phase III RFI since all sites are within the main post cantonment area.

NMED submitted a NOD (dated Nov. 15, 2004) including a total of 10 comments requiring a WSMR response. The WSMR's response addressed these comments and the work plan was executed in FY05. The final RFI report was submitted and reviewed by NMED. NMED submitted a NOD (dated Dec. 8, 2006) with six comments. Additionally, NMED expressed reservations with conclusions of a soil background study conducted under the CC program. This study was used in supporting conclusions and recommendations included in the Phase III RFI final report. Discussions between the WSMR and the NMED are ongoing. The WSMR is preparing a response to the NMED December 2006 comments received; furthermore, in a Jan. 24, 2007 letter, the NMED stated that several sites covered under the Phase III RFI could be eligible for "NFA with controls" in place.

WSMR-60 is listed in Appendix 4 of the December 2009 WSMR RCRA Part B permit requiring corrective action. WSMR-60 is included in the WSMR PBA contract to achieve approval of the CAC petition for the site.

A background study was completed and approved by the NMED in June 2013. Based on the findings of the background study, the site was petitioned for CAC with controls to NMED in June 2013. NMED disapproved the CAC petition requiring additional information. WSMR anticipates submitting a revised petition with the required information.

Site ID: WSMR-60

Site Name: WASH RAMP & DRAIN/SUMP EAST OF BLDG 1778

Alias: SWMU 12,13

CLEANUP/EXIT STRATEGY

Based on the NMED CAC petition disapproval notice, WSMR anticipates completing the CAC petition requirements by submitting additional information to NMED.

Site ID: WSMR-67
Site Name: STALLION ASPHALT TANKS
Alias: SMU121-123

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Metals, Other (TPH)

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199305	201707
IRA	199307	199307

RIP Date: N/A

RC Date: 201707

SITE DESCRIPTION

WSMR-67 (SWMUs 121-123) was located north of the Stallion Range Center (SRC) just west of the Stallion Gate security checkpoint and consisted of three inactive, subgrade tanks. Two tanks were steel and one was aluminum. The tanks were used in the 1960s during the paving of the SRC roads. The storage tanks were labeled Tank 1 (SWMU 121), Tank 2 (SWMU 122), and Tank 3 (SWMU 123).Tanks 1 and 2 were constructed of plate steel.Tank 3 was constructed of aluminum. Each storage tank had a capacity of approximately 15,000 gallons and dimensions of 26 ft in length by 9 ft in diameter. Located on the side of a hill, soil extended approximately halfway up the sides of the tanks on their northern end, while the soil on the southern ends of the tanks only extended approximately 1/8 up the tanks sides. The tanks were neither fully aboveground nor underground. One of the tanks appeared to be severely collapsed. The visible portions of the other two tanks appeared to be in good condition. All three tanks appeared to be empty and abandoned based upon the visual survey in 1988. No piping or vent lines were observed to be connected to or associated with the tanks. A tar-like odor was apparent on the downwind side of the tanks. The ground on the north side of the tanks appeared to be stained with a tar-like substance that looked dry, dark, and cracked and appeared to have been there a long time. Facility personnel were unable to provide a list of materials which may have been managed within the tanks, the age of the tanks, and the dates of operation of the units.

A RFA was conducted in 1988 that suggested a moderate release potential to soil/groundwater, surface water, air, and subsurface gas generation for the SWMUs. The RFA suggested that an RFI may be warranted.

The Phase I RFI was conducted in 1992. In September 1993, the USEPA approved the Phase I RFI report and stated that SWMUs 121, 122, and 123 were among the 24 of the 38 SWMUs requiring no further investigation and can be delisted or removed from WSMRs corrective action permit.

In 1993, WSMR performed a voluntary corrective action (VCA) to remove two storage tanks
and excavate soil.

These SWMUs were included in Table 8-2 of the WSMR 2009 hazardous waste permit requiring a corrective action.

A PBA was issued in June 2010, to achieve approval of a CAC petition.

A CAC petition was submitted to NMED in July 2012. In Oct. 2012 NMED responded to the CAC petition with a administratively incomplete determination. NMED determined that SWMUs 121-123 required a release assessment and therefore could not evaluate them for CAC status and that further excavation at the site was not conducted following removal of the tanks.Following the administratively incomplete determination WSMR submitted a revised CAC petition as well as a release assessment report on Jan. 1, 2013. The release assessment addressed the requirements of Appendix 8, Table 8-2 of the RCRA Permit. WSMR stated that although the sites are not newly identified the document contains the elements found in the permit and that investigation and remediation work had already been completed at the site. In August 2013 WSMR received a NOD for the revised report and required WSMR to remove sites from the report. WSMR submitted the revised release assessment on Oct. 13, 2013. On Feb. 19, 2014, WSMR received an approval with modifications on the revised release assessment report. NMED determined that SWMUs 121-123 are not eligible for CAC until WSMR addresses the issues found within the revised release assessment. NMED determined that once the investigation at the site is complete WSMR may resubmit petitions. WSMR removed SWMUs 121-123

from the Jan. 1, 2013 revised CAC petition.

The objective at WSMR-67 is to conduct a RFI.

CLEANUP/EXIT STRATEGY

WSMR will complete an RFI to address the NMED issues found within the release assessment. WSMR anticipates re-submitting a CAC petition upon approval of the RFI report.

Site ID: WSMR-70
Site Name: FORMER LANDFILL @ STALLION RANGE CENTER
Alias: SWM119-120

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199612	201906

RIP Date: N/A

RC Date: 201906

SITE DESCRIPTION

WSMR-70 consists of two SWMUs, 119 and 120. SWMU 119 is located at the SRC approximately 100 miles north of the main post in the northeast section of WSMR. The active landfill is about 300 ft by 380 ft in size, and is surrounded by an 8-ft chain-link fence. The cells are excavated to a size of approximately 60 ft wide by 100 ft long and sloped to depth of about 15 ft. Waste is collected in dumpsters and emptied into the active cell, where it is reportedly covered daily. Just north of the active landfill is the inactive Former Stallion Landfill (SWMU 120) which was closed when the current landfill opened in 1984. The unit receives sanitary waste from the SRC. Daily cover is applied as waste is place in the unit. There is no record of a past release from this unit. SWMU 120 was a sanitary landfill used for sanitary waste generated at the SRC from 1970 until 1984. The unit was the same size as the currently used Stallion Landfill and was operated in the same manner. The unit is located adjacent to the current landfill (SWMU 119) and it is not fenced. There was no record of a past release from this unit.

An RFA was conducted in 1988 that suggested a low release potential to soil/groundwater, surface water, air, and subsurface gas for SWMUs 119-120. According to the RFA, NFA was suggested for both SWMUs.

In July 1995, three groundwater monitoring wells were installed to provide hydrogeologic information for the SRC landfill area. Groundwater samples were collected in August 1995. Based on the results no VOCs, SVOC, organocholorine pesticides/polychlorinated biphenyls, or TPH were detected above laboratory reporting limits in any of the groundwater samples. Only barium and chromium were detected.

In October 1995, a background groundwater monitoring plan for the site was prepared. In October 1996, three wells were sampled as part of the range-wide SWMU groundwater monitoring program. One explosive compound, high melting explosive (HMX), was detected. Based on the review of the groundwater monitoring program a fourth downgradient monitoring well was installed. In March 2001, WSMR received a small-volume operation exemption for the SRC landfill from the NMED Solid Waste Bureau, which minimized the annual requirements for the facility. Groundwater monitoring and methane monitoring are not required on an annual basis as long as the operating conditions are met.

These SWMUs were included in WSMR's 2009 hazardous waste permit requiring corrective action.

A PBA contract was issued in June 2010 to achieve a RFI.

In FY11, an RFI investigation work plan was submitted to NMED for their review. NMED approved the work plan with modifications in May 2012. WSMR submitted an RFI report in January 2013 describing field activities. WSMR received an Approval with Modifications letter from NMED dated May 13, 2014. The NMED requires some clarification to the report and 4 years of annual groundwater monitoring due to the detections of TPH and HMX. WSMR feels annual monitoring for this site is not warranted and will discuss options with the NMED.

WSMR anticipates petitioning for CAC and this action will be captured under the RFI/CMS phase.

Site ID: WSMR-70

Site Name: FORMER LANDFILL @ STALLION RANGE CENTER

Alias: SWM119-120

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting annual groundwater monitoring as required by the NMED. Discussions will be initiated with NMED to contest ongoing groundwater monitoring for the site. A CAC with controls petition is expected to be submitted to the NMED.

Site ID: WSMR-71
Site Name: FORMER NORTH OSCURA PEAK LANDFILL
Alias: SWMU47-49

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Metals, Other (Organics)

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199105	201706
IRA	199908	200401

RIP Date: N/A

RC Date: 201706

SITE DESCRIPTION

WSMR-71 consists of three landfill cells located in the Oscura Mountains in the northern section of WSMR. A small open trench (SWMU 47) was reportedly used to dispose septic waste but wire and various waste materials were visible. Another open trench (SWMU 48) was above the surrounding grade with little vegetation and disturbed soil. Material visible in the trench included glass and plastic bottles, wiring, wood, and miscellaneous waste. A mound of dirt approximately 10 ft high was situated at the north end of this trench. The third trench (SWMU 49) was covered with soil. Investigations to include drilling and sampling of the trench were completed. Waste identified included wood, wire, plastic, and metal debris.

Although the North Oscura Peak Landfill was identified during the RFA, SWMUs 47-49 were not included in the Phase I and Phase II RFIs. An investigation of the SWMUs was conducted in 1997. Soil borings were taken to characterize the nature and extent of the waste and incorporated into the corrective measures work plan, which proposed corrective action at the SWMUs to include excavating the waste materials.

Voluntary corrective measures began, but were suspended after the discovery of unexploded ordnance (UXO) in the landfill. The ordnance was confirmed inert by explosive ordnance disposal (EOD) personnel. A review of federal and state regulations and Army policies followed EOD determinations. The findings of the review were included in a letter report that provided recommendations for completing the project including screening the excavated material for ordnance and other prohibited material prior to transportation to the permitted landfill. Corrective measures were completed in early 2002. All buried debris was removed from the landfill. A VCM report was submitted to the NMED in 2004. In a letter dated June 18, 2006, NMED concurred with the finding of the VCM report and stated that based on the information in the report, it appeared that WSMR had completed corrective action at the landfill. NMED also stated in the letter that no further investigation pertaining to the landfills and the SWMUs are eligible for a NFA determination.

In September 2008 a PBA was awarded, to achieve approval of a CAC petition.

A CAC petition was submitted to NMED in March 2010 and revised CAC petition was submitted in January 2011 adding two additional sites to the petition. The NMED determined the petition to be administratively incomplete in October 2011 requiring removing SWMUs 47 and 48 from the petition because release assessment for this SMWU is required in Table 8-2 of the RCRA permit. WSMR determined that because investigation and corrective action activities have been completed at these SWMUs and because the NMED concurred that the SWMUs are eligible for a NFA determination, the requirements for a release assessment have been met. The revised CAC petition was submitted to NMED on July 3, 2013. The NMED issued an administratively complete determination of the CAC petition on Feb. 3, 2014 stating that they will now initiate a technical review of the submittal.

The objective at WSMR-71 is to complete the required CAC efforts.

CLEANUP/EXIT STRATEGY

WSMR will complete the CAC petition requirements. NMED review of the CAC petition is expected to be completed in FY15.

Site ID: WSMR-72
Site Name: ABAND DISPOSAL TRENCH AT NEW COMMIS
Alias: SWMU 163

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Other (lead)

Media of Concern: Soil

Phases	Start	End
RFA	199409	199410
CS	199410	199410
RFI/CMS	199410	201707
IRA	199410	199410

RIP Date: N/A

RC Date: 201707

SITE DESCRIPTION

WSMR-72 was an abandoned landfill discovered during the construction of the new main post Commissary in 1994. The dates of operation are estimated to have been between 1946 and 1952.

WSMR-72 is included in the WSMR PBA contract. The contractor will achieve approval of the CAC petition for the site by June 2011. No future costs are anticipated.

The debris from the landfill was excavated and placed in 82 roll-off bins and sampled. Seven of the bins were determined to contain high levels of lead and were sent to a hazardous waste landfill. The debris from the other 75 bins was disposed in the Main Post Landfill (MPL). In addition, soil samples were collected from the sidewall and base of the excavated trench and split with the NMED personnel. Analytical results indicated no constituents present above Subpart S action limits.

This site was formerly an AOC but the NMED listed it as SWMU 163 in the 1999 AUA.

A Class III permit modification is required to remove this site from the HSWA corrective action module of the RCRA Part B permit.

WSMR-72 is listed in Appendix 4 of the December 2009 WSMR RCRA Part B permit requiring corrective action. WSMR-72 is included in the WSMR PBA contract to achieve a CAC petition for the site.

The site was petitioned for CAC without controls in July 2012. NMED responded with an administratively incomplete determination in October 2012. WSMR submitted a revised CAC without controls on Jan. 25, 2013. The revised CAC without controls is currently under NMED review.

The CAC to achieve RC at the site is being completed under the current RFI/CMS phase.

CLEANUP/EXIT STRATEGY

WSMR will complete the CAC petition requirements. NMED review of the CAC petition is expected to be completed in FY15.

Site ID: WSMR-73
Site Name: WASTE UNDERGROUND INJECTION PIPE
Alias: SMWU-17

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Other (TPH, Solvents)

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199205	201707

RIP Date: N/A

RC Date: 201707

SITE DESCRIPTION

WSMR-73 (SWMU 17) was the suspected site of a former underground injection pipe located at the southwest corner of Building 1753, the Heavy Equipment Maintenance Shop. No information was available on the dates of operation, physical parameters, or depth of burial. According to the RFA, this pipe was placed in the ground in a vertical position allowing for liquid wastes (e.g., waste oils and degreasing solvents) to be poured into the open end.

During the Phase I RFI (1992), a soil vapor survey (SVS) was performed which detected only carbon dioxide at near background levels. In an attempt to locate the pipe, a metal detector was used. The pipe was suspected to have been located despite some subsurface interference.

During the Phase II RFI (1994), soil sampling and an SVS were conducted at the suspected pipe location as described in the Phase I RFI. The survey and sampling did not reveal evidence of contamination from the former injection pipe and could not confirm that the pipe ever existed. It was determined that further RA was not necessary and that a Class III permit modification should be completed.

A Class III permit modification petition for NFA was submitted on Jan. 24, 2000 for this and several other sites. A public meeting was held on Feb. 23, 2000 to solicit public comment concerning the Class III permit modification as part of the final RCRA Expanded Public Participation Rule (40 CFR 270.2). The public did not provide comments on this site.

The state disapproved the petition in March 2002 and requested additional investigation including background metals study, CS, and an ecological risk assessment. This investigation recommenced in FY03 and was slated to be completed by FY06. The WSMR submitted a Phase III RFI work plan (BAE, 2004c) dated June 2004. The work plan covered WSMR-30 plus 10 additional IRP sites which were also disapproved in the March 2002 letter. The sites were all funded under WSMR-30 beginning in FY05. This work is referred to as the main post Phase III RFI since all sites are within the main post cantonment area.

The NMED submitted a NOD (dated Nov. 15, 2004) including a total of 10 comments requiring a WSMR response. The WSMR's response addressed these comments and the work plan was executed in FY05. The final RFI report was submitted and reviewed by the NMED.

The NMED submitted a NOD (dated Dec. 8, 2006) with six comments. Additionally, the NMED expressed reservations with conclusions of a soil background study conducted under the CC program. This study was used in supporting conclusions and recommendations included in the Phase III RFI final report. Discussions between the WSMR and the NMED are ongoing. The WSMR is preparing a response to the NMED December 2006 comments received; furthermore, in a Jan. 24, 2007 letter, the NMED stated that several sites covered under the Phase III RFI could be eligible for "NFA with controls" in place.

WSMR-73 is listed in Appendix 4 of the December 2009 WSMR RCRA Part B permit requiring corrective action. WSMR-73 is included in the WSMR PBA contract to achieve approval of the CAC petition for the site.

A background study was completed and approved by the NMED in June 2013. Based on the findings of the background study, the site was petitioned for CAC with controls to NMED in June 2013. NMED disapproved the CAC petition requiring additional investigation work.

Site ID: WSMR-73
Site Name: WASTE UNDERGROUND INJECTION PIPE
Alias: SMWU-17

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting additional investigation work based on the NMED petition disapproval.

Site ID: WSMR-75
Site Name: RHODES CANYON SUBGRADE ASPHALT TANKS (3)
Alias: SMU116-118

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	199005	199209
RFI/CMS	199205	201402
DES	201403	201605
IRA	199305	199306
CMI(C)	201606	201806

RIP Date: N/A

RC Date: 201806

SITE DESCRIPTION

WSMR-75 (SWMU 116), were three steel tanks centrally located within the WSMR, approximately 60 miles north of the WSMR main post near the intersection of Range Road 6 and 7. The tanks were partially below grade, with a capacity of 2, 500 gallons and believe to have been used for oil or fuel storage. The tanks and an unknown quantity of soil are believed to have been removed in 1994. Currently, the site is a flat open area away from existing building situated southwest.

A RFA was completed in 1988 and noted the three 2,500-gallon steel tanks were approximately 15 to 20 years old. The tanks appeared to be empty and abandoned although a slight hydrocarbon odor was detected during the visual site inspection (VSI). The RFA indicated that the tanks were likely used to store fuel or oil. The possibility of a release was rated as moderate based on the lack of release controls and the inground location of the tanks. No previous site investigation was performed at the site and there is no indication that soil sampling was performed as part of the tank removal.
This SWMU is included in Table 8-2 of the WSMR 2009 hazardous waste permit requiring corrective action work plan submittal by July 1, 2013.

A PBA was issued in June 2010, to achieve CAC.

In order to determine a CAC determination, a RFI was completed. The results of the investigation at SWMU 116 indicated that VOCs, SVOCs, and target analyte list (TAL) metals have not been released to the surface or subsurface soils at levels above NMED screening levels. However, TPH-diesel range organics (DRO) is present at concentrations that exceeded the residential and industrial SSLs. The RFI recommended that an ACA of limited soil removal be performed. The RFI was submitted to the NMED in January 2013. In Feb. 2014 WSMR received a NOD for the RFI report. The NOD required WSMR to submit an ACA work plan. WSMR to submit an ACA work plan. NMED approved the ACA work plan in a letter dated Aug. 18, 2014.

The objective at WSMR-75 is to complete ACA measures at the site as determined by the ACA work plan.

CLEANUP/EXIT STRATEGY

WSMR will conduct soil removal actions per the NMED approved ACA work plan.

Site ID: WSMR-77
Site Name: VET & MCAFFEE CLINIC INCINERATORS
Alias: SWMU 125

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199102	201706
IRA	199102	199108

RIP Date: N/A

RC Date: 201706

SITE DESCRIPTION

WSMR-77 was a Stamco gas-fired incinerator that was formerly used to destroy clinical wastes generated at the veterinary clinic. The exact start-up date is not known; however, the unit was deactivated in 1986. The vet clinic was located in Building T-1834 on the WSMR main post. The overall size of the unit was approximately 3 ft by 5 ft by 2 ft mounted on a 6-inch concrete slab. Waste is now collected by a contractor and disposed off-range.

The RFA found no indication that hazardous wastes were managed and recommended NFA at the site. The incinerator was removed after deactivation in 1986.

WSMR-77 is listed in Appendix 8 of the December 2009 WSMR RCRA Part B permit requiring corrective action. WSMR-77 is included in the WSMR PBA contract with the contractor to achieve approval of the CAC petition for the site.

WSMR submitted an RFI work plan in February 2011. Based on NMED's disapproval WSMR submitted a revised work plan in Nov. 2011. The NMED approved the work plan with modifications in June 2012. Following completion of the fieldwork WSMR submitted a RFI report in January 2013. NMED approved the RFI report on Feb. 17, 2014. No additional corrective action is being required and WSMR anticipates submitting a Class III CAC petition to NMED.

CLEANUP/EXIT STRATEGY

WSMR will petition for CAC without controls based on the NMED approval of the RFI.

Site ID: WSMR-78
Site Name: SWMUs 147 and 23-26
Alias: SWMU-147

STATUS

Regulatory Driver: RCRA

RRSE: MEDIUM

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

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	199408	199410
RFI/CMS	199410	201710
IRA	199608	199608

RIP Date: N/A

RC Date: 201710

SITE DESCRIPTION

WSMR-78 (SWMU 147) was a decontamination pad and underground holding tank located adjacent to the southeast corner of HELSTF Building 26131. This site began operation in 1982. The unit reportedly consisted of a 3 ft by 5 ft by 6.5 ft deep underground waste tank with an open top that was covered with a grate and a steel cover. Wastewater/debris from the decontamination pad flowed down the drain and into a sump prior to entering the tank. The pad was used occasionally for cleaning large pieces of equipment that could not be cleaned inside Building 26131.

This site includes SWMU 23-Old Hazardous Waste Tank, SWMU 24-Old Hazardous Waste Tank, SWMU 25-Waste Accumulation Area, SWMU 26-Vapor Recovery Unit in the HELSTF area identified in the 2009 RCRA permit as requiring additional investigation. These SWMUs include spill and accumulation areas.

The Phase II RFI (Sverdrup, 1994) determined that there was no decontamination pad underground waste tank, for which this SWMU 147 was created. Historical drawings documented that the underground tank was actually an aboveground tank and the only remaining unit was the sump. Results of the RFI determined that no release of contaminants had occurred at this site.

The decontamination pad waste underground tank was not identified in either of the two RFAs reported in 1988. As a consequence, this site was not part of the initial HSWA operating permit issued Sept. 29, 1989. In January 1996, confirmatory soil samples were collected from beneath the sump. Analysis revealed the soil beneath the tank to be nonhazardous. The sump was subsequently filled with concrete for closure in place. Drummed liquids and sludge waste were disposed off-site (Dow, 1997).

On Jan. 24, 2000, a Class III permit modification NFA petition was submitted.

The state disapproved the petition in March 2002 and requested an additional investigation including an ecological risk assessment.

A HELSTF Phase III RFI commenced in FY03 to address all HELSTF sites under one comprehensive study. The Phase III RFI includes a comprehensive data review, further data collection (groundwater sampling) and an ecological risk assessment. The work includes IRP sites WSMR-52, WSMR-53, WSMR-54, WSMR-55, WSMR-78 and WSMR-83, as well as various sites currently under the CC program.

The Phase III work plan was submitted to NMED in September 2005. The NMED submitted comments on the work plan in July 2006. The WSMR responded in August 2006 with the commitment that the work plan would be revised in response to the NMED comments; however, the WSMR requested the fieldwork commence in September 2006, with the understanding that official work plan approval would follow. The NMED agreed. The WSMR submitted the revised work plan in January 2007 and the NMED approved it in January 2007.

The original Phase III report was submitted to the NMED in February 2008. Per the NMED's NOD, a revised Phase III RFI report was submitted to the NMED in September 2009. NMED responded with a second NOD to the revised RFI report. WSMR submitted a second revision to the Phase III RFI report in August 2010. WSMR received a third NOD on the Phase III RFI report in March 2012. The report is currently under a third revision. The findings of the Phase III RFI showed that achieving a CAC with

controls is warranted.

CLEANUP/EXIT STRATEGY

WSMR anticipates achieving CAC with controls upon completion and approval of the Phase III RFI report.

Site ID: WSMR-79
Site Name: HEAVY EQPT WASHPAD & DRAIN @ BLDG 1736
Alias: SWMU-16

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Other (TPH, Solvents)

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	199206	199212
RFI/CMS	199206	201707

RIP Date: N/A

RC Date: 201707

SITE DESCRIPTION

WSMR-79 is a heavy equipment wash pad (SWMU 16) located in the southern section of the main post, west of Building 1736. The unit has been active since the 1960s. The heavy-equipment vehicle maintenance shop is located west of this site. The wash pad area is a 50-ft by 40-ft concrete pad that slopes towards the center where a grate-covered drain is located. A curb rims the south end of the concrete pad. This pad is entirely edged by gravel. The drain discharges into an asphalt-lined drainage ditch located immediately to the south of the unit and runs east for approximately 545 ft.

The facility was identified in the 1988 RFA and included in the Phase I (1992) and Phase II (1994) RFIs. Soil and sediment sampling detected metals below applicable screening action levels. An elevated TPH concentration (above the NM standard of 1,000 ppm) was attributed to the asphalt lining the drainage ditch. An SVS did not detect target VOCs. In comments to the Phase II RFI, the NMED recommended removing the site from the HSWA corrective action permit.

A Class III permit modification petition for NFA was submitted on Jan. 24, 2000 for this and several other sites. A public meeting was held on Feb. 23, 2000 to solicit public comment concerning the Class III permit modification as part of the final RCRA Expanded Public Participation Rule (40 CFR 270.2). The public did not provide comments on this site.

The state disapproved the petition in March 2002. The state requested additional investigation including background metals study, confirmation sampling, and ecological risk assessment. This investigation recommenced in FY03 and is slated to be completed by FY06. The WSMR submitted a Phase III RFI work plan dated June 2004. The work plan covered WSMR-30 plus 10 additional IRP sites which were also disapproved in the March 2002 letter. The sites were all funded under WSMR-30 beginning in FY05. This work is referred to as the Main Post Phase III RFI since all sites are within the main post cantonment area.

The NMED submitted a NOD (dated Nov. 15, 2004) including a total of 10 comments requiring a WSMR response. The WSMR's response addressed these comments and the work plan was executed in FY05. The final RFI report was submitted and reviewed by NMED. The NMED submitted a NOD (dated Dec. 8, 2006) with six comments. Additionally, the NMED expressed reservations with conclusions of a soil background study conducted under the CC program. This study was used in supporting conclusions and recommendations included in the Phase III RFI final report. Discussions between the WSMR and the NMED are ongoing. The WSMR is preparing a response to the NMED's December 2006 comments received; furthermore, in a Jan. 24, 2007 letter, the NMED stated that several sites covered under the Phase III RFI could be eligible for "NFA with controls" in place.

WSMR-79 is listed in Appendix 4 of the December 2009 WSMR RCRA Part B permit requiring corrective action. WSMR-79 is included in the WSMR PBA contract to achieve a CAC petition for the site.

A background study was completed and approved by the NMED in June 2013. Based on the findings of the background study, the site was petitioned for CAC with controls to NMED in June 2013. NMED disapproved the CAC petition requiring additional historical information and potentially additional investigation work.

Site ID: WSMR-79
Site Name: HEAVY EQPT WASHPAD & DRAIN @ BLDG 1736
Alias: SWMU-16

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting additional investigation work based on the NMED CAC petition disapproval.

Site ID: WSMR-81
Site Name: MAIN POST SANITARY LANDFILL
Alias: SWMU-86

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199306	201707

RIP Date: N/A

RC Date: 201707

SITE DESCRIPTION

WSMR-81 addresses SWMU 86 which is the inactive sanitary portions of the MPL. The MPL was registered with the NMED in April 1982 and at that time contained three disposal pits containing residential refuse or municipal solid waste (MSW), dead animals, and construction and demolition (C&D) debris. The landfill has been in operation since 1983. The MPL covers an area of approximately 82.9 acres, although only approximately 38.6 acres have actually been utilized to dispose of waste material. The MPL ceased receiving MSW in 1996, and now only accepts C&D waste. Based on these dates MPL qualifies as a Category 3 landfill as defined by 20.9.2.7.L(1) NM Administrative Code. All waste cells at MPL are unlined and a leachate collection system was not installed. The immediate area around MPL is undeveloped, with the exception of the scrap yard (metal recycling facility) to the south. The main post STP is located 0.7 mile west by southwest and the main post headquarters, including residential area, is located approximately three miles west-by-northwest of MPL.

Groundwater monitoring activities began in 1996 with installation of four monitor wells and five quarters of sampling to establish background concentrations. Following development of background, groundwater monitoring has been conducted since 2000. Depth to groundwater in the area of MPL is approximately 180 to 200 ft bgs. Monitoring for methane, previously conducted on a quarterly basis with negative results, has been suspended.

In December 2008, WSMR submitted the Closure and Post-Closure Care Plan for the Municipal and Asbestos Areas of the Main Post Landfill to the NMED Solid Waste Bureau (SWB). The NMED SWB responded in November 2009 with its approval of the MPL with conditions. In October 2010 WSMR issued a contract for the closure of the landfill areas in accordance with the closure plan. The landfill cover was completed in March 2011.

Although the solid waste requirements are being met, requirements by the HWB for closing a SWMU must also be met. WSMR-81 is listed in Appendix 4 of the December 2009 WSMR RCRA Part B permit requiring corrective action.

WSMR submitted an RFI work plan to NMED in March 2011. Based on NMED's November 2011 NOD on the work plan, WSMR submitted a revised work plan in April 2012. NMED approved the plan with modifications in June 2012. The RFI report was submitted in March 2013 and was approved in October 2014 with modifications. Continued groundwater monitoring is required and will be conducted under the ongoing monitoring at SWMU82 (CCWS-62).

WSMR anticipates petitioning for CAC with controls. WSMR will implement controls such as groundwater monitoring, fencing, and site inspections if required by the state.

CLEANUP/EXIT STRATEGY

WSMR anticipates petitioning for CAC with controls based on the NMED RFI approval.

Site ID: WSMR-82
Site Name: MAIN POST CONSTRUCTION LANDFILL
Alias: SWMU-87

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
RFA	198805	198808
CS	198805	198808
RFI/CMS	199602	201606

RIP Date: N/A

RC Date: 201606

SITE DESCRIPTION

WSMR-82 (SWMU 87) is located approximately 2 miles east of the main post area. This landfill is just one distinct area of the MPL. The unit is approximately 300 ft long and 20-30 ft high. WSMR filed an application for registration of the unit with the NMED in March 1982. A certificate of registration was issued by NMED in April 1982. The expected life of the unit is 50 years. This unit received construction debris from various locations on main post.

A RFA was conducted in 1988 that suggested a low release potential to soil/groundwater, surface water, air, and subsurface gas. According to the RFA NFA is suggested. In 1995, a study called Demonstration for Groundwater Monitoring Suspension Request, demonstrated that no potential exists for groundwater to be contaminated by constituents discharged from the MPL. The findings demonstrate that no migration of hazardous constituents can occur from the MPL to the uppermost aquifer during the post-closure care period of 30 years. Groundwater monitoring began in 1996 with the installation of four monitoring wells and five quarters of sampling to establish background concentrations. Following development of the background data set, periodic groundwater monitoring has been conducted since 2000. Depth to groundwater in the area of the MPL is approximately 180-200 ft. Monitoring for methane, previously conducted on a quarterly basis with no detection of methane had been suspended.

In 1997 WSMR conducted a delineation study to provide additional hydrologic information regarding the possible source area and extend of cyanide contamination first identified during the MPL groundwater monitoring event. To supplement the existing groundwater data six additional monitoring wells were installed both upgradient and downgradient of the MPL. This study eliminated the MPL as the source for cyanide contamination in the area. The data to date indicate no other hazardous contaminants of concern are present in the groundwater.

WSMR continues to submit annual groundwater monitoring reports to the NMED Hazardous Waste Bureau. Based on NMED correspondence, if VOCs are not detected, the Permittee may discontinue sampling for VOCs during subsequent groundwater sampling events.

This SWMU is included in the 2009 hazardous waste permit for WSMR and included in Table 4-1 requiring corrective action.

In Dec. 2008 WSMR submitted the Closure and Post-Closure Care Plan for the Municipal and Asbestos Areas of the Main Post Landfill to the NMED SWB. NMED SWB responded in November 2009 with its approval of the MPL with conditions. In October 2010 WSMR issued a contract for the closure of the landfill areas in accordance with the closure plan. The landfill cover was completed in March 2011 and is currently under post closure care activities.

A PBA was issued in June 2010 to achieve a RFI at the site.

WSMR submitted a RFI work plan to NMED in March 2011. In Nov. 2011, NMED submitted an NOD on the work plan. WSMR responded with response to comments and a revised work plan in April 2012. In June 2012 NMED approved with modifications the revised work plan. The RFI report was submitted in March 2013 and was approved in October 2014 with modifications. Continued groundwater monitoring is required and will be conducted under the ongoing monitoring at SWMU 82(CCWS-62).

WSMR anticipates petitioning for CAC with controls. WSMR will implement controls such as groundwater monitoring, fencing, and site inspections if required by the state.

Site ID: WSMR-82
Site Name: MAIN POST CONSTRUCTION LANDFILL
Alias: SWMU-87

CLEANUP/EXIT STRATEGY

WSMR anticipates petitioning for CAC with controls based on the NMED RFI approval.

Site ID: WSMR-83
Site Name: Equip Storage Area & MAR Waste Pond
Alias: 141/148

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	198905	199410
RFI/CMS	199205	201710

RIP Date: N/A

RC Date: 201710

SITE DESCRIPTION

WSMR-83 was the Multi-Function Array Radar Waste Stabilization Pond (SWMU 148) that was used to treat sanitary waste in the 1960s. The site was an unlined surface impoundment with dimensions of approximately 110 ft by 130 ft by 7 ft. SWMU 148 was backfilled and paved in the early-1980s, and is located at the south end of the current HELSTF Equipment Storage Area (SWMU141).

No evidence of release was detected from this site during the Phase I (IT Corp., 1992) or Phase II (Sverdrup, 1994) RFI. The Phase II recommended a Class III permit modification.

The USEPA, Region VI, approved a Class III permit modification dated Dec. 31, 1995 for NFA at SWMU 141. A Class III permit modification NFA petition was submitted on Jan. 24, 2000 to the NMED. The state disapproved the petition in March 2002 and requested additional investigation including an ecological risk assessment. Any future LTM requirements will be programmed under WSMR-55.

A HELSTF Phase III RFI commenced in FY03 to address all HELSTF sites under one comprehensive study. The Phase III RFI includes a comprehensive data review, further data collection (groundwater sampling) and an ecological risk assessment. The work includes IRP sites WSMR-52, WSMR-53, WSMR-54, WSMR-55, WSMR-78 and WSMR-83, as well as various sites currently under the CC program.

The Phase III work plan was submitted to the NMED in September 2005. The NMED submitted comments on the work plan in July 2006. The WSMR responded in August 2006 with the commitment that the work plan would be revised in response to the NMED comments; however, the WSMR requested the fieldwork commence in September 2006, with the understanding that official work plan approval would follow. The NMED agreed. The WSMR submitted the revised work plan in January 2007 and the NMED approved it that same month.

The original Phase III report was submitted to the NMED in February 2008. Per the NMED's NOD, a revised Phase III RFI report was submitted to the NMED in September 2009. NMED responded with another NOD to the revised RFI report. WSMR submitted a second revision to the Phase III RFI report in August 2010. WSMR received a third NOD on the report in March 2012. The Phase III RFI report is currently under a third revision. The findings of the Phase III RFI showed that achieving a CAC with controls is warranted.

CLEANUP/EXIT STRATEGY

WSMR anticipates achieving CAC with controls upon completion and approval of the Phase III RFI report.

Site ID: WSMR-84
Site Name: FORMER LC-37 PAINT DUMP
Alias: SWMU-140

STATUS

Regulatory Driver: RCRA

RRSE: MEDIUM

Contaminants of Concern: Metals, Other (Organics, Solvents)

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
CS	198907	199210
RFI/CMS	199205	201703
IRA	199505	199602

RIP Date: N/A

RC Date: 201703

SITE DESCRIPTION

WSMR-84 (SWMU 140) was a paint dump area located approximately 12 miles east of the main post. This site consisted of a 10 ft by 30 ft by 8 ft open trench, containing paint and solvent cans, construction debris, 55-gallon drums, and wire. A berm exists on the north side of the trench to divert run-on water. The site is currently closed and the dates of usage are unknown.

SWMU 140 was not included in the initial RFA; however, the site was investigated under the Phase I RFI and Phase II RFI. Based on results of the RFI sampling, no release of constituents hazardous to human health or the environment occurred.

Unidentifiable drums and debris were sampled and analyzed prior to removal. Upon characterization of debris, construction materials were recovered for recycling, wood material was disposed in the WSMR landfill, metal was taken to the WSMR salvage yard, and paint and solvents were shipped to an authorized incinerator. Following debris removal from the trench, six soil samples were collected from the trench floor for hazard characterization. All samples collected at the site were characterized as nonhazardous.

A Class III permit modification petition for NFA was submitted on Jan. 24, 2000 for this and several other sites. A public meeting was held on Feb. 23, 2000 to solicit public comment concerning the Class III permit modification as part of the final RCRA Expanded Public Participation Rule (40 CFR 270.2). The public did not provide comments on this site.

The state disapproved the petition in March 2002 and requested additional investigation including background metals study, CS, and an ecological risk assessment. This investigation recommenced in FY03 and is slated to be completed by FY06. The WSMR submitted a Phase III RFI work plan (BAE, 2004c) dated June 2004. The work plan covered WSMR-30 plus 10 additional IRP sites which were also disapproved in the March 2002 letter. The sites were all funded under WSMR-30 beginning in FY05. This work is referred to as the Main Post Phase III RFI since all sites are within the main post cantonment area.

The NMED submitted a NOD (dated Nov. 15, 2004) including a total of 10 comments requiring a WSMR response. The WSMR's response addressed these comments and the work plan was executed in FY05. The final RFI report was submitted and reviewed by the NMED. The NMED submitted a NOD (dated Dec. 8, 2006) with six comments. Additionally, the NMED expressed reservations with conclusions of a soil background study conducted under the CC program. This study was used in supporting conclusions and recommendations included in the Phase III RFI final report. Discussions between the WSMR and the NMED are ongoing. The WSMR is preparing a response to the NMED's December 2006 comments received. Furthermore, in a Jan. 24, 2007 letter, the NMED stated that several sites covered under the Phase III RFI could be eligible for "NFA with controls" in place.

WSMR-84 is listed in Appendix 4 of the December 2009 WSMR RCRA Part B permit requiring corrective action.

WSMR-84 was included in the WSMR PBA contract to achieve approval of the CAC petition for the site. A background study was completed and approved by the NMED in June 2013. Based on the findings of the background study, the site was petitioned for CAC with controls to NMED in June 2013. NMED disapproved the CAC petition requiring additional information. WSMR resubmitted a revised CAC petition in September 2014 which is currently under NMED review.

Site ID: WSMR-84
Site Name: FORMER LC-37 PAINT DUMP
Alias: SWMU-140

CLEANUP/EXIT STRATEGY

WSMRs strategy is to complete the requirements for a Class III Permit Modification to change the status of the site from requiring corrective action to CAC.

Site ID: WSMR-85
Site Name: WASTE OIL ACCUM BLDG 26121 HELSTF
Alias: SWMU 37

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198805	198808
RFI/CMS	199103	201710

RIP Date: N/A

RC Date: 201710

SITE DESCRIPTION

WSMR-85 (SWMU 37) is located in Building 26121 at the HELSTF. The waste is collected in drums prior to pick up and delivered to the waste oil tank. The drums are under a roof and stored on a concrete pad. Building 26121 was built in 1963 and as of 1988 waste oil has been collected at this site since 1982. Waste oil from HELSTF vehicles and equipment are managed at this unit. There are no documented releases associated with this site. Building 26121 is still in use as the heavy equipment maintenance building and that all waste oil generated during maintenance is stored inside the building within a secondary containment structure.

It is identified in the 2009 RCRA permit as requiring additional investigation.

The original Phase III report was submitted to the NMED in February 2008. Per the NMED's NOD, a revised Phase III RFI report was submitted to the NMED in September 2009. NMED responded with another NOD to the revised RFI report. WSMR submitted a second revision to the Phase III RFI report in August 2010. WSMR received a third NOD on the report in March 2012. The Phase III RFI report is currently under a third revision. The findings of the Phase III RFI showed that achieving a CAC with controls is warranted.

Although the site was included in the HELSTF Phase III RFI, the site is currently active.

CLEANUP/EXIT STRATEGY

WSMR anticipates achieving CAC with controls upon completion and approval of the Phase III RFI report.

Site ID: WSMR-86
Site Name: Lance Missile Impact Site
Alias: SWMU-168

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Other (Propellant)

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	200003	200003
RFI/CMS	200203	201703

RIP Date: N/A

RC Date: 201703

SITE DESCRIPTION

WSMR-86 (SWMU 168) is located within the White Sands National Monument (WSNM) near Lake Lucero on property managed by the National Park Service (NPS). On Dec. 14, 1999, a Lance Missile launched from WSMR impacted within WSNM. Propellant used in the Lance Missile included unsymmetrical dimethyl hydrazine (UDMH) and inhibited red fuming nitric acid (IRFNA). The missile penetrated the ground surface and exposed the water table at approximately 3ft bgs. The impact created a crater approximately 18 ft in diameter and 5 ft deep. The NMED has designated the Lance impact site as SWMU 168.

An initial assessment of the impact was conducted on Dec. 16, 1999 by the EOD team members to provide a quick visual and chemical assessment of the impact site for baseline conditions. Soil and water samples were collected. The analysis indicated a small amount of contamination from the impact. The initial site visit concluded that the missile must be below the surface of the water table possibly with the propellant tanks intact.

On Jan. 26, 2000, six soil and three water samples were collected and four additional soil samples from the edge of the crater at the four compass points. Two background soil samples were collected as well as one water background samples. Two water samples from the crater were also collected. The IRFNA was detected in soil samples from the background and edge of the crater. It was also detected in background water samples and the crater samples. Another follow-on sampling event was completed on Feb. 28, 2000. No contaminants were detected in any soil samples and only n-nitrodimethylamine (DMN) was detected in water. On March 16, 2000 a follow-on assessment recovery team inspected the site. Calculations of the physics of the missile flight it was concluded that the missile could not be intact and it could be no deeper than 23 ft. This indicated that most of the missile debris is not deep and contamination release happened at the surface. An RFI conducted in November 2002 concluded that because of the remoteness of the site potential adverse effects are lessened. It was also concluded that the site does not pose health risks to humans.

This SWMU is included in the 2009 hazardous waste permit for WSMR and included in Table 4-1, requiring corrective action.

A CAC petition was submitted January 2011; NMED determined the document to be administratively incomplete in October 2011. A revised CAC petition was submitted in July 2013. The revised CAC is currently under NMED review.

The CAC petition without controls is being captured under the current RFI/CMS phase.

CLEANUP/EXIT STRATEGY

WSMR will complete the CAC petition requirements.

Site ID: WSMR-87
Site Name: Multifunction Array Radar Dump Site
Alias: SWMU 150

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198805	198808
RFI/CMS	200203	201710

RIP Date: N/A

RC Date: 201710

SITE DESCRIPTION

WSMR-87 (SWMU 150) is located at the HELSTF located about 16 miles on US Highway 70 east of the main post. The site was located in an open field at HELSTF. The site consisted of an open trench measuring about 225 ft by 35 ft by 8 ft. The unit is inactive and had been utilized in the 1960s. The trench was partially filled with what was thought to be building debris and old paint materials.

In January 1997, a close-out report was prepared for the NMED. It stated that previous soil samples from borings in the trench were found to contain metals. Sample results indicated the levels of barium, lead, mercury, and silver all exceeded toxicity characteristic (TC) levels, but not to the extent that production of leachate or significant migration would be expected. The remedial strategy for the site was to generically identify and remove the contents of the open trench, to determine through sampling is the soil below the debris was contaminated and if so excavate the contaminated soil. On Feb. 7, 1996 eight confirmatory samples were collected from below the excavation. All samples tested as nonhazardous. The materials from the trench were then transported to the WSMR industrial landfill on April 9, 1996. On April 18, 1996 the SWMU 150 area was graded to blend with the existing terrain and hydroseeded. Based on the results of the report it was warranted that WSMR apply for closure of this site.

A petition for removal from the RCRA permit was submitted in 1996 but rejected in 2002 due to the lack of an RFI. A RFI was initiated in 2002. Supplemental sampling and a risk assessment were completed and a revised Phase III RFI was submitted in September 2008. This SWMU was included with as part of the HELSTF Phase III RFI. A HELSTF Phase III RFI began in FY03 to address all HELSTF sites under one comprehensive study. The Phase III RFI includes a comprehensive data review, further data collection (groundwater sampling) and an ecological risk assessment. The work includes various IRP sites as well as various sites currently under the CC program.

The Phase III work plan was submitted to NMED in September 2005. The NMED submitted comments on the work plan in July 2006. The WSMR responded in August 2006 with the commitment that the work plan would be revised in response to the NMED comments; however, the WSMR requested the fieldwork commence in September 2006, with the understanding that the official work plan approval would follow. The NMED agreed. The WSMR submitted the revised work plan in January 2007 and the NMED approved it in January 2007. The final Phase III report was submitted in 2007.

This SWMU is included in the 2009 hazardous waste permit for WSMR requiring corrective action.

The original Phase III report was submitted to the NMED in February 2008. Per the NMED's NOD, a revised Phase III RFI report was submitted to the NMED in September 2009. NMED responded with another NOD to the revised RFI report. WSMR submitted a second revision to the Phase III RFI report in August 2010. WSMR received a third NOD on the report in March 2012. The Phase III RFI report is currently under a third revision. The findings of the Phase III RFI showed that achieving a CAC with controls is warranted.

CLEANUP/EXIT STRATEGY

WSMR anticipates achieving CAC with controls upon completion and approval of the Phase III RFI report.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
PBA@WSMR	PBA@WSMR	201310	All CLINs were awarded.
WSMR-01	YONDER IMPACT AREA	199707	Erroneous DSERTS Entry
WSMR-02	RED RIO MUNITION DISPOSAL AREA(PITS	199707	Active RCRA Subpart X Unit with RCRA Closure; moved to CCWS-06.
WSMR-03	OSCURA MUNITION DISPOSAL AREA	199707	RCRA Subpart X unit with RCRA Closure; still active
WSMR-04	OSCURA RANGE IMPACT AREA	199707	Active Impact Area/Range
WSMR-08	PISTOL/RIFLE RANGE	199707	Active Firing Range
WSMR-09	NUC EFFECTS REACTOR FACILITY PONDS	200609	NFA Letter Dated Nov. 29, 2006
WSMR-11	LIQ PROPELLANT EVAP/NEUT PITS (10)	199608	Site covered under CCWS-71
WSMR-12	OB/OD DISPOSAL PITS HAZ TEST AREA	199707	RCRA Subpart X Permit; Moved to CCWS-11
WSMR-13	TRINITY SITE	199707	National Historic Landmark Monitored by White Sands Radiation Protection
WSMR-15	FORMER HAZARDOUS WASTE LANDFILL	199009	Landfill underwent RCRA Closure with USEPA
WSMR-17	SEWAGE TREATMENT PLANT MAIN POST	199707	Active Sewage Treatment Plant
WSMR-18	FLOWER AREA BURIAL SITE	199707	Erroneous DSERTS Entry
WSMR-19	BURIAL SITE NORTH OF ARMY BLOCKHOUS	199707	Erroneous DSERTS Entry
WSMR-20	BOMBLET BURIAL SITE	199707	Inactive UXO Site Covered Under CCWS-65
WSMR-23	TULA PEAK BURIAL PITS	199707	Inactive UXO Site Covered Under CCWS-65
WSMR-24	TULA PEAK BURIAL SITE INCINERATOR	199608	USEPA Region VI approved a Class III Permit Modification dated Dec. 31, 1995. Covered Under CCWS-65
WSMR-34	TTF HDPE-LINED LAGOON (REMOVED)	199707	USEPA Region VI approved a Class III Permit Modification dated Dec. 31, 1995
WSMR-36	FORMER WASTE/OIL TANK&SUMP EAST BLG 1794	200709	The NMED letter dated Jan. 24, 2007
WSMR-37	HWSF EVAP TANK	199512	RCRA Closure the NMED approved NFA June 13, 2003
WSMR-42	STP DISCHARGE SITE @ PLAYA LAKE	201403	TBD
WSMR-44	HELSTF STP LAGOONS (PONDS 1-4)	199707	Covered under CCWS-79
WSMR-45	HELSTF STP DRY POND	199707	Covered under CCWS-03
WSMR-46	HELSTF SEPTIC SYSTEMS (3)	199707	Active Units Regulated by the New Mexico Environment Department's Construction Industries Division Class III Modification by USEPA in 1995
WSMR-47	HELSTF LSTC WASTEWATER DISCHARGE	199707	Covered under CCWS-02
WSMR-48	HELSTF CLEANING FACILITY SUMP	199707	SWMU-142 was moved AEDB-CC and then back to AEDB-R as CCWS-05 when DERP eligibility changed.
WSMR-52	FORMER HELSTF LANDFILL	200606	Erroneous entry, not eligible for ER,A funding. Now covered in CC Program under CCWS-75
WSMR-61	FORMER MAIN POST LANDFILL #3 (SCRAP	200709	Erroneous entry, not eligible for ER,A funding. Now covered in CC Program under CCWS-76.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
WSMR-62	FORMER STP PERCOLATION DITCHES (2)	200712	SWMU-82 transferred to AEDB-CC as site CCWS-62
WSMR-66	STALLION RANGE CENTER FORMER FFTA	199707	Erroneous DSERTS Entry/Not Included in the Hazardous and Solid Waste Amendment Permit
WSMR-68	SEWAGE LAGOONS @ STALLION RANGE CENTER	199707	Active Site Regulated by the NMGWQB
WSMR-69	SEPTIC TANK/DRAINFIELD @ RHODES CANYON	201403	TBD
WSMR-74	FORMER WST OIL TANK/SUMP @ BLDG 1778	201312	Active site
WSMR-76	OROGRANDE WASTE STABILIZATION POND	199707	Active Site Regulated by the New Mexico Groundwater Quality Bureau
WSMR-80	STEAM WASHPAD,DRAIN,OIL/H2O SEP @ 1	199707	Active Site Ineligible for Inclusion in the IRP

IRP Schedule

Date of IRP Inception: 197901

Past Phase Completion Milestones

1979

CS	(WSMR-08 - PISTOL/RIFLE RANGE, WSMR-18 - FLOWER AREA BURIAL SITE, WSMR-19 - BURIAL SITE NORTH OF ARMY BLOCKHOUS, WSMR-66 - STALLION RANGE CENTER FORMER FFTA)
RFA	(WSMR-08 - PISTOL/RIFLE RANGE, WSMR-15 - FORMER HAZARDOUS WASTE LANDFILL, WSMR-18 - FLOWER AREA BURIAL SITE, WSMR-19 - BURIAL SITE NORTH OF ARMY BLOCKHOUS, WSMR-66 - STALLION RANGE CENTER FORMER FFTA)
SI	(WSMR-01 - YONDER IMPACT AREA, WSMR-13 - TRINITY SITE)
PA	(WSMR-01 - YONDER IMPACT AREA, WSMR-13 - TRINITY SITE)

1988

PA	(WSMR-04 - OSCURA RANGE IMPACT AREA, WSMR-12 - OB/OD DISPOSAL PITS HAZ TEST AREA)
RFA	(PBA@WSMR - PBA@WSMR, WSMR-02 - RED RIO MUNITION DISPOSAL AREA(PITS, WSMR-03 - OSCURA MUNITION DISPOSAL AREA, WSMR-11 - LIQ PROPELLANT EVAP/NEUT PITS (10), WSMR-14 - FORMER RHODES CANYON LANDFILLS, WSMR-17 - SEWAGE TREATMENT PLANT MAIN POST, WSMR-20 - BOMBLET BURIAL SITE, WSMR-23 - TULA PEAK BURIAL PITS, WSMR-24 - TULA PEAK BURIAL SITE INCINERATOR, WSMR-27 - FORMER ACID NEUT UNIT @ HWSF LDING , WSMR-29 - STP DRYING BEDS (MAIN POST), WSMR-30 - STP SLUDGE WASTE PILE (MAIN POST), WSMR-31 - MAIN POST FORMER FFTA & PIT, WSMR-32 - MAIN POST FORMER FFTA WASTE PILE, WSMR-33 - USED BATTERY ACCUM AREAS (MAIN POST), WSMR-34 - TTF HDPE-LINED LAGOON (REMOVED), WSMR-35 - Storage Tank at Temp Test Facility, WSMR-36 - FORMER WASTE/OIL TANK&SUMP EAST BLG 1794, WSMR-37 - HWSF EVAP TANK, WSMR-39 - FORMER MAIN POST LANDFILL 1A, WSMR-40 - FORMER MAIN POST LANDFILL 2A, WSMR-41 - VE Well at TTF, WSMR-42 - STP DISCHARGE SITE @ PLAYA LAKE, WSMR-43 - CHEMICAL WASTE TANKS (Former), WSMR-44 - HELSTF STP LAGOONS (PONDS 1-4), WSMR-45 - HELSTF STP DRY POND, WSMR-46 - HELSTF SEPTIC SYSTEMS (3), WSMR-47 - HELSTF LSTC WASTEWATER DISCHARGE, WSMR-48 - HELSTF CLEANING FACILITY SUMP, WSMR-49 - HELSTF HOLDING TANKS (Fluorspar), WSMR-50 - SWMUs 35-36 and AOC-V, WSMR-52 - FORMER HELSTF LANDFILL , WSMR-53 - HELSTF TEST CELL LAGOONS, WSMR-54 - HELSTF STORAGE YARD CHROMATE SPILL, WSMR-55 - HELSTF SYSTEMIC DIESEL SPILL, WSMR-56 - PAINT SHOP SUMP, WSMR-57 - FORMER GOLF COURSE PESTICIDE STG SHED, WSMR-58 - VANDAL BURIAL SITE, WSMR-59 - FORMER SEWAGE TREATMENT PLT(IMHOFF , WSMR-60 - WASH RAMP & DRAIN/SUMP EAST OF BLDG 1778, WSMR-61 - FORMER MAIN POST LANDFILL #3 (SCRAP, WSMR-62 - FORMER STP PERCOLATION DITCHES (2), WSMR-67 - STALLION ASPHALT TANKS, WSMR-68 - SEWAGE LAGOONS @ STALLION RANGE CENTER, WSMR-69 - SEPTIC TANK/DRAINFIELD @ RHODES CANYON, WSMR-70 - FORMER LANDFILL @ STALLION RANGE CENTER, WSMR-71 - FORMER NORTH OSCURA PEAK LANDFILL, WSMR-73 - WASTE UNDERGROUND INJECTION PIPE, WSMR-74 - FORMER WST OIL TANK/SUMP @ BLDG 1778, WSMR-75 - RHODES CANYON SUBGRADE ASPHALT TANKS (3), WSMR-76 - OROGRANDE WASTE STABILIZATION POND, WSMR-77 - VET & MCAFFEE CLINIC INCINERATORS, WSMR-78 - SWMUs 147 and 23-26, WSMR-79 - HEAVY EQPT WASHPAD & DRAIN @ BLDG 1736, WSMR-80 - STEAM WASHPAD,DRAIN,OIL/H2O SEP @ 1, WSMR-81 - MAIN POST SANITARY LANDFILL, WSMR-82 - MAIN POST CONSTRUCTION LANDFILL, WSMR-83 - Equip Storage Area & MAR Waste Pond, WSMR-84 - FORMER LC-37 PAINT DUMP, WSMR-85 - WASTE OIL ACCUM BLDG 26121 HELSTF, WSMR-87 - Multifunction Array Radar Dump Site)
RFI/CMS	(WSMR-34 - TTF HDPE-LINED LAGOON (REMOVED))
IRA	(WSMR-34 - TTF HDPE-LINED LAGOON (REMOVED))
CS	(WSMR-17 - SEWAGE TREATMENT PLANT MAIN POST, WSMR-24 - TULA PEAK BURIAL SITE INCINERATOR, WSMR-27 - FORMER ACID NEUT UNIT @ HWSF LDING , WSMR-29 - STP DRYING BEDS (MAIN POST), WSMR-30 - STP SLUDGE WASTE PILE (MAIN POST), WSMR-31 - MAIN POST FORMER FFTA & PIT, WSMR-32 - MAIN POST FORMER FFTA WASTE PILE, WSMR-33 - USED BATTERY ACCUM AREAS (MAIN POST), WSMR-34 - TTF HDPE-LINED LAGOON (REMOVED), WSMR-35 - Storage Tank at Temp Test Facility, WSMR-36 - FORMER WASTE/OIL TANK&SUMP EAST BLG 1794, WSMR-37 - HWSF EVAP TANK, WSMR-41 - VE Well at TTF, WSMR-42 - STP DISCHARGE SITE @ PLAYA LAKE, WSMR-43 - CHEMICAL WASTE TANKS (Former), WSMR-44 - HELSTF STP LAGOONS (PONDS 1-4), WSMR-45 - HELSTF STP DRY POND, WSMR-46 - HELSTF SEPTIC SYSTEMS (3), WSMR-47 - HELSTF LSTC WASTEWATER DISCHARGE, WSMR-49 - HELSTF HOLDING TANKS (Fluorspar), WSMR-50 - SWMUs 35-

	36 and AOC-V, WSMR-52 - FORMER HELSTF LANDFILL , WSMR-53 - HELSTF TEST CELL LAGOONS, WSMR-54 - HELSTF STORAGE YARD CHROMATE SPILL, WSMR-55 - HELSTF SYSTEMIC DIESEL SPILL, WSMR-57 - FORMER GOLF COURSE PESTICIDE STG SHED, WSMR-58 - VANDAL BURIAL SITE, WSMR-59 - FORMER SEWAGE TREATMENT PLT(IMHOFF , WSMR-60 - WASH RAMP & DRAIN/SUMP EAST OF BLDG 1778, WSMR-61 - FORMER MAIN POST LANDFILL #3 (SCRAP, WSMR-62 - FORMER STP PERCOLATION DITCHES (2), WSMR-67 - STALLION ASPHALT TANKS, WSMR-68 - SEWAGE LAGOONS @ STALLION RANGE CENTER, WSMR-70 - FORMER LANDFILL @ STALLION RANGE CENTER, WSMR-71 - FORMER NORTH OSCURA PEAK LANDFILL, WSMR-73 - WASTE UNDERGROUND INJECTION PIPE, WSMR-77 - VET & MCAFFEE CLINIC INCINERATORS, WSMR-81 - MAIN POST SANITARY LANDFILL, WSMR-82 - MAIN POST CONSTRUCTION LANDFILL)
1989	
IRA	(WSMR-50 - SWMUs 35-36 and AOC-V)
1990	
CS	(WSMR-74 - FORMER WST OIL TANK/SUMP @ BLDG 1778)
IRA	(WSMR-74 - FORMER WST OIL TANK/SUMP @ BLDG 1778)
CMI(C)	(WSMR-15 - FORMER HAZARDOUS WASTE LANDFILL)
1991	
IRA	(WSMR-77 - VET & MCAFFEE CLINIC INCINERATORS)
1992	
CS	(WSMR-75 - RHODES CANYON SUBGRADE ASPHALT TANKS (3), WSMR-76 - OROGRANDE WASTE STABILIZATION POND)
RFI/CMS	(WSMR-37 - HWSF EVAP TANK, WSMR-68 - SEWAGE LAGOONS @ STALLION RANGE CENTER)
1993	
RFI/CMS	(WSMR-76 - OROGRANDE WASTE STABILIZATION POND)
IRA	(WSMR-67 - STALLION ASPHALT TANKS, WSMR-75 - RHODES CANYON SUBGRADE ASPHALT TANKS (3))
CMI(C)	(WSMR-34 - TTF HDPE-LINED LAGOON (REMOVED))
CS	(WSMR-79 - HEAVY EQPT WASHPAD & DRAIN @ BLDG 1736, WSMR-80 - STEAM WASHPAD,DRAIN,OIL/H2O SEP @ 1, WSMR-84 - FORMER LC-37 PAINT DUMP)
1994	
RFI/CMS	(WSMR-24 - TULA PEAK BURIAL SITE INCINERATOR)
CS	(WSMR-11 - LIQ PROPELLANT EVAP/NEUT PITS (10), WSMR-23 - TULA PEAK BURIAL PITS)
1995	
CMI(C)	(WSMR-23 - TULA PEAK BURIAL PITS)
RFI/CMS	(WSMR-11 - LIQ PROPELLANT EVAP/NEUT PITS (10), WSMR-17 - SEWAGE TREATMENT PLANT MAIN POST, WSMR-20 - BOMBLET BURIAL SITE, WSMR-23 - TULA PEAK BURIAL PITS, WSMR-45 - HELSTF STP DRY POND, WSMR-80 - STEAM WASHPAD,DRAIN,OIL/H2O SEP @ 1)
RFA	(WSMR-72 - ABAND DISPOSAL TRENCH AT NEW COMMIS)
SI	(WSMR-12 - OB/OD DISPOSAL PITS HAZ TEST AREA)
DES	(WSMR-11 - LIQ PROPELLANT EVAP/NEUT PITS (10))
IRA	(WSMR-29 - STP DRYING BEDS (MAIN POST), WSMR-30 - STP SLUDGE WASTE PILE (MAIN POST), WSMR-41 - VE Well at TTF, WSMR-57 - FORMER GOLF COURSE PESTICIDE STG SHED, WSMR-72 - ABAND DISPOSAL TRENCH AT NEW COMMIS)
CS	(WSMR-72 - ABAND DISPOSAL TRENCH AT NEW COMMIS, WSMR-78 - SWMUs 147 and 23-26, WSMR-83 - Equip Storage Area & MAR Waste Pond)
1996	
RI/FS	(WSMR-12 - OB/OD DISPOSAL PITS HAZ TEST AREA)
IRA	(WSMR-31 - MAIN POST FORMER FFTA & PIT, WSMR-36 - FORMER WASTE/OIL TANK&SUMP EAST BLG

	1794, WSMR-53 - HELSTF TEST CELL LAGOONS, WSMR-58 - VANDAL BURIAL SITE, WSMR-78 - SWMUs 147 and 23-26, WSMR-84 - FORMER LC-37 PAINT DUMP)
CMI(C)	(WSMR-11 - LIQ PROPELLANT EVAP/NEUT PITS (10), WSMR-20 - BOMBLET BURIAL SITE)
1997	
IRA	(WSMR-33 - USED BATTERY ACCUM AREAS (MAIN POST))
RFA	(WSMR-05 - FORMER OSCURA RANGE CENTERLANDFILLS, WSMR-09 - NUC EFFECTS REACTOR FACILITY PONDS)
RFI/CMS	(WSMR-44 - HELSTF STP LAGOONS (PONDS 1-4), WSMR-46 - HELSTF SEPTIC SYSTEMS (3), WSMR-47 - HELSTF LSTC WASTEWATER DISCHARGE, WSMR-48 - HELSTF CLEANING FACILITY SUMP)
1998	
RFI/CMS	(WSMR-09 - NUC EFFECTS REACTOR FACILITY PONDS)
1999	
IRA	(WSMR-54 - HELSTF STORAGE YARD CHROMATE SPILL)
DES	(WSMR-09 - NUC EFFECTS REACTOR FACILITY PONDS)
2000	
RFA	(WSMR-86 - Lance Missile Impact Site)
2004	
RFI/CMS	(WSMR-14 - FORMER RHODES CANYON LANDFILLS)
IRA	(WSMR-71 - FORMER NORTH OSCURA PEAK LANDFILL)
CMI(C)	(WSMR-14 - FORMER RHODES CANYON LANDFILLS)
2006	
IRA	(WSMR-32 - MAIN POST FORMER FFTA WASTE PILE)
RFI/CMS	(WSMR-52 - FORMER HELSTF LANDFILL)
CMI(C)	(WSMR-09 - NUC EFFECTS REACTOR FACILITY PONDS)
2007	
RFI/CMS	(WSMR-36 - FORMER WASTE/OIL TANK&SUMP EAST BLG 1794, WSMR-61 - FORMER MAIN POST LANDFILL #3 (SCRAP)
IRA	(WSMR-55 - HELSTF SYSTEMIC DIESEL SPILL)
2008	
IRA	(WSMR-05 - FORMER OSCURA RANGE CENTERLANDFILLS)
2009	
CMI(C)	(PBA@WSMR - PBA@WSMR)
RFI/CMS	(PBA@WSMR - PBA@WSMR)
DES	(PBA@WSMR - PBA@WSMR)
2014	
RFI/CMS	(WSMR-42 - STP DISCHARGE SITE @ PLAYA LAKE, WSMR-69 - SEPTIC TANK/DRAINFIELD @ RHODES CANYON, WSMR-74 - FORMER WST OIL TANK/SUMP @ BLDG 1778, WSMR-75 - RHODES CANYON SUBGRADE ASPHALT TANKS (3))
CMI(O)	(PBA@WSMR - PBA@WSMR)
IRA	(WSMR-27 - FORMER ACID NEUT UNIT @ HWSF LDING)

Projected Phase Completion Milestones

See attached schedule

IRP Schedule

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

Site ID	Site Name	ROD/DD Title	ROD/DD Date
WSMR-32	MAIN POST FORMER FFTA WASTE PILE	WSMR-32 DD	20160930

Final RA(C) Completion Date: 201806

Schedule for Next Five-Year Review: 2019

Estimated Completion Date of IRP at Installation (including LTM phase): 203109

WHITE SANDS MISSILE RANGE IRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
WSMR-05	FORMER OSCURA RANGE CENTERLANDFILLS	RFI/CMS						
WSMR-14	FORMER RHODES CANYON LANDFILLS	LTM						
WSMR-27	FORMER ACID NEUT UNIT @ HWSF LDING	RFI/CMS						
WSMR-29	STP DRYING BEDS (MAIN POST)	RFI/CMS						
WSMR-30	STP SLUDGE WASTE PILE (MAIN POST)	RFI/CMS						
WSMR-31	MAIN POST FORMER FFTA & PIT	RFI/CMS						
WSMR-32	MAIN POST FORMER FFTA WASTE PILE	RFI/CMS						
WSMR-33	USED BATTERY ACCUM AREAS (MAIN POST)	RFI/CMS						
WSMR-35	Storage Tank at Temp Test Facility	RFI/CMS						
WSMR-39	FORMER MAIN POST LANDFILL 1A	RFI/CMS						
WSMR-40	FORMER MAIN POST LANDFILL 2A	RFI/CMS						
WSMR-41	VE Well at TTF	RFI/CMS						
WSMR-43	CHEMICAL WASTE TANKS (Former)	RFI/CMS						
WSMR-49	HELSTF HOLDING TANKS (Fluorspar)	RFI/CMS						
WSMR-50	SWMUs 35-36 and AOC-V	RFI/CMS						
WSMR-53	HELSTF TEST CELL LAGOONS	RFI/CMS						
WSMR-54	HELSTF STORAGE YARD CHROMATE SPILL	RFI/CMS						
WSMR-55	HELSTF SYSTEMIC DIESEL SPILL	RFI/CMS						
WSMR-56	PAINT SHOP SUMP	RFI/CMS						
WSMR-57	FORMER GOLF COURSE PESTICIDE STG SHED	RFI/CMS						
WSMR-58	VANDAL BURIAL SITE	RFI/CMS						

WHITE SANDS MISSILE RANGE IRP Schedule

SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
WSMR-59	FORMER SEWAGE TREATMENT PLT(IMHOFF	RFI/CMS						
WSMR-60	WASH RAMP & DRAIN/SUMP EAST OF BLDG 1778	RFI/CMS						
WSMR-67	STALLION ASPHALT TANKS	RFI/CMS						
WSMR-70	FORMER LANDFILL @ STALLION RANGE CENTER	RFI/CMS						
WSMR-71	FORMER NORTH OSCURA PEAK LANDFILL	RFI/CMS						
WSMR-72	ABAND DISPOSAL TRENCH AT NEW COMMIS	RFI/CMS						
WSMR-73	WASTE UNDERGROUND INJECTION PIPE	RFI/CMS						
WSMR-75	RHODES CANYON SUBGRADE ASPHALT TANKS (3)	DES						
		CMI(C)						
WSMR-77	VET & MCAFFEE CLINIC INCINERATORS	RFI/CMS						
WSMR-78	SWMUs 147 and 23-26	RFI/CMS						
WSMR-79	HEAVY EQPT WASHPAD & DRAIN @ BLDG 1736	RFI/CMS						
WSMR-81	MAIN POST SANITARY LANDFILL	RFI/CMS						
WSMR-82	MAIN POST CONSTRUCTION LANDFILL	RFI/CMS						
WSMR-83	Equip Storage Area & MAR Waste Pond	RFI/CMS						
WSMR-84	FORMER LC-37 PAINT DUMP	RFI/CMS						
WSMR-85	WASTE OIL ACCUM BLDG 26121 HELSTF	RFI/CMS						
WSMR-86	Lance Missile Impact Site	RFI/CMS						
WSMR-87	Multifunction Array Radar Dump Site	RFI/CMS						

WHITE SANDS MISSILE RANGE

Army Defense Environmental Restoration Program
Military Munitions Response Program

MMRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 7/3

Installation Site Types with Future and/or Underway Phases

3 Firing Range
(WSMR-003-R-01, WSMR-004-R-01, WSMR-006-R-01)

1 Unexploded Munitions/Ordnance
(WSMR-007-R-01)

Most Widespread Contaminants of Concern

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

Media of Concern

Groundwater, Soil

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

Site ID	Site Name	Action	Remedy	FY
N/A				

Duration of MMRP

Date of MMRP Inception 200205

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201804/201804

Date of MMRP completion including Long Term Management (LTM): 201804

MMRP Contamination Assessment

Contamination Assessment Overview

The Military Munitions Response Program (MMRP) was established in 2001 to manage the environmental, health and safety issues presented by UXO, discarded military munitions (DMM), and MC. The MMRP is an element of the DERP, under which the Secretary of Defense carries out environmental restoration resulting from historical activities. The DERP, through the IRP, had historically focused on cleaning up sites contaminated with hazardous components, including explosives, but generally has not addressed either UXO or challenges presented by sites containing DMM and MC.

The DoD established the MMRP to reflect the statutory program goals established for the DERP, to enhance understanding of the nature of munitions response sites (MRS), and to manage response activities more effectively. On Dec. 29, 2008, the Office of the Deputy Under Secretary of Defense for Installations and Environment, ODUSD (I&E), issued an interim policy for DERP eligibility that rescinded the 2002 eligibility cutoff date for the MMRP. Areas that operated after FY02 are now eligible for DERP funding.

The Army has completed a comprehensive inventory of its nonoperational training ranges and defense sites with UXO, DMM or MC contamination that will provide critical environmental data and help determine the eligibility of training sites for the MMRP. Information pertaining to WSMR is contained in the Final Closed, Transferred or Transferring (CTT) Inventory Report dated November 2002. In this report, six WSMR sites are identified and described: four sites within and two sites outside the current WSMR boundaries. The final CTT inventory report serves as WSMR's MMRP PA pursuant to an April 29, 2004 Assistant Chief of Staff for Installation Management (ACSIM) memorandum.

The final historical records review (HRR) was completed in September 2007. Two of the six sites initially identified in the CTT inventory report were determined to be eligible for the Formerly Used Defense Sites (FUDS) program, and therefore are ineligible for the MMRP.

Cleanup Exit Strategy

Of the six MMRP sites at WSMR, only two sites (WSMR-001-R-01 and WSMR-002-R-01) are expected to require institutional controls; however, they are expected to be moved to the FUDS program. The remaining four sites are expected to require waste removal (soil/debris). The Ramah Ranch site is not included in the CTT Inventory. The SRC, Main Post Wastewater Treatment Plan (WWTP) and Main Cantonment sites are listed in WSMR's RCRA Part B permit where investigations will follow the WSMR RCRA permit requirements.

MMRP Previous Studies

	Title	Author	Date
2004			
	Final CTT Inventory Report	TechLaw, Inc.	APR-2004
2007			
	Final Historical Records Review, White Sands Missile Range, New Mexico, Military Munitions Response Program	U.S. Army Corps of Engineers, Sacramento District	SEP-2007
2010			
	Site Inspection Report	URS Group, Inc.	SEP-2010
2011			
	Ramah Ranch Response Site Remedial Investigation and Interim Removal Action Work Plan	Bristol Environmental Remediation Services, L.L.C.	DEC-2011
2012			
	Ramah Ranch Munitions Response Site Remedial Investigation and Interim Removal Action Work Plan Addendum	Bristol Environmental Remediation Services, L.L.C.	JUL-2012
2013			
	Final Report Ramah Ranch Munition Response Site Remedial Investigation and Interim Removal Action	Bristol Environmental Remediation Services, L.L.C.	APR-2013
	Work Plan RCRA Facility Investigation Main Cantonment Area (AOC AD), Main Post Wastewater Treatment Plant (AOC AB), and Stallion Range Center Cantonment Area (AOC AA)	Bristol Environmental Remediation Services, L.L.C.	MAY-2013

WHITE SANDS MISSILE RANGE

Military Munitions Response Program

Site Descriptions

Site ID: WSMR-003-R-01
Site Name: Stallion Range Center Cantonment Ar
Alias: AOC AA

STATUS

Regulatory Driver: RCRA

MRSPP Score: No known or suspected hazard

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	200205	200305
CS	200606	201006
RFI/CMS	201101	201804

RIP Date: N/A

RC Date: 201804

SITE DESCRIPTION

The SRC Cantonment Area MRS was identified as the Alamogordo Bombing Range MRS in the CTT inventory report but has been renamed since the MRS encompasses the WSMR SRC. This MRS is located within the boundary of the historical Alamogordo Bombing and Gunnery Range (ABGR). The ABGR was created on Jan. 20, 1942 by Executive Order 9029. The bombing and gunnery range was assigned to the Alamogordo Army Airfield (AAF) (now Holloman AFB) and was used for bombing and air-to-air gunnery training of B-17, B-24, and B-29 aircraft crews. This range is located approximately 115 miles north of the main post. The range was used between 1942 and 1945 by practicing pilots. There are no known UXO responses in this area.

According to the September 2007 final HRR, MEC and MC are suspected at this site.

An SI was conducted in August 2008 to determine the presence or absence of MEC and MC. The SI did not determine the full extent of contamination at a site or conduct a risk assessment. No MEC has been reported and none were observed during the SI. No samples exceeded the established screening criteria for metals and no explosives were detected; however, due to the presence of military debris on the ground surface, further investigation of MEC is recommended for the SRC MRS. Because the site is listed in WSMR's RCRA Part B permit, further investigations will follow the WSMR RCRA permit requirements. WSMR is working with the US Army Corps of Engineers (USACE) to complete the RFI phase at SRC. Because evidence of solid rocket propellant is limited to the northeastern portion of the MRS, the southern and western areas are recommended for NFA for both MEC and MC.

A contract was issued in 2011 to achieve a RFI at this site. RFI work is currently in progress.

An RFI work plan for AOC AA was submitted to NMED on May 28, 2013 and approved by the NMED in August 2013. Fieldwork was completed in December 2013. A RFI report was submitted to NMED in February 2015 and is currently under NMED review.

CLEANUP/EXIT STRATEGY

WSMR anticipates achieving CAC upon completion and approval of the RFI.

Site ID: WSMR-004-R-01
Site Name: Main Post Wastewater Treatment Plan
Alias: AOC AB

STATUS

Regulatory Driver: RCRA

MRSPP Score: No known or suspected hazard

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	200205	200305
CS	200606	201006
RFI/CMS	201101	201804

RIP Date: N/A

RC Date: 201804

SITE DESCRIPTION

The CTT inventory report identified the Sewage Lagoon MRS as 166 acres. During the HRR process, WSMR renamed this MRS the MPWWTP. The boundary coincided with the operational munitions storage area southeast of the main post area. This MRS lies within the northern boundary of the previously discussed three-inch anti-aircraft artillery (AAA) range that was located at Camp Beasley and used from approximately 1940 to 1942. A review of the available records (1999 to 2006) from the EOD unit assigned to WSMR did not identify any response actions associated with munitions from the Camp Beasley AAA range activities.

During the HRR, WSMR revised the operational range boundary through the established Army process to include the operational munitions storage area into the operational range. Therefore, this area is ineligible for the MMRP since it is now part of the operational range. In conjunction with including this area in the operational range, 11 acres surrounding the STP southeast of the main post area were removed from the operational range, making this area eligible for the MMRP due to potential impacts by the same historical ranges that impacted the Sewage Lagoon MRS. In conjunction with the operational range changes, this MRS was renamed the MPWWTP MRS.

Potential MEC in the MPWWTP MRS include three-inch AAA rounds from the Camp Beasley AAA range. Potential MC includes tetryl, black powder, trinitrotoluene (TNT), flashless nonhygroscopic powder, mercury fulminate, antimony sulfide, and potassium chlorate.

The MPWWTP MRS is adjacent to the IRP site designated as SWMU 80. This site was a waste pile consisting of soil, sludge, and rubble that was created following a flash flood in 1978 that destroyed the sludge beds (SWMU 79) from the installation STP. Sludge, excavated soils, and sludge bed debris (e.g., reinforced concrete) were washed from the original sludge bed location and relocated approximately 100 ft to the southeast of the STP sludge beds active as of 2002. The pile was approximately 50 to 75 ft long with heights varying from 2 to 6 ft.

A Phase III RFI collected soil samples at SWMU 80, including one boring within the MPWWTP MRS boundary. Analysis was conducted for the RCRA metals. None of the RCRA metals considered to be MC (i.e., lead and cadmium) were detected above their respective NMED SSLs. The RFI report recommended NFA for SWMU 80. This recommendation is pending the NMED approval.

According to the September 2007 final HRR, MEC and MC are suspected at this site.

An SI was conducted in August 2008 to determine the presence or absence of MEC and MC. The SI did not determine the full extent of contamination at a site or conduct a risk assessment. No MEC or munitions debris have been reported and none were observed during the SI. No samples exceeded the established screening criteria for metals and no explosives were detected.

The remedial investigation (RI) phase is recommended at the MPWWTP MRS. Because the site is listed in WSMR's RCRA Part B permit; further investigations will follow the WSMR permit requirements. WSMR is working with the USACE to complete the RFI phase at the MPWWTP.

A contract was issued in 2011 to achieve a RFI at this site.

Site ID: WSMR-004-R-01
Site Name: Main Post Wastewater Treatment Plan
Alias: AOC AB

A RFI work plan for AOC AB was submitted to NMED on May 28, 2013 and approved by the NMED in August 2013. Fieldwork was completed in December 2013. A RFI report was submitted to NMED in February 2015 and is currently under NMED review.

CLEANUP/EXIT STRATEGY

WSMR anticipates achieving CAC upon completion and approval of the RFI.

Site ID: WSMR-006-R-01
Site Name: MAIN CANTONMENT AREA
Alias: AOC AD

STATUS

Regulatory Driver: RCRA

MRSPP Score: No known or suspected hazard

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	200205	200305
CS	200606	201006
RFI/CMS	201101	201804

RIP Date: N/A

RC Date: 201804

SITE DESCRIPTION

The WSMR Main Cantonment Area MRS lies within the boundary of the three-inch AAA range that was located at Camp Beasley and used from approximately 1940 to 1942. The Main Cantonment Area MRS is located in the far northwestern area of the historical AAA range boundary.

The WSMR headquarters, as well as numerous administrative buildings, maintenance facilities, recreation facilities, residential areas, and a school, are located within the Main Cantonment Area MRS. A review of the available records (1999 to 2006) from the EOD unit assigned to WSMR did not identify any response actions associated with munitions from the Camp Beasley AAA range activities. During the HRR process, WSMR implemented changes to the operational range boundary as documented in a Sept. 6, 2007 WSMR memorandum. These changes increased the size of the Main Cantonment Area MRS from 1,528 acres, as reported in the CTT inventory report, to 1,687 acres.

Potential MEC in the Main Cantonment Area MRS include three-inch AAA rounds from the Camp Beasley AAA range. Potential MC includes tetryl, black powder, TNT, flashless nonhygroscopic powder, mercury fulminate, antimony sulfide, and potassium chlorate.

There are no known UXO responses in this area.

According to the September 2007 final HRR, MEC and MC are suspected at this site.

An SI was conducted in Aug. 2008 to determine the presence or absence of MEC and MC. The SI did not determine the full extent of contamination at a site or conduct a risk assessment. No MEC or munitions debris have been reported and none were observed during the SI. No samples exceeded the established screening criteria for metals and no explosives were detected.

Because the site is listed in WSMR's RCRA Part B permit, further investigations will be required and will be conducted pursuant to the RCRA permit requirements. WSMR is working with the USACE to complete the RFI phase for WSMR-006-R-01

A contract was issued in 2011 to achieve a RFI at this site.

An RFI work plan for AOC AD was submitted to NMED on May 28, 2013 and approved by the NMED in August 2013. Fieldwork was completed in December 2013. A RFI report was submitted to NMED in February 2015 and is currently under NMED review.

CLEANUP/EXIT STRATEGY

WSMR anticipates achieving CAC upon completion and approval of the RFI.

Site ID: WSMR-007-R-01
Site Name: RAMAH RANCH
Alias: None

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 06

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

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	200205	200305
SI	200606	200909
RI/FS	200910	201609

RIP Date: N/A

RC Date: 201609

SITE DESCRIPTION

The Ramah Ranch MRS (formerly identified as the Bartlett Ranch MRS) is a transferred MRS comprised of 5,150 acres, located on private property approximately 300 miles northwest of the main post area of WSMR. Rocket propellant of an unknown origin was recovered from this site in 2006. The site is not an established area used for rocket testing and the propellant release is considered an isolated incident.

According to the September 2007 final HRR, MEC and MC are suspected at this site.

An SI was conducted in August 2008 to determine the presence or absence of MEC and MC. The SI did not determine the full extent of contamination at a site or conduct a risk assessment. MEC has been previously reported but no MEC or munitions debris was observed during the SI. No samples exceeded the established screening criteria for metals or perchlorate. The SI recommendation for MEC is to further investigate via an RI. NFA was indicated for MC based on the SI results; however, MC may require further evaluation during the RI.

WSMR contracted a RI through the USACE to complete the RI phase at the Ramah Ranch Site. The Ramah Ranch MRS RI and IRA was completed in May 2012. The RI report was provided to participating stakeholders in May 2013. The RI report is currently under review by the stakeholders (i.e. USEPA and NMED)

The NMED called for Ramah Ranch to be added to the RCRA permit. WSMR is contensting the idea that the site needs to be included in the RCRA permit and WSMR will completed all cleanup actions under the CERCLA process.

CLEANUP/EXIT STRATEGY

WSMR anticipates achieving property project close out upon completion and approval of the RI report.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
WSMR-001-R-01	ATHENA BOOSTER DROP ZONE 1	200705	WSMR FUDS [Confirmation of Removal of Athena BDZs]
WSMR-002-R-01	ATHENA BOOSTER DROP ZONE 2	200705	WSMR FUDS [Confirmation of Removal of Athena BDZs]
WSMR-005-R-01	CONDRON FIELD	201401	Operational Range

MMRP Schedule

Date of MMRP Inception 200205

Past Phase Completion Milestones

2003	
PA	(WSMR-001-R-01 - ATHENA BOOSTER DROP ZONE 1, WSMR-002-R-01 - ATHENA BOOSTER DROP ZONE 2, WSMR-007-R-01 - RAMAH RANCH)
RFA	(WSMR-003-R-01 - Stallion Range Center Cantonment Ar, WSMR-004-R-01 - Main Post Wastewater Treatment Plan, WSMR-005-R-01 - CONDRON FIELD, WSMR-006-R-01 - MAIN CANTONMENT AREA)
2009	
SI	(WSMR-007-R-01 - RAMAH RANCH)
2010	
CS	(WSMR-003-R-01 - Stallion Range Center Cantonment Ar, WSMR-004-R-01 - Main Post Wastewater Treatment Plan, WSMR-005-R-01 - CONDRON FIELD, WSMR-006-R-01 - MAIN CANTONMENT AREA)
2014	
RFI/CMS	(WSMR-005-R-01 - CONDRON FIELD)

Projected Phase Completion Milestones

See attached schedule

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

To Be Determined

Final RA(C) Completion Date:

Schedule for Next Five-Year Review: 2019

Estimated Completion Date of MMRP at Installation (including LTM phase): 201804

WHITE SANDS MISSILE RANGE MMRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
WSMR-003-R-01	Stallion Range Center Cantonment Ar	RFI/CMS						
WSMR-004-R-01	Main Post Wastewater Treatment Plan	RFI/CMS						
WSMR-006-R-01	MAIN CANTONMENT AREA	RFI/CMS						
WSMR-007-R-01	RAMAH RANCH	RI/FS						

WHITE SANDS MISSILE RANGE

Army Defense Environmental Restoration Program
Compliance Restoration

CR Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 28/6

Installation Site Types with Future and/or Underway Phases

1 Contaminated Soil Piles
(CCWS-90)
1 Disposal Pit/Dry Well
(CCWS-101)
1 Fire/Crash Training Area
(CCWS-04)
1 Open Burn
(CCWS-102)
5 Spill Site Area
(CCWS-05, CCWS-09, CCWS-16, CCWS-81, CCWS-93)
7 Storage Area
(CCWS-84, CCWS-85, CCWS-86, CCWS-88, CCWS-94, CCWS-95, CCWS-96)
1 Surface Impoundment/Lagoon
(CCWS-100)
4 Underground Storage Tank
(CCWS-08, CCWS-91, CCWS-92, CCWS-98)
1 Washrack
(CCWS-99)

Most Widespread Contaminants of Concern

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

Media of Concern

Groundwater, Soil

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

Site ID	Site Name	Action	Remedy	FY
CCWS-08	AMRAD UST SITE	IRA	REMOVAL	2004
CCWS-16	HELSTF TSA Gasoline Spill Site	IRA	SOIL VAPOR EXTRACTION	2004

Duration of CR

Date of CR Inception: 198805

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 202105/204709

Date of CR completion including Long Term Management (LTM): 202105

CR Contamination Assessment

Contamination Assessment Overview

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

The WSMR submitted a RCRA Part A permit application after the New Mexico Hazardous Waste Management Regulations were published on May 19, 1980. The permit included the waste management activities at the cleaning facility, located at the HELSTF, located 18.5 miles northeast of the main post. Through negotiations with the New Mexico Environmental Improvement Division, Hazardous Waste Section, the final design was approved and incorporated into the RCRA Part A permit on Jan. 30, 1984 (Pache, 1984).

Cleanup Exit Strategy

The RFI will be completed and a CAC petition for NFA will be submitted.

CR Previous Studies

	Title	Author	Date
2009			
	RCRA Facility Investigation Work Plan for the Main Post POL Storage Site	ARCADIS, U.S., Inc.	JUN-2009
	RCRA Facility Investigation Work Plan for the Main Post POL Storage Site	ARCADIS, U.S., Inc.	JUN-2009
	RCRA Facillity Investigation Work Plan, Stallion Range Center Former Firefighter Training Area, SWMU 162	ARCADIS, U.S., Inc.	AUG-2009
2010			
	Revised RCRA Facility Investigation Work Plan for the Main Post POL Storage Site (CCWS-77)	ARCADIS, U.S., Inc.	FEB-2010
	RCRA Facility Investigation Report for the Stallion Range Center Former Firefighter Training Area (SWMU 162)	ARCADIS, U.S., Inc	AUG-2010
	Second Revised Phase III RCRA Facility Investigation Report - HELSTF Sites	ARCADIS, U.S., Inc.	AUG-2010
	RCRA Facility Investigation Report for the Main Post POL AST Release Site SWMU 219 (CCWS-77)	ARCADIS, U.S., Inc	SEP-2010
2011			
	Petition to Perform Class III Modifications to Change the Status of SWMUs 19, 47, 48, 63, 64, 108, 157, 158, 159, 164, 167, 168 and 198 from Corrective Action Required to CAC or CAC with Controls	ARCADIS, U.S., Inc.	JAN-2011
	Status Report for the High Energy Laser System Test Facility Technical Support Area Gasoline Spill Site SWMU 197 (CCWS-16)	ARCADIS, U.S., Inc.	MAR-2011
	Revised RCRA Facility Investigation Report for the Main Post POL AST Release Site SWMU 219 (CCWS-77)	ARCADIS, U.S., Inc.	MAY-2011
	Revised RCRA Facility Investigation Report for the Stallion Range Center Former Firefighter Training Area SWMU 162 (CCWS-04)	ARCADIS, U.S., Inc.	JUN-2011

WHITE SANDS MISSILE RANGE

Compliance Restoration

Site Descriptions

Site ID: CCWS-04
Site Name: STALLION RANGE CENTER FORMER FFTA
Alias: SWMU-162

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	199701	199704
CS	199701	199704
RFI/CMS	200810	201703

RIP Date: N/A

RC Date: 201703

SITE DESCRIPTION

CCWS-04 (SWMU 162), is the FFTA at SRC. The exact dates of use of the area are unknown but activities took place before the late-1980s. The FFTA consisted of an area approximately 200 ft by 50 ft. adjacent to a dirt road where firefighter training occurred. Firefighter training activities included setting small controlled fires so that the firefighters could practice putting them out. Typically, a flammable liquid was used to start the fires and depending on the facility, may have included diesel and/or gasoline. No structures were present at the FFTA and no further details regarding the training activities were available.

According to the FY08 CC IAP (USAEC, 2008) the site was cleaned up in the late-1980s. An area of soil approximately 50 ft. by 100 ft. by 4 ft. deep was excavated, aerated in the sun, and used as clean fill for the SRC landfill. No record of a written report documenting this cleanup has been discovered, and no records are available indicating that previous investigations have occurred at this site. This SWMU is included in the WSMR 2009 hazardous waste permit for and included in Table 8-2, requiring a corrective action work plan submittal by Nov. 1, 2011.

In September 2008, a PBA was awarded to achieve completion of an RFI at the site. The RFI report was submitted to the NMED in August 2010. Additional investigation was performed based on NMEDs comments on the RFI report. The additional work was conducted near a boring where DRO and arsenic were reported above the NMED SSLs and where potential debris was identified by the ground penetrating radar. In March 2011, limited excavation occurred within an area that was approximately 8 ft by 16 ft and depths ranging from 2 to 10 ft bgs. A small amount of debris was encountered and 60 cy of soil and debris were removed. Confirmation samples were collected from the floor of the excavation and from all four side walls. A revised RFI was submitted in July 2011. The NMED approved the investigation report on Jan. 25, 2012. No further corrective action is required at this site. WSMR's strategy is to petition for a Class III Permit Modification to change the status of the site from requiring corrective action to CAC.

CLEANUP/EXIT STRATEGY

RFI report was approved by NMED. No further investigations are required. WSMR anticipates submitting a CAC petition.

Site ID: CCWS-05
Site Name: HELSTF CLEANING FACILITY SUMP
Alias: SWMU 142

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198905	198906
CS	199502	199512
RFI/CMS	199206	202105

RIP Date: N/A

RC Date: 202105

SITE DESCRIPTION

CCWS-05 (SWMU 142) is the cleaning facility sump, located at the HCF, Building 26131. Specifically, the unit is located in the pre-clean room of the cleaning facility, and is currently inactive. The pre-clean room is used for general cleaning of parts and materials including degreasing, rust-stripping, and intermediate cleanings with caustics and acids. Solvents that were used include methyl ethyl ketone (MEK), acetone, Freon 113, trichloroethylene (TCE), and trichloroethane (TCA). Rinsate solutions and by-products (used solvents) accumulated in the sump via a floor trench in the pre-clean room.

CCWS-05 was not identified as a SWMU in the RFA reported in 1988. As a consequence, this site was not part of the initial HSWA operating permit issued Sept. 29, 1989. On May 26, 1989, WSMR notified the USEPA that a leak in the sump, at the cleaning facility, had been discovered. Instead, more than 600 gallons of waste per month were emptied directly from the vats into 55-gallon drums. A partial soil removal was completed in 1989. In June 1992, the Phase I RFI fieldwork was conducted at the cleaning facility. The report concluded that a significant release has occurred at SWMU 142; however, the extent of the release is not well- defined, and waste constituents in soil and groundwater identifiable as SWMU 142-related are commingled with wastes, which are more likely associated with SWMU 154. In October 1992, the NMED concurred with WSMR request to coordinate activities related to the RCRA closure of the cleaning facility tank system with the RFI process, at the cleaning facility and systemic diesel spill (IRP site WSMR-55; SWMU 154), and the IRM at SWMU 154. The sampling activities implemented under the groundwater satellite accumulation Point have consistently shown a variety of solvents and breakdown products including 1,1,1-TCA, 1,1-DCA, 1,1-DCE, acetone, benzene, chloroform, methyl chloride, TCE, and xylene. Periodically Freon-113, MEK, carbon disulfide, and methyl tertiary B-butyl ether have been detected. In general, these concentrations have declined over time. Other contaminants have also been regularly detected. These include ammonia, chloride, cyanide, fluoride, nitrate, orthophosphate, sulfate, and six of the eight RCRA metals. Mercury and silver were not detected the one time that the groundwater samples were analyzed for them. An assessment of historical data for the groundwater monitoring was conducted in FY01 and submitted to NMED to petition for reduced monitoring requirements in out-years. The NMED returned the action as unsupported in FY02. During October 1992, NMED concurred with WSMRs request to coordinate the combined activities to address the RFI processes at the HCF (CCWS-05) and Systematic Diesel Spill (WSMR-55).

A HELSTF Phase III RFI commenced in FY03 to address all HELSTF sites under one comprehensive study. The Phase III RFI includes a comprehensive data review, groundwater sampling and an ecological risk assessment. The work includes various IRP sites as well as various sites currently under the CC program.

The Phase III work plan was submitted to the NMED in September 2005. The first version of the report was submitted in February 2008. In September 2008 a PBA was awarded, which included a sub-contract line item number (CLIN) to achieve RC within two years of notice to proceed. A revised Phase III RFI report was submitted to NMED in FY09 based on NMED's first NOD. A second NOD was received in FY10 and a second revision to the Phase III RFI report was submitted to NMED. WSMR received a third NOD on the second revision report in March 2012. The RFI process and costs have been combined and are covered under WSMR-55.

CLEANUP/EXIT STRATEGY

Site ID: CCWS-05
Site Name: HELSTF CLEANING FACILITY SUMP
Alias: SWMU 142

A closure plan for remediating the soil and groundwater contamination will be required. WSMR plans to submit annual site-wide groundwater monitoring reports to NMED. Groundwater monitoring and RFI costs are covered under WSMR-55.

Site ID: CCWS-08
Site Name: AMRAD UST SITE
Alias: SWMU 164

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	199801	199809
RFI/CMS	200809	201609
IRA	200001	200409

RIP Date: N/A

RC Date: 201609

SITE DESCRIPTION

CCWS-08 (SWMU 164) is a 3,000-gallon UST discovered near Building 25900, at the Anti-Missile Radar Facility (AMRAD) in 1997. As-built facility drawings indicated that the tank was not actually a tank, but a sump that was used for storage of waste oil generated at the site, presumably from operation of a large radar dish near the tank location. Contents of the tank were removed in February 1998. The tank was reported to NMED UST Bureau in March 1998. Inspection of the site, by NMED UST Bureau field inspector, revealed that the UST was not regulated by NM UST Regulations and, therefore, fell under purview of NMED Groundwater Quality Bureau (GWQB). Following completion of field investigations in April 2000, NMED HWB listed the site in the White Sands AUA (June 2000) as SWMU 164. WSMR implemented a VCA in 2004 which consisted of filling the tank in place with a mixture of sand, concrete, fly ash and water. The tank was closed in place to avoid costly relocation of or potential damage to the structural integrity of the radio frequency fence and anchor system under the tank. The VCA report recommended NFA based on the results of the investigations showing that there were no serious or imminent threats to human health or the environment. NMED HWB approved the report in September 2006 stating that further corrective action is not required at this time due to the underground anchor located beneath the tank; however, the SWMU will remain in WSMRs permit until the site is remediated to current regulatory standards.

This SWMU is included in Table 8-2 of WSMRs 2009 hazardous waste permit, requiring a work plan submittal by January 2011.

In September 2008 a PBA was awarded to achieve completion of a RFI at the site.

Based on NMED's approval of the VCA activities, WSMR proceeded with a petition for a Class III permit modification instead of achieving an investigation under the PBA contract objective. A CAC petition was submitted to NMED in March 2010 and revised CAC petition was submitted in January 2011 adding two additional sites which included SWMU 164 to the petition. NMED determined the petition to be administratively incomplete in October 2011 requiring additional information for SWMU 164. The revised CAC petition was submitted to NMED on July 3, 2013. NMED issued an administratively complete determination of the CAC petition on Feb. 3, 2014 stating that they will now initiate a technical review of the submittal.

The objective at CCWS-08 is to complete the required CAC efforts following NMED technical review. WSMR may be required to complete additional CAC efforts upon NMED completion of the technical review. WSMR anticipates to achieve CAC with controls approval and implement institutional controls to prevent excavation or development at the site before remaining soil remediation can occur. There is not a defined duration of when the site will be closed; therefore, institutional controls will continue until the site is no longer used.

CLEANUP/EXIT STRATEGY

WSMR will complete the CAC requirements. Controls at the site will consist of LUC and signage.

Site ID: CCWS-09
Site Name: LC-38 Diesel Fuel Spill Site
Alias: SWMU 198

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	200201	200212
RFI/CMS	200301	201609

RIP Date: N/A

RC Date: 201609

SITE DESCRIPTION

CCWS-09 (SWMU 198), LC-38 Diesel Fuel Spill Site, consists of a 150,000-gallon AST (removed during FY2005) and surrounding contaminated area. The LC-38 complex is located 13 miles east of WSMR main post, just north of Nike Avenue. The Defense Fuels Agency has stored a strategic reserve of diesel fuel in a 150,000-gallon AST. Corroded piping, connected to the AST, resulted in the loss of approximately 31,000 gallons of fuel to soil beneath the site. Fuel is no longer stored in the AST, and the tank and associated piping were removed in FY05.

Upon discovery of a fuel release during FY2000, the NMED GWQB was notified in accordance with section 1203 of the WQCC Regulations. A PA was conducted in February 2001. A SWMU assessment was conducted in November 2003 to supplement data collected in 2001. Four groundwater monitoring wells were installed at the site in November 2003. Depth to area water table was approximately 235 ft bgs. Soil samples indicated the diesel contamination extended to approximately 75 ft bgs. The contaminated plume is approximately 20 ft thick.

The SWMU assessment report dated September 2004 recommended no further remedial action and to perform groundwater monitoring at the site for the presence of free-product annually, for ten years. In October 2006, NMED indicated that the site was not yet eligible for CAC. In addition, NMED required resampling for VOCs and metals in one of the wells and further indicated that sampling for 10 years would not be acceptable, and stated that annual groundwater monitoring of the four wells must continue until NMED determines otherwise. WSMR currently samples all the wells annually and reports the information to NMED in an annual comprehensive long term monitoring report.

This SWMU is included in the WSMR 2009 hazardous waste permit and included in Table 8-2, requiring a corrective action work plan submittal by Nov.1,2011.

In September 2008 a PBA contract was awarded to achieve RIP with five years of remedial action (operations) (RAO)/LTM optimization, remedy reviews, and correction of deficiencies. Required annual groundwater monitoring was also included in addition to achieving RIP.

Based on long-term groundwater monitoring data and on a risk analysis, WSMR believed that the site has been adequately characterized and met the requirements of the October 2006 NMED letter, therefore, proceeded with a CAC petition instead of achieving RIP under the PBA contract objective. A CAC petition was submitted to NMED in March 2010 and revised CAC petition was submitted in January 2011 adding two additional sites which included SWMU 164 to the petition. The NMED determined the petition to be administratively incomplete in October 2011 requiring additional information for SWMU 164. The revised CAC petition was submitted to NMED on July 3, 2013. The CAC petition is currently under NMED review.

The objective at CCWS-09 is to complete the required CAC efforts following NMED technical review. WSMR may be required to complete additional CAC efforts upon NMED completion of the technical review. WSMRs strategy is to achieve CAC with controls approval and continue annual groundwater monitoring at the site. The groundwater monitoring will continue per NMEDs direction and upon NMEDs approval of the CAC petition. Institutional controls will be part of the CAC controls.

Site ID: CCWS-09
Site Name: LC-38 Diesel Fuel Spill Site
Alias: SWMU 198

CLEANUP/EXIT STRATEGY

WSMR will complete the CAC requirements and continue annual groundwater monitoring.

Site ID: CCWS-100
Site Name: Acid Neutralization Pit
Alias: SWMU 101

STATUS

Regulatory Driver: RCRA

Contaminants of Concern: Metals, Other (Red Fuming Nitric Acid)

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
RFI/CMS	201401	201402
CMI(C)	201403	201708

RIP Date: N/A

RC Date: 201807

SITE DESCRIPTION

CCWS-100 (SWMU 101), was an unlined earthen surface impoundment about 100 ft long, 50 ft wide and 8 ft deep. The unit is located within a fenced compound about three and one-half miles east of the post on Range Road 210, 0.8 miles south of Range Road 2. The design capacity of the unit was about 3100 gallons per day. The pit was used to neutralize spent acids used in certain rocket fuels. The typical practice was to layer the pit with lime and then to fill the pit with diluted acid. The acid was neutralized as it percolated through the lime layer. The unit was in use from 1958 to 1984. The unit managed approximately 200 gallons per year of red fuming nitric acid. The unit was being operated under interim status and, because of the status, WSMR was seeking an operating permit. WSMR constructed a new site to perform the same operation and elected to close the site in lieu of seeking an operating permit. It was the New Mexico Environment Improvement Division (NMEID) policy that soil analyses be performed before considering clean closure of a hazardous waste management facility. In October 1985 the USACE conducted a soil investigation showing no hazardous waste contamination at the site. The investigation recommended WSMR seek delisting the site as a hazardous waste management facility and close the site. NMEID denied clean closure of the site requiring additional sampling. The USACE conducted additional sampling in August 1986 and further demonstrated that no contamination was found and the site was clean. A closure plan was submitted in accordance with NMEID requirements. The plan proposed closure of the facility by backfilling with clean fill and grading based on the results of the soil investigations. The NMEID approved the closure plan on Nov. 2, 1987. On April 1, 1988 WSMR submitted a letter to certify that as of March 28, 1988 the pit was closed. This certification letter gave NMEID grounds to deny the permit application for the unit and terminating the interim status of the surface impoundment. The 1988 RFA, concluded there is currently a low potential for release to soil or groundwater, surface water, air, and subsurface gas. The RFA suggested NFA required at the site.
This SWMU is included in Table 8-1 of WSMRs 2009 hazardous waste permit requiring a closure plan submittal.

The objective at CCWS-100 is to submit and implement an approved closure plan. WSMR anticipates submitting a closure plan/post closure care plan by closing the unit in accordance with the RCRA permit.

CLEANUP/EXIT STRATEGY

WSMR anticipates submitting a closure plan in accordance with the RCRA permit.

Site ID: CCWS-101
Site Name: RAMS Buried Drums
Alias: None

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Soil

Phases	Start	End
RFA	201402	201408
CS	201402	201408
RFI/CMS	201402	201809
IRA	201503	201709

RIP Date: N/A

RC Date: 201809

SITE DESCRIPTION

CCWS-101 is located at the Radar Target Scatter Advanced Measurements (RAMS) facility. The facility is operated by the Air Force at Holloman AFB in Alamogordo. In January 2014, grading work for a construction activity uncovered three to five buried 55-gallon steel drums. The top of the drums were approximately 1 to 3 ft bgs and no markings were visible.

NMED was formally notified in February 2014 of the newly identified AOC. WSMR's objective is to conduct exploratory excavation and soil sampling to determine if there are any COPC followed by accelerated corrective action measures to remove the drums and any contaminated soil.

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting an accelerated removal action of the drums and any contaminated soil.

Site ID: CCWS-102
Site Name: Burn Pan
Alias: SWMU 102

STATUS

Regulatory Driver: RCRA

Contaminants of Concern: Explosives, Metals, Nitrate/Nitrite, Perchlorate

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
RFI/CMS	201401	201807

RIP Date: N/A

RC Date: 201807

SITE DESCRIPTION

CCWS-102 (SWMU 102), is a rectangular steel box approximately 7 ft long, 3 ft wide, and 1 ft deep. The unit was used until 1984 to burn spent rocket fuels such as furfural and aniline. The design capacity of the unit is about 200 gallons per day. Facility personnel said that the average usage was about 300 gallons as the closed acid neutralization pit. The Burn Pan is about 250 ft north of the former acid neutralization pit. The acid neutralization/burn pan area is about 3.5 miles east of the post on Range road 210, about 0.8 mile south of Range Road 2. The unit was being operated under interim status and, because of the status; WSMR was seeking an operating permit. WSMR constructed a new site to perform the same operation and elected to close the site in lieu of seeking an operating permit. It was NMEID policy that soil analyses be performed before considering clean closure of a hazardous waste management facility. In August 1986 the USACE conducted a soil investigation and determined that surrounding soils were contaminated and recommended a closure plan to address the removal of these soils. A closure plan dated June 1987 was submitted in accordance with NMEID requirements. The plan proposed closure of the facility by excavating the burn pan and backfilling with clean fill based on the results of the soil investigation. The NMEID approved the closure plan on Dec. 2, 1987. A subsequent addendum to the approved closure plan was also approved on March 30, 1989. The NMEID final disposition of the permit application was to deny the application and terminate the interim status of unit based on the closure plan activities.

The 1988 RFA, concluded there is currently a high potential for release to soil or groundwater, low potential for surface water, high potential for air, and moderate potential for subsurface gas. The RFA suggested that NFA is suggested.

This SWMU is included in Table 8-2 of WSMRs 2009 hazardous waste permit requiring a release assessment and investigation work plan.

The objective at CCWS-102 is to conduct a RFI followed by submitting a Class III permit modification petition to the NMED to change the status of the site to CAC.

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting a RFI followed by a CAC petition.

Site ID: CCWS-16
Site Name: HELSTF TSA Gasoline Spill Site
Alias: SWMU 197

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	200001	200003
RFI/CMS	200005	200006
DES	201401	201607
IRA	200010	200409
CMI(C)	201507	201708
CMI(O)	201710	201809

RIP Date: 201710

RC Date: 204709

SITE DESCRIPTION

The HELSTF is located on WSMR, approximately 18.5 miles northeast of the main post and approximately 2.2 miles north of US Highway 70. HELSTF became operational in September 1985. The primary mission of the facility has been to support the testing and evaluation of high-energy laser systems, subsystems, components, and materials. The Technical Support Area (TSA) for HELSTF was constructed in 1987. It is adjacent to Highway 70, approximately two miles from the main HELSTF area, and contains support facilities separate from the more hazardous HELSTF test facilities. The TSA area is located far enough away from the HELSTF main cantonment area to warrant not being part of the HELSTF Phase III RFI, currently being funded under IRP site WSMR-85.

CCWS-16 (SWMU 197), the HELSTF TSA Gasoline Spill Site, consists of a 3,000-gallon AST that released approximately 1,490 gallons of unleaded gasoline. The release was discovered on March 16, 2000. The magnitude of the loss was estimated on the basis of an inventory review. The fueling station was shut down in March 2000.

The TSA site was investigated during May and June 2000, at which time three monitoring wells were installed. During the investigation, two water-bearing zones were encountered. The first zone, located approximately 34 ft bgs, is perched in nature and laterally discontinuous. The second water-bearing zone encountered is the regional groundwater table, which was determined to be approximately 90 ft bgs. The regional aquifer is in unconsolidated silty sands and moderately sorted sand layers. Contamination had reached approximately 30 ft bgs, with maximum concentrations encountered near a depth of 17 ft. As an interim response, an SVE system was installed in October 2000 to remove fuel contamination from the subsurface, and operated for four months as an interim response measure. According to estimates, the SVE was effective at removing significant (estimated at perhaps as much as 1,800 gallons) quantities of fuel.

A follow-up investigation was performed in August 2004. The additional groundwater and soil sampling analytical results obtained were used to determine the effectiveness of the IRA on the existing subsurface conditions. The investigation determined that the SVE IRA was effective in removing the contamination from the more porous upper sediments from 0 to 25 ft. The human health and ecological exposure pathways, relevant to the remaining contamination, are all incomplete, leading to the conclusion of "no current or future human health or ecological risk." Four groundwater monitoring wells exist at the site.

In 2008 the site was under a PBA contract to achieve RC. Supplemental sampling from six newly installed wells and updated risk assessments were completed in 2009. In March 2011, a status report for the site was submitted to NMED to document the supplemental work and to demonstrate that the site is eligible for CAC with controls. The proposed controls include groundwater monitoring, a passive product recovery program and institutional controls. NMED responded to the status report with an NOD in April 2012. The NOD called for a revised report and a work plan for additional fieldwork. The site is currently undergoing monitoring. WSMR anticipates completing work as stated in the CMI work plan and responding to the NOD.

Site ID: CCWS-16
Site Name: HELSTF TSA Gasoline Spill Site
Alias: SWMU 197

CLEANUP/EXIT STRATEGY

WSMR will implement the approved CMI work plan to address the vadose zone. Biosparging, airsparging combined with SVE and monitored were among the remedies mentioned in the CMI work plan.

Site ID: CCWS-81
Site Name: Bldg 1621 drains & containers
Alias: SWMUs 1-7

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198805	198808
RFI/CMS	201103	201701

RIP Date: N/A

RC Date: 201701

SITE DESCRIPTION

CCWS-81 (SWMUs 1-7), is a collection of seven SWMUs that were located in the Visual Information Building No. 1621. The drains (SWMU 1) were covered by an approximately 1 by 1 ft metal grate in a concrete floor. The grates were located near the photoprocesors and the bleach/fixer collection containers (SWMUs 2-6). The size and material of construction of the underfloor drains are unknown. Building No. 1621 was built in 1958. The drains system had received prehardener, neutralizer, developer, bleach, fixer and stabilizer waste residues which contained low concentrations of chromium, metallic cyanides and silver.

Since 1985 photo chemical substitutions have been made eliminating the use of metallic cyanides. The five bleach and fixer collection containers received liquid waste fixer and bleach from both black/white and color photoprocessing equipment. Approximately 30 gallons per month of waste is generated. The waste is directed into the containers via clear, small flexible tubes which connect the photoprocessing equipment to the containers. When the containers are filled they are removed and replaced by new containers. In the past, the containers were filled and tapped then placed into three-legged metal stands, and stored until removed by the DRMO for off-site treatment and disposal. In the future all bleach and fixer waste liquids will be managed at the photoprocessing area for silver recovery. The containers will then be emptied into a Silver Recovery Unit in the same building. The treated liquid will then be sent to the hazardous waste storage facility for further treatment in the evaporation tank. The silver recovery unit tailing tank (SWMU 7), removes silver from the waste generated by electroplating out onto an internal drum. The silver is then from the drum into a plastic container (tailing tank). The recovered silver is then shipped off-site and collected in the tailing tank. The SWMUs were active from 1958-1990.

A RFA was conducted in 1988 that suggested a low release potential to soil and groundwater, surface water, air, and subsurface gas generation for all the SWMUs included in CCWS-81. According to the RFA, NFA is suggested. No additional work has been completed since the RFA.

These SWMUs were not included in the 1989 permit, indicating that the RFA conclusion was accepted by USEPA and NMED. These SWMUs also were not included in previous AUAs or fee letters.

These SWMUs were included in the 2009 hazardous waste permit for WSMR and were included in Table 8-2, requiring corrective action with a work plan submittal. WSMR's strategy is to conduct a RFI.

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting an RFI followed by a CAC petition.

Site ID: CCWS-84
Site Name: Silver Recovery System Tailing Tank
Alias: SWMU-128

STATUS

Regulatory Driver: RCRA

Contaminants of Concern: Metals

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198805	198808
RFI/CMS	201103	201901

RIP Date: N/A

RC Date: 201901

SITE DESCRIPTION

CCWS-84 (SWMU 128) is located in the basement of Building 1512. The tailings tank is the final tank in the commercialized silver recovery system. The tank is a fiberglass tank with a capacity of about 40 gallons. Photographic fixer solution is re-circulated through the silver recovery system where excess silver is recovered from the solution by an electrolytic process. Flow into and out of the unit is via manually controlled pumps. Overflow from the fixer bath accumulates in the interface tanks then is pumped into the recovery tank where the silver is recovered. Metallic silver deposits onto cylinders in the recovery tank. Effluent from the recovery tank is then pumped to the tailing tank for removal of residual silver. The concentration of silver is reduced to less than 5 ppm before discharging the effluent to the sewer system. As of 1988 the silver recovery system was about 10 years old. It operated from the 1970s-1990s.

An RFA was conducted in 1988 that suggested a low release potential to soil/groundwater, surface water, air, and subsurface gas generation for all the SWMUs included in CCWS-84. The RFA suggested that NFA is warranted.

This SWMU was included in the 2009 hazardous waste permit for WSMR and included in Table 8-2, requiring correction. WSMR's strategy is to conduct a RFI.

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting an RFI followed by a CAC petition.

Site ID: CCWS-85
Site Name: Cyanide Treatment Unit
Alias: SWMU-129

STATUS

Regulatory Driver: RCRA

Contaminants of Concern: Other (Cyanide)

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198805	198808
RFI/CMS	201103	201901

RIP Date: N/A

RC Date: 201901

SITE DESCRIPTION

CCWS-85 (SWMU 129) is located in Building 1512. Prior to 1985 this unit was used to oxidize spent photographic bleacher solutions which contained ferrous cyanide. In 1985, ferrous cyanide was replaced by sodium persulfate in the bleaching process. The unit is a closed system constructed of stainless steel. The unit used an ozone treatment process to oxidize ferrous cyanide to ferrous cyanate prior to discharging the effluent to the STP. The ozone unit is currently used to oxidize hydroquinone and sodium thiocyanate prior to discharging the effluent to the STP. Prior to installation of the cyanide treatment unit, wastes containing spent ferrous cyanide were stored in 1,000-gallon plastic storage tanks. Periodically the spent ferrous cyanide solution was transferred to the evaporation pit. Because ferrous cyanide is no longer used, the tank was relocated in 1985 to building 1524 where it is used as a secondary spill containment tank for an acetic acid storage area. It operated from the 1970's to the 1990's.

An RFA was conducted in 1988 that suggested a low release potential to soil/groundwater, surface water, air, and subsurface gas generation for all the SWMUs included in CCWS-85. The RFA suggested that NFA is warranted.

This SWMU was included in the 2009 hazardous waste permit for WSMR and included in Table 8-2, requiring corrective action. The RFI process and costs are combined and covered under CCWS-84.

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting an RFI followed by a CAC petition.

Site ID: CCWS-86
Site Name: SWMU 130-131,developer/acetic tanks
Alias: None

STATUS

Regulatory Driver: RCRA

Contaminants of Concern: Other (Cyanide, Acetic Acid)

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198805	198808
RFI/CMS	201103	201707

RIP Date: N/A

RC Date: 201707

SITE DESCRIPTION

CCWS-86 (SWMUs 130-131) is located outside of Building 1524 where it is used as a back-up secondary containment tank for the acetic acid storage area. The unit is a cylindrical plastic tank with a capacity of 1,000 gallons. The acetic acid is stored in drums on pallets inside a diked concrete pad. A drain within the diked containment pad slopes to a drain line which connects to the spill containment tank. Facility personnel stated that the tank is presently used on an emergency basis only and may never have received waste. Prior to 1985, this tank was located outside Building 1512 where it was used to store spent ferrous cyanide solution from photographic processing. Periodically, the ferrous cyanide solution was removed from this tank and transferred to the evaporation tank. The tank was mounted on a diked concrete pad outside the building.

An RFA was conducted in 1988 that suggested a low release potential to soil/groundwater, surface water, air, and subsurface gas generation for all the SWMUs included in CCWS-86. The RFA suggested that NFA is warranted.

These SWMUs were included in the 2009 hazardous waste permit for WSMR and were included in Table 8-2, requiring corrective action. WSMR's strategy is to conduct a release assessment followed by a RFI if necessary.

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting an RFI followed by a CAC petition.

Site ID: CCWS-88
Site Name: SWMUs 135-136
Alias: Paint Shop

STATUS

Regulatory Driver: RCRA

Contaminants of Concern: Other (Solvents)

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198805	198808
RFI/CMS	201103	201901

RIP Date: N/A

RC Date: 201901

SITE DESCRIPTION

CCWS-88 (SWMU 135-136) is located at two separate locations around Building 1742. The Paint Shop Accumulation Area (SWMU 135) is located outside of building 1742. Drums of paint waste and waste solvent are stored on wooden pallets. The accumulation area is gravel covered and fenced. The dates of operation could not be confirmed. The Paint Shop spray booth (SWMU 136) is a Binks spray booth. It is located inside Building 1742. The unit is a water-cascade type spray booth used for airless and conventional spray painting. During spray painting operations a water-cascade curtain is activated to entrap overspray from paint operations. The effluent from the water-cascade flows via a sump. Wastewater from the spray booth contains particulates from paint overspray. Volatiles from paint solvents are vented through an exhaust duct to the atmosphere. The primary solvent utilized in the paint shop is PD-680, which contains no toxic or ignitable constituents. A high velocity exhaust fan is activated when the spray booth is in use. The water-cascade entraps particulate overspray from paint operations.

An RFA was conducted in 1988 that suggested a moderate release potential to soil/groundwater, low release potential surface water, a moderate release potential to air, and a low subsurface gas generation release potential at SWMU 135. During the visual inspection the gravel around the waste drums at SWMU 135 was stained with minor paint spills and drips. The RFA suggested that there were low release potentials to soil/groundwater and surface water at SWMU 136. The RFA suggested a moderate release potential to air based on the venting of exhaust fumes and suggested no potential for release from subsurface gas.

WSMR (2000) requested removal from the 1999 AUA based on the inability for minor spills to migrate to the subsurface. NMED (2000) denied based on the RFA suggesting an RFI. NMED (2000) stated that there was no record of RFI or other corrective action that would warrant removal from the HSWA module of the RCRA permit. The NMED (2000) requested RFI or corrective action documentation.

Building 1742 is no longer used as the paint shop. Base operations support currently occupies Building 1742.

These SWMUs were included in the 2009 hazardous waste permit for WSMR and were included in Table 8-2, requiring corrective action. WSMR's strategy is to conduct a RFI.

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting an RFI followed by a CAC petition.

Site ID: CCWS-90
Site Name: LC-34 Contaminated Soils
Alias: SWMU 165

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Soil

Phases	Start	End
RFA	198805	198805
RFI/CMS	201103	201901

RIP Date: N/A

RC Date: 201901

SITE DESCRIPTION

CCWS-90 (SWMU 165) consisted of two USTs located near buildings 23104 and 23106. The tank at building 23104 had a capacity of 500 gallons and the tank at building 23106 had a capacity of 1,000 gallons and both of single-wall construction. The USTs provided heating oil storage for boilers located in buildings 23104 and 23106 and were not regulated by NMED UST Bureau Regulations. Though the tanks were not regulated by NMED, closure activities were performed in accordance with NMED UST regulations. A courtesy notification letter indicating the intent to permanently close the tanks was sent to NMED UST Bureau. The two tanks were removed from WSMR on Feb. 18, 1998. Approximately 90 cys of soil were removed from building 23104 and 35 cys from building 23106. On March 30, 1998, a letter was sent to NMED Groundwater Bureau notifying them of the excavation and removal of the USTs. WSMR proposed to excavate the contaminated soil, take confirmation samples to ensure concentrations of contaminates were below regulatory limits and then to backfill the excavation with clean soil from an approved borrow pit. Confirmation sampling showed that samples were below the laboratory detection limit of 5mg/kg confirming all contaminated soil had been removed. In May 1998 the sites were backfilled and graded to original condition.

A closure report was developed in September 1998 recommending NFA was required at the site based on visual inspection of the sites and laboratory analysis of confirmatory samples collected from surrounding the tanks, NFA was recommended for these sites.

CCWS-90 was not included in the 1988 RFA, 1992 Phase I RFI, 1994 Phase II RFI or the 2006 Phase III RFI.

This SWMU was included in Table 8-2 of WSMRs 2009 hazardous waste permit.

The objective at CCWS-90 is to conduct a RFI followed by submitting a Class III permit modification petition to NMED to change the status of the site to CAC.

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting an RFI followed by a CAC petition.

Site ID: CCWS-91
Site Name: UST at Timing Station, Bldg 20710
Alias: SWMU 216

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	199503	199507
CS	199507	199909
RFI/CMS	201103	201901

RIP Date: N/A

RC Date: 201901

SITE DESCRIPTION

CCWS-91 (SWMU 216) is a former 600-gallon UST at the LC-32 Building 20710 Timing Station.

The tank was discovered in 1995 and was removed in April 1995. Two holes were noted in the bottom of the tank and a minor amount of diesel fuel leaked from these holes as the tank was physically removed. An investigation was completed in 1999 which determined a soil removal would be completed. A soil removal action has not been completed. NMED Petroleum Storage Tank Bureau (PSTB) stated that soil removal was not required and NFA was required at the site. NMED PSTB reiterated NFA status of the site and stated that an NFA request had not been received from WSMR. The site has been transferred to the NMED for oversight.

This SWMU is included in the 2009 hazardous waste permit for WSMR and included in Table 4-1, requiring corrective action.

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting an RFI followed by a CAC petition.

Site ID: CCWS-92
Site Name: LC 38 Bldg 23626
Alias: SWMU-218

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198805	198808
RFI/CMS	201103	201607

RIP Date: N/A

RC Date: 201607

SITE DESCRIPTION

This site is a 1,764-gallon UST at the Launch Complex (LC) 38 Building 23626. The tank was utilized to supply gasoline for vehicles via a multiple key dispenser located adjacent to the UST. The tank was steel and uncoated. The tank was removed on Feb. 3, 1993. It was determined that contamination has impacted the soils beneath the tank soon after the tank had been removed. The Phase II recommended that a minimum site assessment work plan be prepared as part of the Phase III.

In April 1993, a contamination delineation report was completed. The purpose of the investigation was to assess soil quality, to determine if separated-phase product is present in the subsurface at the site, to delineate the magnitude and extent of potential petroleum hydrocarbon contamination identified, and to determine the potential impact of existing site conditions on the surrounding environment. According to the report the groundwater was not impacted. No phase separated hydrocarbon (PSH) was observed in the soil borings completed. Soil sample analytical data indicates that subsurface soils from 10 to 11 ft, 15 to 16.5 ft, 30 to 31.5 ft and 40 to 41.5 ft in boring B-1 exhibited BTEX values above NMED guidelines. Boring B-1 was at the center of the former location of the tank.

This site is listed as SWMU 218 in Table 8-2 of the 2009 RCRA permit requiring corrective action.

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting an RFI followed by a CAC petition.

Site ID: CCWS-93
Site Name: sink and drain system at Bldg 1621
Alias: AOC-A

STATUS

Regulatory Driver: RCRA

Contaminants of Concern: Metals, Other (Cyanide)

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198805	198808
RFI/CMS	201103	201901

RIP Date: N/A

RC Date: 201901

SITE DESCRIPTION

CCWS-93 (AOC A) is a bank of three sinks located in the photoprocessing area in the east side of Building 1621. The sinks are used for the approximately weekly scrubbing of the photoprocessing racks contained in each of the photoprocessing machines. The racks are in direct contact with photo chemicals such as fixers and bleaches which contain silver. Photo chemicals containing cyanides were substituted for by 1985. It was operated from 1958 to the mid-1990s.

An RFA was conducted in 1988 which suggested NFA is warranted.

This SWMU is included in the 2009 hazardous waste permit for WSMR and included in Table 8-2, requiring corrective action. The RFI process and costs are combined and covered under CCWS-81.

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting an RFI followed by a CAC petition.

Site ID: CCWS-94
Site Name: Battery Accum. Area at N Oscura
Alias: AOC B

STATUS

Regulatory Driver: RCRA

Contaminants of Concern: Metals

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198805	198808
RFI/CMS	201103	201707

RIP Date: N/A

RC Date: 201707

SITE DESCRIPTION

CCWS-94 (AOC B) is an accumulation area where approximately 10 vehicle lead/acid batteries were accumulated next to a tracking station at the North Oscura Range. As of 1988 the batteries had been there for one year. The batteries were placed on soil, were in the open and exposed to the weather elements. No evidence of leakage or spills was observed as of 1988.

An RFA was conducted in 1988 which suggested NFA is warranted.

This SWMU is included in the 2009 hazardous waste permit for WSMR and included in Table 8-2, requiring corrective action.

WSMR's strategy is to conduct a release assessment followed by a RFI if necessary.

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting an RFI followed by a CAC petition.

Site ID: CCWS-95
Site Name: Drum Storage Area at STP
Alias: AOC D

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198805	198808
RFI/CMS	201103	201707

RIP Date: N/A

RC Date: 201707

SITE DESCRIPTION

CCWS-95 (AOC D) is a concrete pad used for the storage of lube oil and solvent. Drums are stored horizontally on a wooden frame and additional drums stored on a concrete pad. The pad has no secondary containment. A drip collection tub is also present and sat beneath the solvent drum to collect spills.

An RFA was conducted in 1988 and suggested NFA is warranted. The RFA suggested that improvements to the secondary containment may be warranted.

This SWMU is included in the 2009 hazardous waste permit for WSMR and included in Table 8-2, requiring corrective action.

WSMR's strategy is to conduct a release assessment followed by a RFI if necessary.

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting an RFI followed by a CAC petition.

Site ID: CCWS-96
Site Name: Pesticide Storage Area
Alias: AOC E

STATUS

Regulatory Driver: RCRA

Contaminants of Concern: Pesticides

Media of Concern: Soil

Phases	Start	End
RFA	198805	198808
RFI/CMS	201103	201707

RIP Date: N/A

RC Date: 201707

SITE DESCRIPTION

CCWS-96 (AOC E) is located at Building 1708 on the main post. It is used to store and mix pesticides. Storage is in commercially approved containers including one and five-gallon cans, 30 and 55-gallon drums for liquids and 3 to 50-lb plastic lined bags for dry materials. The storage and mixing area is a concrete slab which was modified in 1981 to provide a 4-inch deep concrete retaining basin to contain possible spills. The storage facility is within a controlled fenced area and securely locked.

An RFA was conducted in 1988 and suggested NFA is warranted.

This SWMU is included in the 2009 hazardous waste permit for WSMR and included in Table 8-2, requiring corrective action.

WSMR's strategy is to conduct a release assessment followed by a RFI if necessary.

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting a release assessment followed by an RFI if necessary.

Site ID: CCWS-98
Site Name: Abandoned UST
Alias: AOC Z

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198805	198808
RFI/CMS	201103	201601

RIP Date: N/A

RC Date: 201601

SITE DESCRIPTION

CCWS-98 (AOC Z) is located at the southern end of the main post near the intersection of Headquarters and Raritan Ave (now Martin Luther King Drive). The tank was situated just off the dirt road approximately 200 ft. south of Raritan Ave. The unit was constructed of steel and a portion of the tank was exposed above grade. The dimensions are approximately 10 by 4 ft. A vent protruded about three-quarters out of the ground on one end of the tank. The dates of operation and the contents are unknown. The tank reportedly contained gasoline; it has been removed.

An RFA was conducted in 1988 and suggested that further investigation be warranted to determine the constituents of the tank. This SWMU is included in the 2009 hazardous waste permit for WSMR and included in Table 8-2, requiring corrective action.

This SWMU is included in Table 8-2 of WSMR's 2009 Hazardous Waste Permit requiring a corrective action work plan submittal by July 1, 2015. The objective at CCWS-98 is to conduct a RFI and a release assessment as part of the RFI. A Class III Permit Modification Petition to the NMED will follow the RFI to change the status of the site to CAC.

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting an RFI followed by a CAC petition.

Site ID: CCWS-99
Site Name: Waste Oil Tank and Sump, Bldg 1794
Alias: SWMU 8 & 9

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198805	198808
RFI/CMS	199203	201701

RIP Date: N/A

RC Date: 201701

SITE DESCRIPTION

CCWS-99 (SWMUs 8-9) consists of two separate SWMUs located at the maintenance area on the main post. The waste oil tank and sump are located approximately 300 ft east of Building 1794. The sump is located within a paved, bermed area that is also used for product drum storage. The waste oil tank is an underground steel tank with a 5,000 gallon capacity. Waste oil enters the tank via the waste oil sump. The sump is open at the top and partially covered by a metal grate to prevent debris from clogging the drain. The waste oil tank was and sump started operation in the 1950s. The tank and the sumps received waste oil and other fluids routinely drained from vehicles. The tank received waste oil generated at the heavy equipment area and the vehicle maintenance shop as well as from collection points at remote locations such as Oscura Range Center and SRC.

An RFA was conducted in 1988 that suggested a moderate release potential to the soil and a minimal release potential to groundwater. The RFA suggested a low release potential to surface water, air, and subsurface gas. The RFA suggested NFA is warranted.

This site was included in the 1989 RCRA permit as Appendix II.

A Phase I RFI was conducted in 1992 that included CCWS-99. The RFI concluded that more work needed to be done to the site in order to properly close out the site. Consequently a Phase II RFI was conducted in 1994 that included CCWS-99. The Phase II report recommended that a CMS was needed to evaluate the removal and disposal of soil. The RFI also concluded that an evaluation of the current operation and spill prevention procedures would also be appropriate since the potential for an additional release exists.

The USEPA (1995a) NOD requested CS to verify closure. The NMED (1996) NOD requested Phase III RFI. Dow (1997a) confirmed that the tank had been removed and no release had occurred. Mevatec (2000a) requested Class III permit modification. The NMED (2002) denied it. A final RFI report was requested. The WTS (2006a) Phase III RFI determined NFA. The NMED (2006e) NOD noted nothing specific for SWMU 8.

This SWMU is included in the 2009 hazardous waste permit for WSMR and included in Table 4-1, requiring corrective action. WSMR's strategy is to conduct a RFI.

CLEANUP/EXIT STRATEGY

WSMR anticipates conducting an RFI followed by a CAC petition.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
CCWS-77	Main Post POL Storage Site	201403	Not eligible. Active site.
CCWS-82	TTF SWMUs 106, 109-113, AOC H-L	201403	Not eligible. Active sites.
CCWS-83	Waste Oil Storage Tank at SRC	201401	Not eligible. Active site.
CCWS-87	SWMUs 133-134 Accumulation Area	201401	Not eligible. Active sites.
CCWS-89	Accumulation area at RATSCAT	201401	Not eligible. Active site.
CCWS-97	Brine (MeCL) Storage Tank	201401	Not eligible. Active site.

CR Schedule

Date of CR Inception: 198805

Past Phase Completion Milestones

1988	
RFA	(CCWS-100 - Acid Neutralization Pit , CCWS-102 - Burn Pan, CCWS-81 - Bldg 1621 drains & containers , CCWS-82 - TTF SWMUs 106, 109-113, AOC H-L, CCWS-83 - Waste Oil Storage Tank at SRC, CCWS-84 - Silver Recovery System Tailing Tank, CCWS-85 - Cyanide Treatment Unit, CCWS-86 - SWMU 130-131,developer/acetic tanks, CCWS-87 - SWMUs 133-134 Accumulation Area, CCWS-88 - SWMUs 135-136, CCWS-89 - Accumulation area at RATSCAT, CCWS-90 - LC-34 Contaminated Soils, CCWS-92 - LC 38 Bldg 23626, CCWS-93 - sink and drain system at Bldg 1621, CCWS-94 - Battery Accum. Area at N Oscura, CCWS-95 - Drum Storage Area at STP, CCWS-96 - Pesticide Storage Area, CCWS-97 - Brine (MeCL) Storage Tank, CCWS-98 - Abandoned UST, CCWS-99 - Waste Oil Tank and Sump, Bldg 1794)
1989	
RFA	(CCWS-05 - HELSTF CLEANING FACILITY SUMP)
1995	
RFA	(CCWS-91 - UST at Timing Station, Bldg 20710)
1996	
CS	(CCWS-05 - HELSTF CLEANING FACILITY SUMP)
1997	
CS	(CCWS-04 - STALLION RANGE CENTER FORMER FFTA)
RFA	(CCWS-04 - STALLION RANGE CENTER FORMER FFTA)
1998	
RFA	(CCWS-08 - AMRAD UST SITE)
1999	
CS	(CCWS-91 - UST at Timing Station, Bldg 20710)
2000	
RFI/CMS	(CCWS-16 - HELSTF TSA Gasoline Spill Site)
RFA	(CCWS-16 - HELSTF TSA Gasoline Spill Site)
2003	
RFA	(CCWS-09 - LC-38 Diesel Fuel Spill Site)
2004	
IRA	(CCWS-08 - AMRAD UST SITE, CCWS-16 - HELSTF TSA Gasoline Spill Site)
2006	
RFA	(CCWS-77 - Main Post POL Storage Site)
CS	(CCWS-77 - Main Post POL Storage Site)
2014	
RFI/CMS	(CCWS-100 - Acid Neutralization Pit , CCWS-77 - Main Post POL Storage Site, CCWS-82 - TTF SWMUs 106, 109-113, AOC H-L, CCWS-83 - Waste Oil Storage Tank at SRC, CCWS-87 - SWMUs 133-134 Accumulation Area, CCWS-89 - Accumulation area at RATSCAT, CCWS-97 - Brine (MeCL) Storage Tank)
CS	(CCWS-101 - RAMS Buried Drums)
RFA	(CCWS-101 - RAMS Buried Drums)

Projected Phase Completion Milestones

See attached schedule

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

To Be Determined

CR Schedule

Final RA(C) Completion Date: 201708

Schedule for Next Five-Year Review: 2019

Estimated Completion Date of CR at Installation (including LTM phase): 202105

WHITE SANDS MISSILE RANGE CR Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
CCWS-04	STALLION RANGE CENTER FORMER FFTA	RFI/CMS	■	■				
CCWS-05	HELSTF CLEANING FACILITY SUMP	RFI/CMS	■	■	■	■	■	■
CCWS-08	AMRAD UST SITE	RFI/CMS	■					
CCWS-09	LC-38 Diesel Fuel Spill Site	RFI/CMS	■					
CCWS-100	Acid Neutralization Pit	CMI(C)	■	■				
CCWS-101	RAMS Buried Drums	RFI/CMS	■	■	■			
		IRA	■	■				
CCWS-102	Burn Pan	RFI/CMS	■	■	■			
CCWS-16	HELSTF TSA Gasoline Spill Site	DES	■					
		CMI(C)	■	■				
		CMI(O)			■			
CCWS-81	Bldg 1621 drains & containers	RFI/CMS	■	■				
CCWS-84	Silver Recovery System Tailing Tank	RFI/CMS	■	■	■	■		
CCWS-85	Cyanide Treatment Unit	RFI/CMS	■	■	■	■		
CCWS-86	SWMU 130-131,developer/acetic tanks	RFI/CMS	■	■				
CCWS-88	SWMUs 135-136	RFI/CMS	■	■	■	■		
CCWS-90	LC-34 Contaminated Soils	RFI/CMS	■	■	■	■		
CCWS-91	UST at Timing Station, Bldg 20710	RFI/CMS	■	■	■	■		
CCWS-92	LC 38 Bldg 23626	RFI/CMS	■					
CCWS-93	sink and drain system at Bldg 1621	RFI/CMS	■	■	■	■		
CCWS-94	Battery Accum. Area at N Oscura	RFI/CMS	■	■				
CCWS-95	Drum Storage Area at STP	RFI/CMS	■	■				
CCWS-96	Pesticide Storage Area	RFI/CMS	■	■				
CCWS-98	Abandoned UST	RFI/CMS	■					

WHITE SANDS MISSILE RANGE CR Schedule

SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
CCWS-99	Waste Oil Tank and Sump, Bldg 1794	RFI/CMS						

Community Involvement

Technical Review Committee (TRC): None

Community Involvement Plan (Date Published): 201206

Restoration Advisory Board (RAB): No

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

Community Interest Solicited on: 201301

Efforts Taken to Determine Interest

Advertisements were placed in the local WSMR paper, the Missile Ranger and the Las Cruces Sun News.

Results

No one responed to the solicitation.

Follow-up Procedures

Community involvement interest will be solicited again in 2015.

Additional Community Involvement Information

The WSMR provides the public with opportunities for environmental restoration involvement by providing the following:
- Periodic newsletters discussing current restoration activities and providing plans and soliciting input for activities planned during the future year,
- Invitations to tour environmental restoration sites,
- Open access to the restoration library located in Building 163 on the Main Post, and
- Annual publication of the IAP

Administrative Record is located at

White Sands Missile Range
Building 163, Environmental Division
White Sands Missile Range, NM 88002
575-678-0810

Information Repository is located at

TBD

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

TAPP Title: N/A

Potential TAPP: N/A