

FY2015

HAWTHORNE ARMY DEPOT
Army Defense Environmental Restoration Program
Installation Action Plan

Printed 24 September 2015

Table of Contents

Statement Of Purpose.....	1
Acronyms.....	2
Acronym Translation Table.....	5
Site Alias List.....	6
Installation Information.....	7
5-Year / Periodic Review Summary.....	9
Land Use Control (LUC) Summary.....	10
Cleanup Program Summary.....	30
Installation Restoration Program.....	31
IRP Summary.....	32
IRP Contamination Assessment.....	35
IRP Previous Studies.....	38
Installation Restoration Program Site Descriptions.....	52
HWAAP-B04 101-44 IMPOUNDMENT.....	53
HWAAP-B24A BLDG 336: FUEL STORAGE	54
HWAAP-B26 103-6 POL PIT.....	55
HWAAP-B27A 103-16 CATCHMENT PIT.....	56
HWAAP-I02 110 GROUP OPEN BURNING PIT.....	57
HWAAP-I09 49-10 PIT/LANDFILL #1 & #2.....	58
Installation Restoration Program Site Closeout (No Further Action) Sites Summary.....	59
Installation Restoration Program Schedule.....	65
Installation Restoration Program Milestones.....	65
IRP Schedule Chart.....	71
Military Munitions Response Program.....	72
MMRP Summary.....	73
MMRP Contamination Assessment.....	74
MMRP Previous Studies.....	75
Military Munitions Response Program Site Descriptions.....	76

Table of Contents

HWAAP-008-R-01 WALKER LAKE LAND TEST RANGE.....	77
HWAAP-009-R-01 ASROC RANGES.....	78
HWAAP-010-R-01 ASROC RANGES (TD).....	79
HWAAP-012-R-01 PRE-1940 DETONATING PITS (TD).....	80
HWAAP-013-R-01 PRE-1940 DETONATING PITS.....	81
HWAAP-020-R-01 WHISKEY FLAT.....	82
HWAAP-022-R-01 OLD BOMB ROCKET FIRING RANGE-EAST.....	83
Military Munitions Response Program Site Closeout (No Further Action) Sites Summary.....	84
Military Munitions Response Program Schedule.....	85
Military Munitions Response Program Milestones.....	85
MMRP Schedule Chart.....	86
Compliance Restoration.....	87
CR Summary.....	88
CR Contamination Assessment.....	89
CR Previous Studies.....	90
Compliance Restoration Site Descriptions.....	91
CCHWAAP-B29 103-41 Unlined Ponds.....	92
CCHWAAP-I15 101-42 CATCHMENT PIT.....	93
Compliance Restoration Site Closeout (No Further Action) Sites Summary.....	94
CR Schedule.....	96
Compliance Restoration Milestones.....	96
CR Schedule Chart.....	98

Statement of Purpose

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

In an effort to coordinate planning information between the restoration manager, the US Army Environmental Command (USAEC), the Hawthorne Army Depot (HWAD), the executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules, and tentative budgets for all major Army installation cleanup programs.

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

Acronyms

AEDB-CC	Army Environmental Database-Compliance-related Cleanup
AEDB-R	Army Environmental Database-Restoration
AMC	Army Materiel Command
AOC	Area of Concern
AOI	Area of Interest
ARRCOM	US Army Armament Material Readiness Command
ASROC	Anti-Submarine Rocket
AST	Aboveground Storage Tank
bgs	below ground surface
Bldg	Building
BRA	Baseline Risk Assessment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMI	Corrective Measures Implementation
CMI(C)	Corrective Measures Implementation (Construction)
CMI(O)	Corrective Measures Implementation (Operation)
CMS	Corrective Measures Study
COC	Contaminant of Concern
CPT	Cone Penetrometer Test
CR	Compliance Restoration
CS	Confirmation Sampling
cy	cubic yard
DD	Decision Document
DDT	Dichlorodiphenyltrichloroethane
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program
DES	Design
DNT	Dinitrotoluene
DoD	Department of Defense
DZB	Day and Zimmermann/Basil Corporation
DZHC	Day and Zimmermann Hawthorne Corporation
ER,A	Environmental Restoration, Army
FRA	Final Remedial Action
FS	Feasibility Study
FUDS	Formerly Used Defense Site
FY	Fiscal Year
GO/CO	Government Owned/Contractor Operated
GPS	Global Positioning System
HE	High Explosive
HRR	Historical Records Review
HRS	Hazard Ranking System
HWAAP	Hawthorne Army Ammunition Plant
HWAD	Hawthorne Army Depot
IAP	Installation Action Plan
IPE	Industrial Plant Equipment
IRA	Interim Remedial Action

Acronyms

IRP	Installation Restoration Program
ISO	International Standards Organization
IT	International Technology Corporation
JMC	Joint Munitions Command
kg	kilogram
KO	Contracting Officer
L	liter
lb	pound
LTM	Long-Term Management
LUC	Land Use Control
MC	Munitions Constituents
MD	Munitions Debris
MEC	Munitions and Explosives of Concern
mg	milligram
MMRP	Military Munitions Response Program
MNA	Monitored Natural Attenuation
MR	Munitions Response
MRS	Munitions Response Site
MRSPP	Munitions Response Site Prioritization Protocol
MW	Monitoring Well
N/A	Not Applicable
NDEP	Nevada Division of Environmental Protection
NFA	No Further Action
NIOTC	Naval Inshore Operations Training Center
NPL	National Priorities List
NV	Nevada
OB	Open Burning
OD	Open Detonation
ODUSD(I&E)	Office of the Deputy Under Secretary of Defense for Installations and Environment
PA	Preliminary Assessment
PBA	Performance Based Acquisition
PBC	Performance-Based Contract
PCB	Polychlorinated biphenyl
PCP	Pentachlorophenol
PMCDIR	Project Manager for Chemical Demilitarization and Installation Restoration
POL	Petroleum, Oil, and Lubricants
ppb	parts per billion
ppm	parts per million
PRG	Preliminary Remediation Goal
RA	Remedial Action
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operation)
RAB	Restoration Advisory Board
RC	Response Complete
RCRA	Resource Conservation and Recovery Act

Acronyms

RD	Remedial Design
RDX	Triazacyclohexane
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
RSL	Regional Screening Level
SI	Site Inspection
SSTL	Site-specific Target Level
SVE	Soil Vapor Extraction
SWMU	Solid Waste Management Unit
TAPP	Technical Assistance for Public Participation
TCE	Trichloroethylene
TD	Transferred
TNB	Trinitrobenzene
TNT	Trinitrotoluene
TPH	Total Petroleum Hydrocarbons
TPH-d	Total Petroleum Hydrocarbons-diesel
TRC	Technical Review Committee
ug	microgram
UIC	Underground Injection Control
USACE	US Army Corps of Engineers
USACHPPM	US Army Center for Health Promotion and Preventive Medicine
USAEC	US Army Environmental Command
USAEHA	US Army Environmental Hygiene Agency (now USACHPPM)
USATHAMA	US Army Toxic and Hazardous Materials Agency (now USAEC)
USEPA	US Environmental Protection Agency
USGS	US Geological Survey
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound
WWII	World War II

Acronym Translation Table

CERCLA

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

RCRA

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

Site Alias List

AEDB-R Site ID to Alias List

AEDB-R #	Alias
CCHWAAP-B29	103-41
CCHWAAP-I15	101-42
HWAAP-008-R-01	WL Land
HWAAP-009-R-01	ASROC
HWAAP-010-R-01	ASROC TD
HWAAP-012-R-01	Pre1940 TD
HWAAP-013-R-01	Pre-1940
HWAAP-020-R-01	Whiskey
HWAAP-022-R-01	OB East
HWAAP-B04	101-44
HWAAP-B24A	bldg 336
HWAAP-B26	103-6
HWAAP-B27A	103-16
HWAAP-I02	110 Group
HWAAP-I09	49-10

Installation Information

Installation Locale

Installation Size (Acreage): 147236

City: Hawthorne

County: Mineral

State: Nevada (NV)

Other Locale Information

HWAD is located in Mineral County, Nevada, approximately 135 miles southeast of Reno, NV. The depot covers an area of 147,236 acres and encloses three sides of the town of Hawthorne, which has a population of approximately 2,700 people. The installation is bounded by the Wassuk Mountain Range on the west, the Gillis Range on the east, and the Excelsior Mountains on the south. Walker Lake bounds the depot on the north.

Installation Mission

The mission of the HWAD is to:

- provide for the receipt, storage, rerehousing, preservation, packaging, surveillance, renovating, demilitarization/disposal, and issue of conventional ammunition, including response to Department of Defense (DoD) shipping contingency/wartime requirements as identified by higher headquarters to meet all operational munitions movement;
- provide US-wide depot redistribution for demilitarization and maintenance/renovation projects identified by the single manager for conventional ammunition;
- insure capability to ship/receive containerized munitions;
- operate the calibration laboratory;
- maintain an International Standards Organization container maintenance/repair facility;
- maintain an ammunition maintenance capability; and
- permanent storage of mercury for the Defense Logistics Agency.

The installation is the designated site for long-term storage of reused industrial plant equipment (IPE) and will receive, store, and be accountable for all IPE. The installation will perform special mission assignments as required.

Lead Organization

Army Materiel Command (AMC)

Lead Executing Agencies for Installation

US Army Environmental Command (USAEC)

Regulator Participation

State Nevada Division of Environmental Protection (NDEP)

National Priorities List (NPL) Status

HAWTHORNE ARMY DEPOT is not on the NPL

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

Installation is in the process of determining interest in establishing a RAB.

Installation Information

Installation Program Summaries

IRP

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

Affected Media of Concern: Groundwater, Soil

MMRP

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

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

CR

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

Affected Media of Concern: Soil

5-Year / Periodic Review Summary

5-Year / Periodic Review Summary

Status	Start Date	End Date	End FY
Complete	201003	201104	2011
Complete	200108	200109	2001
Underway	201410	201509	2015

Last Completed 5-Year / Periodic Review Details

Associated ROD/DD Name	Sites
HWAAP-B05 101-15 Impoundment	HWAAP-B05
HWAAP-B06 101-13 Surface Impoundment	HWAAP-B06
HWAAP-B07 101-1 Catchment Pit	HWAAP-B07
HWAAP-B08 101-1 Catchment Pit	HWAAP-B08
HWAAP-B09 101-32 Catchment Pit	HWAAP-B09
HWAAP-B10 101-3 Catchment Pit	HWAAP-B10
HWAAP-B11A 101-31 Catchment Pit	HWAAP-B11A
HWAAP-B11B 101-34 Catchment Pit	HWAAP-B11B
HWAAP-B12 101-10 Catchment Pit	HWAAP-B12
HWAAP-B13 101-29/36 Catchment Pit	HWAAP-B13
HWAAP-B16 101-18 Catchment Pit	HWAAP-B16
HWAAP-B17A 101-20 Catchment Pit	HWAAP-B17A
HWAAP-B17B Bldg 101-20 Catchment Pit	HWAAP-B17B
HWAAP-B18 101-62 Catchment Pit	HWAAP-B18
HWAAP-B19 101-11 Catchment Pit	HWAAP-B19
HWAAP-B20 101-41 Catchment Pit	HWAAP-B20
HWAAP-B21 101-41/42 Catchment Pit	CCHWAAP-B21, HWAAP-B21
HWAAP-B23 103-30 Catchment Pit	HWAAP-B23
HWAAP-B30 Building 101-16 Catchment Pit	HWAAP-B30
HWAAP-B31 101-65 Catchment Pit	HWAAP-B31
HWAAP-K05 Lust Site @ Bldg 117-3 UST	HWAAP-K05

Results Five Year Review completed on Schedule.

Actions None

Plans None

Recommendations and Implementation Plans:

1. Create land use control (LUC) implementation plan.
2. Ensure that all restrictions are properly identified in the Installation Master Plan.
3. Repair fences and ensure that gates to restricted areas are maintained in a secure manner.
4. Monitor for erosion at sites using fill.
5. Screen site data to current regional screening level (RSL) or accepted cleanup goals.
6. Evaluate vapor intrusion path ways for volatile organic compounds (VOC) sites near buildings.
7. Site B24 access the extent and quantity of remaining free-product and evaluate for further removal. Access monitored natural attenuation (MNA) using only data following closure of active remediation.

Land Use Control (LUC) Summary

LUC Title: 101-1 Catchment Pit

Site(s): HWAAP-B08

ROD/DD Title: HWAAP-B08 101-1 Catchment Pit

Location of LUC

Building 101-1 located in the 101 Area.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

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

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 101-1 Surface Impoundment

Site(s): HWAAP-B07

ROD/DD Title: HWAAP-B07 101-1 Catchment Pit

Location of LUC

Building 101-1 in the 101 Area.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

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

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 101-10 Catchment Pit

Site(s): HWAAP-B12

ROD/DD Title: HWAAP-B12 101-10 Catchment Pit

Land Use Control (LUC) Summary

Location of LUC

Catchment Pit is located east of Bldg. 101-10.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

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

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICIS

Additional Information

N/A

LUC Title: 101-13 surfaceimpoundment

Site(s): HWAAP-B06

ROD/DD Title: HWAAP-B06 101-13 Surface Impoundment

Location of LUC

This LUC is near Bldg. 101-13, in an area where bio was performed.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

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

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICIS

Additional Information

N/A

LUC Title: 101-15 Impoundment

Site(s): HWAAP-B05

ROD/DD Title: HWAAP-B05 101-15 Impoundment

Location of LUC

LUC is at the 101-15 impoundment located in the 101 Area.

Land Use Restriction: Restrict land use - No residential use

Land Use Control (LUC) Summary

Types of Engineering Controls: None

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

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 101-18 Catchment Pit

Site(s): HWAAP-B16

ROD/DD Title: HWAAP-B16 101-18 Catchment Pit

Location of LUC

LUC is located northwest of the conveyor ramp for bldg. 101-18.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards

Types of Institutional Controls: Construction Permit, Dig Permits, Education programs, Notations in Master Plan

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 101-20 Catchment Pit

Site(s): HWAAP-B17A

ROD/DD Title: HWAAP-B17A 101-20 Catchment Pit

Location of LUC

LUC is located five feet south of Bldg. 101-20 connected with HWAAP-B17B.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards

Types of Institutional Controls: Construction Permit, Dig Permits, Education programs, Notations in Master Plan

Date in Place: 199908

Land Use Control (LUC) Summary

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 101-29/36 Catchment Pit

Site(s): HWAAP-B13

ROD/DD Title: HWAAP-B13 101-29/36 Catchment Pit

Location of LUC

*** These LUCs are also associated with HWAAP-B14.*** LUC is located between Bldgs 101-29 and 101-36 and south of Bldg 101-56.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

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

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 101-3 Catchment Pit

Site(s): HWAAP-B10

ROD/DD Title: HWAAP-B10 101-3 Catchment Pit

Location of LUC

101-3 Catchment Pit is located north of building 101-3

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Notations in Master Plan

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Land Use Control (LUC) Summary

Inspecting Organization: Installation
Record of LUC: Master Plan or Equivalent
Documentation Date: N/A
LUC Enforcement: 5 Year Reviews
Contaminants: NITROAROMATICS
Additional Information
N/A

LUC Title: 101-31 Catchment Pit
Site(s): HWAAP-B11A
ROD/DD Title: HWAAP-B11A 101-31 Catchment Pit
Location of LUC

Catchment pit is located on the north side of building 101-31.

Land Use Restriction: Restrict land use - No residential use
Types of Engineering Controls: None
Types of Institutional Controls: Construction Permit, Dig Permits, Notations in Master Plan
Date in Place: 199908
Modification Date: N/A
Date Terminated: N/A

Inspecting Organization: Installation
Record of LUC: Master Plan or Equivalent
Documentation Date: N/A
LUC Enforcement: 5 Year Reviews
Contaminants: NITROAROMATICS
Additional Information
N/A

LUC Title: 101-32 Catchment Pit
Site(s): HWAAP-B09
ROD/DD Title: HWAAP-B09 101-32 Catchment Pit
Location of LUC

The location is east of Building 101-2 and measures approximately 100 by 155 feet. This pit is up to eight feet deep.

Land Use Restriction: Restrict land use - No residential use
Types of Engineering Controls: None
Types of Institutional Controls: Construction Permit, Dig Permits, Notations in Master Plan
Date in Place: 199908
Modification Date: N/A
Date Terminated: N/A
Inspecting Organization: Installation
Record of LUC: Master Plan or Equivalent
Documentation Date: N/A

Land Use Control (LUC) Summary

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICICS

Additional Information

N/A

LUC Title: 101-34 Catchment Pit

Site(s): HWAAP-B11B

ROD/DD Title: HWAAP-B11B 101-34 Catchment Pit

Location of LUC

Surface impoundment is located 40 feet north of building 101-34.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

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

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICICS

Additional Information

N/A

LUC Title: 101-41 Catchment Pit

Site(s): HWAAP-B20

ROD/DD Title: HWAAP-B20 101-41 Catchment Pit

Location of LUC

HWAAP-B20 consists of three inactive unlined surface impoundments located southwest of bldg 101-41.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

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

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICICS

Additional Information

Land Use Control (LUC) Summary

N/A

LUC Title: 101-65 Catchment Pit

Site(s): HWAAP-B31

ROD/DD Title: HWAAP-B31 101-65 Catchment Pit

Location of LUC

HWAAP-B31 is an inactive unlined surface impoundment pit located south of bldg 101-65.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

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

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: 103-16 Landfill

Site(s): HWAAP-J15

ROD/DD Title: HWAAP-J15 103-16 Landfill

Location of LUC

DD for NFA

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Restrictions on land use

Date in Place: 200008

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICS

Additional Information

N/A

Land Use Control (LUC) Summary

LUC Title: 103-30 Catchment Pit

Site(s): HWAAP-B23

ROD/DD Title: HWAAP-B23 103-30 Catchment Pit

Location of LUC

103-30 Catchment Pit is located south of bldg 103-30.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

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

Date in Place: 199908

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: A04 Babbitt Landfill

Site(s): HWAAP-A04

ROD/DD Title: HWAAP-A04 Babbitt Closed Landfill

Location of LUC

Landfill located southwest of residential area of Babbitt which has been razed

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Restrictions on land use

Date in Place: 200111

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: METALS

Additional Information

N/A

LUC Title: A11 18@5 Disposal Pit

Site(s): HWAAP-A11

ROD/DD Title: HWAAP-A11 MAG 18-5 Disposal Pit

Land Use Control (LUC) Summary

Location of LUC

South Magazine Area

Land Use Restriction: Media specific - Prohibit activities that results in contact with contaminated sediments

Types of Engineering Controls: None

Types of Institutional Controls: Construction Permit, Dig Permits

Date in Place: 200201

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: METALS

Additional Information

N/A

LUC Title: B17B Catchment Pit

Site(s): HWAAP-B17B

ROD/DD Title: HWAAP-B17B Bldg 101-20 Catchment Pit

Location of LUC

101-20 Catchment Pit East of Bldg 101-20

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Construction Permit, Dig Permits, Restrictions on land use

Date in Place: 200008

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: B18 101-62 Catchment Pit

Site(s): HWAAP-B18

ROD/DD Title: HWAAP-B18 101-62 Catchment Pit

Location of LUC

101-62 Catchment Pit

Land Use Restriction: Restrict land use - No residential use

Land Use Control (LUC) Summary

Types of Engineering Controls: None

Types of Institutional Controls: Construction Permit, Dig Permits, Restrictions on land use

Date in Place: 200103

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: B30 101-16 Catchment Pit

Site(s): HWAAP-B30

ROD/DD Title: HWAAP-B30 Building 101-16 Catchment Pit

Location of LUC

101-16 HWAAP-B30

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Construction Permit, Dig Permits, Restrictions on land use

Date in Place: 199911

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: B32 catchment Pit 101-41

Site(s): HWAAP-B32

ROD/DD Title: HWAAP-B32 101-41 Catchment Pit

Location of LUC

HWAAP-B32 catchment Pit

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Construction Permit, Restrictions on land use

Date in Place: 200104

Land Use Control (LUC) Summary

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: H03 Road/Grounds Waste OB

Site(s): HWAAP-H03

ROD/DD Title: HWAAP-H03 Road/Grounds Waste OB Pit

Location of LUC

This site is located east of Hwy 95 in close proximity to the Main Gate at HWAD.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

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

Date in Place: 200111

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: PETROLEUM HYDROCARBON

Additional Information

N/A

LUC Title: HWAAP-34 104-3 Catchment

Site(s): HWAAP-B34

ROD/DD Title: B34 Catchment Pit 104-3

Location of LUC

104-3 Catchment Pit

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Restrictions on land use

Date in Place: 201206

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Land Use Control (LUC) Summary

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: PAH

Additional Information

N/A

LUC Title: HWAAP-A05 Mustard Gas

Site(s): HWAAP-A05

ROD/DD Title: HWAAP-A05 Mustard Gas Disposal Area

Location of LUC

A05 is located in the eastern portion of HWAD's south magazine area, approximately two miles south of US Highway 95 at the foot of the Garfield Hills. A05 has a perimeter fence along the north, west, and south sides to prevent access by on-site personnel. The east side access is limited by Garfield Hills.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Fences

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

Date in Place: 200111

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: HWAAP-B24 102-52 Acid Pit

Site(s): HWAAP-B24

ROD/DD Title: HWAAP-B24 102-52 Acid Pit

Location of LUC

The open pit is located adjacent to Building 102-52.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Notations in Master Plan, Restrictions on land use

Date in Place: 200607

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Land Use Control (LUC) Summary

Documentation Date: 200506

LUC Enforcement: 5 Year Reviews

Contaminants: PCBs, PETROLEUM HYDROCARBON

Additional Information

N/A

LUC Title: HWAAP-C01a/b

Site(s): HWAAP-C01A

ROD/DD Title: HWAAP-C01a/b 102-31 Rotary Deact Furnace

Location of LUC

HWAAP-C01a/b is located at 102-31. This area is fenced.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Notations in Master Plan

Date in Place: 200009

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: METALS

Additional Information

N/A

LUC Title: HWAAP-H01 Fire Training

Site(s): HWAAP-H01

ROD/DD Title: HWAAP-H01 Fire Training Pit

Location of LUC

Fire Training Pit

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Restrictions on land use

Date in Place: 201108

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: PETROLEUM HYDROCARBON

Land Use Control (LUC) Summary

Additional Information

N/A

LUC Title: HWAAP-I11 Bldg 49-9

Site(s): HWAAP-I11

ROD/DD Title: HWAAP-I11 Bldg 49-9 Pit/Landfill

Location of LUC

SWMU-I11 is in the southern part of HWAD's central magazine in the Building 49 group, approximately 4,000 feet north of US Highway 95.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

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

Date in Place: 200106

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: METALS, VOC

Additional Information

N/A

LUC Title: I01 101-44 Catchment Pit

Site(s): HWAAP-I07

ROD/DD Title: HWAAP-I07 101-44 Landfill

Location of LUC

HWAAP-I07 101-44 Catchment Pit

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Restrictions on land use

Date in Place: 201206

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICS, PETROLEUM HYDROCARBON

Additional Information

N/A

Land Use Control (LUC) Summary

LUC Title: I18 104-2 POL Spill

Site(s): HWAAP-I18

ROD/DD Title: HWAAP-I18 Hydrocarbon Spill

Location of LUC

NFA DD

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

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

Date in Place: 200204

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: PETROLEUM HYDROCARBON

Additional Information

N/A

LUC Title: J03 Bldg 70 DF2 Release

Site(s): HWAAP-J03

ROD/DD Title: HWAAP-J03 Building 70 Diesel Fuel Leak

Location of LUC

NFA DD

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Restrictions on land use

Date in Place: 200907

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: PETROLEUM HYDROCARBON

Additional Information

N/A

LUC Title: J11 103-16 landfill/Pile

Site(s): HWAAP-J11

ROD/DD Title: HWAAP-J11 103-16 Landfill/Pile

Land Use Control (LUC) Summary

Location of LUC

DD NFA

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Restrictions on land use

Date in Place: 200008

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: J12 Landscape Landfill

Site(s): HWAAP-J12

ROD/DD Title: HWAAP-J12 Landscape Landfill

Location of LUC

HWAAP-J12 is an inactive landfill used to dispose of landscape debris such as branches, brush and trees.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

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

Date in Place: 200104

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: ORGANICS

Additional Information

N/A

LUC Title: J14 103-6 Trench

Site(s): HWAAP-J14

ROD/DD Title: HWAAP-J14 103-6 Trench

Location of LUC

DD for NFA

Land Use Restriction: Restrict land use - No residential use

Land Use Control (LUC) Summary

Types of Engineering Controls: None

Types of Institutional Controls: Restrictions on land use

Date in Place: 200211

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: J22 50 Group Pits

Site(s): HWAAP-J22

ROD/DD Title: HWAAP-J22 50 Group Pits

Location of LUC

DD NFA

Land Use Restriction: Restrict land use - Mitigation area(s) protection

Types of Engineering Controls: None

Types of Institutional Controls: Restrictions on land use

Date in Place: 199911

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: METALS, PETROLEUM HYDROCARBON

Additional Information

N/A

LUC Title: J28 108-3 Catchment Pits

Site(s): HWAAP-J28

ROD/DD Title: HWAAP-J28 108-3 Catchment Pits

Location of LUC

DD for NFA

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Construction Permit, Dig Permits, Restrictions on land use

Date in Place: 200111

Land Use Control (LUC) Summary

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: METALS

Additional Information

N/A

LUC Title: J29 103-5 Landfill

Site(s): HWAAP-J29

ROD/DD Title: HWAAP-J29 Building 103-5 Landfill

Location of LUC

DD for NFA

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: Signs

Types of Institutional Controls: Restrictions on land use

Date in Place: 201206

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: NITROAROMATICS

Additional Information

N/A

LUC Title: K03a thru K03g

Site(s): HWAAP-K03

ROD/DD Title: HWAAP-K03 Bldg 106-10 UST

Location of LUC

*** K03a thru K03g were combined into one single solid waste management unit ***

K03a- 101-25 7 UST

K03b- 103-6 3 UST

K03c- 106-10 1 UST

K03d- Bldg 13 4 UST

K03e- 20@21 2 UST

K03f- Bldg 95 3 USTs

K03g- Camp Jumbo 5 USTs

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Land Use Control (LUC) Summary

Types of Institutional Controls: Restrictions on land use

Date in Place: 201206

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: PETROLEUM HYDROCARBON

Additional Information

N/A

LUC Title: K03e 20@21 2 USTs

Site(s): HWAAP-K03

ROD/DD Title: HWAAP-K03 Bldg 20-21 UST see K03 106-10

Location of LUC

No Further Action Decision Document

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Restrictions on land use

Date in Place: 199906

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: PETROLEUM HYDROCARBON

Additional Information

N/A

LUC Title: K03g Camp Jumbo 5 USTs

Site(s): HWAAP-K03

ROD/DD Title: HWAAP-K03 Camp Jumbo UST see K03 106-10

Location of LUC

No Further Action Decision Document

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Restrictions on land use

Date in Place: 199910

Modification Date: N/A

Land Use Control (LUC) Summary

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: PETROLEUM HYDROCARBON

Additional Information

N/A

LUC Title: K05 LUST 117-3

Site(s): HWAAP-K05

ROD/DD Title: HWAAP-K05 Lust Site @ Bldg 117-3 UST

Location of LUC

DD for NFA

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Restrictions on land use

Date in Place: 200907

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: 5 Year Reviews

Contaminants: PETROLEUM HYDROCARBON

Additional Information

N/A

Cleanup Program Summary

Installation Historic Activity

The lead organization for HWAD is the AMC and the sub-ordinate command is the Joint Munitions Command (JMC).

HWAD was originally constructed in 1928 as a US Naval Ammunition Depot. The early mission of the depot was to store, service, and issue ammunition to the Pacific area. Following World War II (WWII), the depot was actively involved in the demolition of various types of allied and enemy ammunition. The role of the depot was also expanded to include receiving, renovating, loading, maintaining, storing, and issuing ammunition, explosives, expendable ordnance items, and/or weapons and technical ordnance materials. The depot was also used to test weapons and dispose of unserviceable and/or dangerous ammunition and explosives. In 1977, the depot was transferred to the US Army and renamed Hawthorne Army Ammunition Plant (HWAAP). After the transfer, in 1980, HWAAP was re-designated as a government owned/contractor operated (GO/CO) plant operating under the direction of the former Day and Zimmermann/Basil Corporation (DZB).

From 1980 to 1994 the mission of the depot was to:

- receive, produce, assemble, load, issue, store, renovate, inspect, test, demilitarize, and dispose of conventional ammunition;
- operate and/or maintain in operational readiness cast and fuel-air explosive loading plants, rocket assembly plants, and medium/major caliber assembly lines;
- provide special/experimental high explosive (HE) casting, extruding, and pressing; fuel air explosive loading and support services to designated research and development activities;
- provide storage facilities for war reserve ammunition, and maintain designated ammunition in a state of readiness for mobilization, including assembling or otherwise providing base unit materials; and
- conduct testing of solid propelled munitions, HE warheads, mechanical and electronic fuses, cartridge cases, primers, rocket motors, and other ballistic devices.

On Oct. 1, 1994, HWAAP was redesignated as HWAD and its mission was revised to ship, store, and demilitarize munitions.

HWAD remains a GO/CO facility and is operated by Day and Zimmermann Hawthorne Corporation (DZHC). The government and DZHC employ approximately 575 personnel.

HWAD is not on the NPL. Studies and investigations have been conducted under the guidance of the NDEP. Releases of hazardous substances, pollutants, or contaminants have been located within the meaning of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), and applicable Nevada state law. The regulatory process for the Installation Restoration Program (IRP) is governed under RCRA. The Military Munitions Response Program (MMRP) follows CERCLA.

Installation Program Cleanup Progress

IRP

Prior Year Progress: The performance-based acquisition (PBA) contracts are ongoing and addressing the sites.

Future Plan of Action: Groundwater actions for individual solid waste management units (SWMU) will continue under a PBA. Periodic reviews and LUCs are planned for all sites tracked under site CCHWAAP-I15.

MMRP

Prior Year Progress: The RI is completed for 13 sites. Four sites currently preparing RA decision documents (DD). Remaining sites completed a no further action (NFA) DD.

Future Plan of Action: Award and begin work at the four sites with RA DDs.

CR

Prior Year Progress: Completed CMI at sites CCHWAAP-H02, CCHWAAP-B27b, and CCHWAAP-B27c and continue CMI(O) at CCHWAAP-B29.

Continue CMI contract for groundwater at CCHWAAP-I15.

Future Plan of Action: Implement and operate corrective measures at I15 and continue CMI(O) at B29.

HAWTHORNE ARMY DEPOT
Army Defense Environmental Restoration Program
Installation Restoration Program

IRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 129/123

Installation Site Types with Future and/or Underway Phases

1	Burn Area (HWAAP-I02)
1	Contaminated Ground Water (HWAAP-B24A)
1	Disposal Pit/Dry Well (HWAAP-B26)
1	Landfill (HWAAP-I09)
2	Surface Impoundment/Lagoon (HWAAP-B04, HWAAP-B27A)

Most Widespread Contaminants of Concern

Explosives, 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
HWAAP-A06A	OLD BOMB DISPOSAL AREA 1	IRA	OTHER	1988
HWAAP-B20	101-41 CATCHMENT PIT	IRA	COMPOSTING	1997
HWAAP-B32	101-41 CATCHMENT PIT	FRA	COMPOSTING	1997
HWAAP-H04	NAVYSIDE LANDFILL	IRA	OTHER	1997
HWAAP-J03	BLDG 70 DIESEL FUEL LEAK	FRA	BIOVENTING	1997
HWAAP-K04	ABOVEGROUND STORAGE TANKS AT BLDG 70	FRA	REMOVAL	1997
HWAAP-A09B	BATTERY DISPOSAL AREA	FRA	OTHER	1998
HWAAP-A08	CONSTRUCTION DEBRIS LANDFILL	IRA	OTHER	1999
HWAAP-B06	101-13 IMPOUNDMENT	FRA	BIOREMEDIATION	1999
HWAAP-B07	101-1 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B08	101-1 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B09	101-32 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B10	101-3 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B11A	101-31 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B11B	101-34 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B12	101-10 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B13	101-29/36 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B16	101-18 CATCHMENT PIT	FRA	BIOREMEDIATION - IN SITU	1999
HWAAP-B17A	101-20 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B17B	101-20 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B18	101-62 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B19	101-11 CATCHMENT PIT	FRA	BIOREMEDIATION	1999

IRP Summary

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

Site ID	Site Name	Action	Remedy	FY
HWAAP-B22A	101-44 CATCHMENT PIT	FRA	OTHER	1999
HWAAP-B22B	101-44 CATCHMENT PIT	FRA	OTHER	1999
HWAAP-B23	103-30 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-B30	101-16 CATCHMENT BASIN	FRA	BIOREMEDIATION	1999
HWAAP-B31	101-65 CATCHMENT PIT	FRA	BIOREMEDIATION	1999
HWAAP-H05	OLD DEPOT LAUNDRY WASHOUT	IRA	OTHER	1999
HWAAP-I03	104-7 PIT #1	IRA	OTHER	1999
HWAAP-I04	104-7 PIT #2	IRA	OTHER	1999
HWAAP-J11	103-16 LANDFILL/PILE	IRA	OTHER	1999
HWAAP-J12	LANDSCAPE LANDFILL	IRA	OTHER	1999
HWAAP-K05	LUST SITE AT BLDG 117-3	FRA	BIOVENTING	1999
HWAAP-A04	BABBITT CLOSED LANDFILL	FRA	OTHER	2000
HWAAP-B05	101-15 IMPOUNDMENT	FRA	BIOREMEDIATION	2000
HWAAP-B27B	103-8/10 OXIDATION DITCH	FRA	OTHER	2000
HWAAP-B27C	103-20 SURFACE IMPOUNDMENT	FRA	OTHER	2000
HWAAP-H01	FIRE TNG PIT	FRA	OTHER	2000
HWAAP-I18	104-2 HYDROCARBON SPILL	FRA	BIOREMEDIATION - IN SITU	2000
HWAAP-J15	103-16 LANDFILL	IRA	OTHER	2000
HWAAP-K03	UST SITES - INST WIDE	FRA	BIOVENTING	2000
HWAAP-A11	MAG 18-5 DISPOSAL PIT	FRA	OTHER	2001
HWAAP-C01A	102-31 ROTARY DEACTIVE FURNA	FRA	OTHER	2001
HWAAP-I11	49-9 PIT/LANDFILL	FRA	OTHER	2001
HWAAP-J14	103-6 TRENCH	FRA	REMOVAL	2001
HWAAP-J28	108-3 CATCHMENT PITS	FRA	OTHER	2001
HWAAP-J29	BUILDING 103-5 LANDFILL	FRA	OTHER	2004
HWAAP-K10	BURIED PAINT	IRA	REMOVAL	2004
HWAAP-B20	101-41 CATCHMENT PIT	FRA	SOLVENT EXTRACTION	2005
HWAAP-I07	101-44 LANDFILL	FRA	REMOVAL	2005
HWAAP-B29	103-41 UNLINED PONDS	FRA	COMPOSTING	2006
HWAAP-B24	102-52 ACID PIT	FRA	INCINERATION	2009
HWAAP-B24A	BLDG 336: FUEL STORAGE	FRA	NATURAL ATTENUATION	2009
HWAAP-B26	103-6 POL PIT	FRA	SOIL VAPOR EXTRACTION	2009
HWAAP-B27A	103-16 CATCHMENT PIT	FRA	EX SITU SOIL TREATMENT	2009
PBC@Hawthorne	PBC	FRA	OTHER	2009
HWAAP-B27A	103-16 CATCHMENT PIT	FRA	REMOVAL	2011
HWAAP-B26	103-6 POL PIT	FRA	FREE PRODUCT RECOVERY	2012

IRP Summary

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

Site ID	Site Name	Action	Remedy	FY
HWAAP-B27A	103-16 CATCHMENT PIT	FRA	NATURAL ATTENUATION	2012
HWAAP-102	110 GROUP OPEN BURNING PIT	FRA	CAPPING	2015
HWAAP-109	49-10 PIT/LANDFILL #1 & #2	FRA	NATURAL ATTENUATION	2015

Duration of IRP

Date of IRP Inception: 198407

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201809/204709

Date of IRP completion including Long Term Management (LTM): 204709

IRP Contamination Assessment

Contamination Assessment Overview

Since 1974, site investigations and groundwater monitoring have been conducted by the Army, the US Army Environmental Hygiene Agency (USAEHA) [now the US Army Center for Health Promotion and Preventive Medicine (USACHPPM)], the US Army Toxic and Hazardous Materials Agency (USATHAMA) (now USAEC), the US Geological Survey (USGS), the US Army Corps of Engineers (USACE), and numerous contractors in various areas throughout the installation. The primary contaminants of concern (COC) are explosives [2,4,6-trinitrotoluene (TNT), trichloroethylene (TCE), 1,3,5-trinitro-1,3,5-triazacyclohexane (RDX), nitrate/nitrite, and unexploded ordnance (UXO)].

Prior to the transfer of HWAAP to the Department of Army, the USGS conducted a study in three phases under the direction of the Department of Navy to assess the possibility of groundwater contamination in the vicinity of the disposal pits at facilities 103-41 (HWAAP-B29) and 103-16 (HWAAP-B27A). The disposal pits were constructed to receive explosive waste from the demilitarization operation. The explosive waste included composition D (ammonium picrate), amatol (TNT plus ammonium nitrate), and RDX.

From November 1974 to November 1977, in Phases I and III, the USGS installed a total of 26 exploratory wells in the immediate proximity and northwest of the disposal area adjacent to demilitarization facility 103-41 (HWAAP-B29). Analysis of water samples taken from the wells showed levels of nitrate/nitrite above background and several of the wells were found to contain TNT. The highest concentrations of TNT [300 parts per billion (ppb) and 430 ppb] were detected in two separate determinations in one of the wells. The compound dinitrotoluene (DNT) was also detected from one of the wells. A study indicated a narrow plume of TNT contamination in a northwesterly direction.

From June 1976 to November 1977, in Phase II, the USGS installed eight exploratory wells in the vicinity of disposal pits adjacent to the demilitarization facility 103-16 (HWAAP-B27A). Chemical analysis of the groundwater samples revealed nitrate/nitrite levels to be above background, in most cases, and one sample from one of the wells showed TNT at a trace level. Based on further analysis during the investigation phase, chemical analyses have not reached action levels for groundwater.

In 1977, after the transfer of HWAAP to the Department of Army, the US Army Armament Material Readiness Command (ARRCOM) requested that USATHAMA, then known as Project Manager for Chemical Demilitarization and Installation Restoration (PMCDIR), conduct assessments of HWAAP to determine if there was any contamination resulting from past waste disposal practices.

USATHAMA conducted the installation assessment between 1977 and 1981. Over 25 pits were identified as having received explosive wastes from loading and demilitarization operations in the production areas: 101, 102, 103, 104/49, and 108. The assessment concluded that TNT had migrated in a narrow plume to a distance of between 1,200 and 3,200 feet downgradient from 103-41 disposal pits. The migration rate of TNT was slower than the groundwater rate. The assessment also concluded that nitrogen compounds, primarily nitrate, were migrating in two plumes toward Walker Lake. Between May 1 and May 5, 1995, a study which was performed by the USAEHA showed that HWAD operations had no impact on Walker Lake.

During the assessment a disposal area for mustard and phosgene chemical munitions (HWAAP-A05) was located. The area was first used during WWII. It was last used in 1946 to decontaminate and bury an unspecified quantity of mustard munitions and their toxic agent contents. In 1991, an attempt was made to locate the munitions and to determine if any mustard agent remained in the soil or in the munitions. Several pits were located and excavated. The M15 chemical detectors gave positive readings for mustard in only one munition; however, laboratory analyses of samples taken from the munitions were negative. Testing for mustard vapors from the pits was negative.

Since the total pit was not excavated, the area could still have chemical agent munitions buried at the site.

Several test ranges were also identified in the assessment. Of particular concern is the range near Walker Lake where extensive munitions testing was conducted from WWII to the early-1970s. Most of the rounds impacted in the lake and many remain there as UXO. Live rounds are frequently found on the receding shoreline of Walker Lake.

Another AOC is the Naval Inshore Operations Training Center (NIOTC) and firing range. Explosive ordnance disposal personnel documented this as one of the most heavily UXO-contaminated areas at HWAD.

The Rocket Test Area located near the southern boundary of HWAD also contains UXO in the impact area. Adjacent to the Rocket Test Area there is also a site that was used for fuse and ordnance disposal from WWII through the Korean War. The historical archive from this era concerning past operations at HWAD reported that demolition charges used to destroy the

IRP Contamination Assessment

Contamination Assessment Overview

munitions were so large that live munitions were found as far as 1 mile from the detonation pit. The area is considered extremely hazardous and is fenced to discourage trespassing.

Between May 1987 and August 1988 an evaluation of SWMUs was performed by the USAEHA. At that time, 82 SWMUs were identified. From July 1992 through December 1992 site screening inspections were conducted to verify the SWMUs, and data were gathered for the US Environmental Protection Agency (USEPA) to revise the Hazard Ranking System (HRS) score. As a result of the site screening inspections, a total of 123 SWMUs were identified.

The following RIs were conducted under the IRP - Defense Environmental Restoration Account (DERA):

- Group A (33 SWMUs) (beginning in 1993),
- Group B (55 SWMUs),
- Old bomb disposal sites (12 SWMUs) (UXO and explosive disposal and burned sites),
- Seven underground storage tank (UST) sites, and
- One aboveground storage tank (AST) site (beginning in 1994).

The Group A SWMUs consist of 29 catchment pits/ponds/impoundments sites, two disposal pit sites, one disposal pile site, and one landfill. The work performed includes surface geophysics survey, near-surface soil and subsurface soil sampling and analyses, and groundwater sampling at three existing wells. Baseline risk assessments (BRA) for the 29 sites were completed in November 1997. Groundwater sampling is included in the long-term GWM plan.

The Group B SWMUs consist of 23 landfills, 15 catchment pits/impoundments, two deactivation furnace areas, seven disposal pits/ditches/trenches, two open burning (OB) pits, five discharge/spill areas, and one mustard gas disposal area. The work performed included aerial photography, global positioning system (GPS) surveying, airborne geophysics surveying, surface geophysics survey, subsurface screening for utilities and UXOs, soil gas survey, soil sampling and analyses, and groundwater measurements.

Groundwater sampling at the following sites is part of the groundwater monitoring program: B04, I07, I15, B05, B06, J05, A11, A05, J08, J09, J06, J10, I06, J21, J22, J07, J24, J11/15, J14, B25, C01a/b, J16, J02, I02, J17, I05, I03/04, K18, I11, I17, B28a, B28b, B28c, B28d, I09/10, J23, I08, B27b, B27c, I13, I14, J27, J26, A08, J12, J28, J29, J04, J25, J13, and A03. BRAs for most of the sites were included in the RI/FS. Under the PBA, the USAEC, the HWAD, the NDEP, and the contractor agreed that revised risk assessments would be completed as necessary.

During the summer of 1997, a pilot study for windrow composting was performed. In this study, 2,500 cubic yards (cy) of soil containing TNT, [high melting point explosive, a byproduct of RDX], and DNT were treated at SWMUs B20, B32, and I15. Remediation was completed at these sites and they are currently going through the closure process. As part of the pilot study, regulatory requirements for the process as well as operating conditions were established for the site. The involved regulatory agencies determined that the remediation process would not require a containment building or a solid surface pad.

Using treated wooden ammunition boxes as a wood source was deemed acceptable and the original study was expanded to include 300 cy of ammonium picrate contaminated soil. Results indicate that this treatment process will successfully remediate soil contaminated with ammonium picrate for which, prior to this test, there was no accepted treatment methodology.

In February 2008, a site tour was conducted by NDEP, USAEC, and HWAD Environmental Office. On the tour numerous AOCs were identified. Picric acid and white phosphorus rounds with HE bursters were specifically identified and noted in the disposal pit at A06B. When the IRP information was reviewed, the installation did not have specific information regarding the location of these AOCs. The NDEP, the USAEC, and the HWAD Environmental Office commissioned a survey conducted in February and March 2007 by Marine Corps Programs Office (MCPO) to identify GPS locations of the current IRP sites and identify any additional AOCs. The results of the survey are being reviewed by the USAEC to determine a path forward for the expanded AOCs. The site narratives reflect the results of the 2008 survey. In 2009, 4 miles of fencing was installed around these sites to restrict access to the AOCs.

Seven UST sites are located at Building (Bldg) 13, 103-6, 101-25, 94, Camp Jumbo, Bldg 106-10, and 20-21. Between 1991 and 1993 tanks were removed and sampling results showed evidence of elevated levels of total petroleum hydrocarbons (TPH) in the soil ranging from about 6,000 milligrams per kilogram (mg/kg) to 73,000 mg/kg at depths ranging from 5 to 19 feet. For three sites (Camp Jumbo, Bldg 106-10, and Bldg 20-21) a DD for NFA was approved and signed by the regulatory agency on Oct. 3, 1996. Three bioventing systems at Bldgs 13, 101-25, and 103-6 were monitored under the PBA.

IRP Contamination Assessment

Contamination Assessment Overview

The AST site, HWAAP-J03 (Bldg 70 diesel leak), consists of two 100,000-gallon ASTs that were installed in the 1940s and were leaking diesel fuel over a period of time. In 1991, the contaminated soils were removed by HWAD creating a large excavation pit. An RI conducted in 1994 indicated that soil contamination of TPH was at an elevated level of over 40,000 mg/kg in the excavation pit, and TPH in groundwater was at 11 milligrams per liter (mg/L). In February 1997 the two ASTs were removed. A bioventing pilot study was completed at this site. Stockpiled soils contaminated with petroleum hydrocarbons from 12 sites were collected at HWAAP-J03. This soil was used to fill the excavation pit. The enhanced bioventing test results indicate that bioventing may be able to remediate the site within eight years. This system will be monitored under the PBA. Windrow composting of sites within the 101 production area is complete.

This IAP includes only the IRP eligible sites and those listed in AEDB-R.

In August 2001, the HWAD conducted a periodic review of the January 1996 soil action levels. Based on this review and the review of the NDEP soil action levels, the NDEP standards derived from USEPA Region IX preliminary remediation goals (PRG) were adopted.

Since 2001, PBAs have been awarded to completely characterize the remaining SWMUs, evaluate appropriate remedies, and initiate cleanup strategies. Five-year reviews of RIP/RC sites were completed in 2010 and 2015.

Cleanup Exit Strategy

In August 2006 a PBA was awarded to bring the following sites to RC: B04, B20, B24, B24A, B26, B27A, I02, I09, J03, K03 (a, b and d), K05. In addition, groundwater monitoring was captured under a base-wide program. Five-year reviews and administrative LUCs will be tracked under site CCHWAAP-I15. The remaining groundwater sites include B04, B24a, B26, B27a, and I09. B24a and B27a are continuing groundwater monitoring under a new PBA and exit strategies are being initiated. The I02 remedy was completed in December 2014.

IRP Previous Studies

Year	Title	Author	Date
1967	A Brief Appraisal of the Water Resources of the Walker Lake Area, Mineral, Lyon, and Churchill Counties, NV	Reconnaissance Series Report No. 40, Everett, D.E. and F.E. Rush; NV DWR	JAN-1967
1974	Hydrologic Regimen of Walker Lake, Mineral County, NV	WR Information Series, Report No. 21., Rush, F.E.; NV DWR and USGS	JAN-1974
1975	Source of Nitrate in Water from Supply Well 8, Hawthorne Naval Ammunition Depot, Nevada	Van Denburgh, A.S., F.E. Rush; US Geological Survey Administrative Progress Report	JAN-1975
	Groundwater Contamination by Percolating Explosives Wastes, Hawthorne Army Ammunition Plant, Mineral County, Nevada, Phase I, November 1974	US Department of the Interior, Geologic Survey	JUN-1975
1977	Preliminary Investigation of the Geothermal Resources near Hawthorne, NV. Project Report No. 50	Bohm, B.W. and R.L. Jacobsen; Water Resources Center, Desert Research Institute	JAN-1977
	Geothermal Potential of the Naval Ammunition Depot, Hawthorne, NV	Whelan, J.	JAN-1977
	Installation Assessment of Naval Ammunition Depot, Hawthorne, NV. Records Evaluation Report No. 114	US Army Toxic and Hazardous Materials Agency, Aberdeen Proving Ground, MD	AUG-1977
	Groundwater Contamination by Percolating Explosives Wastes, Hawthorne Army Ammunition Plant, Mineral County, Nevada, Phase II, June 1976	USGS	NOV-1977
	Groundwater Contamination by Percolating Explosives Wastes, Hawthorne Army Ammunition Plant, Mineral County, Nevada, Phase III	USGS	NOV-1977
1978	Analysis of Surface Water and Sediment Samples from HWAAP for TNT, Picric Acid and RDX	Energetic Materials Div, LCWSL, ARRADCOM, Dover, NJ	NOV-1978
1980	Groundwater Contamination by Percolating Explosives Wastes, HWAAP, Mineral County, NV, Phase IV, Reconnaissance Near Walker Lake	USGS	JAN-1980
	Groundwater Contamination by Percolating Explosives wastes, Hawthorne Army Ammunition Plant, Mineral County, NV, Phase II, Reconnaissance of the 103-16 Area	Van Denburgh, A.S., R.R. Squires, and D.B. Wood; US Geological Survey Administrative Progress Report	JAN-1980
	Groundwater Contamination by Percolating Explosives Wastes, Hawthorne Army Ammunition Plant, Mineral County, NV, Phase III, Reconnaissance of the 103-41 Area	Van Denburgh, A.S., D.G. Schaefer, and D.B. Wood; US Geological Survey Administrative Progress Report	JAN-1980
1981	Field Investigation of Uncontrolled Hazardous Waste Sites, FIT Project, Site Inspection Report on Hawthorne	Ecology & Environment, Inc.	JAN-1981

IRP Previous Studies

1981	Title	Author	Date
	Army Ammunition Plant		
	Final Report, Survey and Assessment of Hawthorne Army Ammunition Plant, Hawthorne, Nevada	USATHAMA, Aberdeen Proving Ground, Maryland	SEP-1981
	Phase II, Hazardous Waste Management Special Study No. 39-26-0147-83, DARCOM Open-Burning/Open-Detonation Grounds Evaluation	HWAAP, Hawthorne, NV	OCT-1981
1982			
	Hazardous Waste Technical Consultation No. 38-26-0225-82, Waiver of Groundwater Monitoring Requirements	HWAAP, Hawthorne, NV	JUN-1982
	Water Quality Engineering Consultation No. 32-66-0176-83	HWAAP, Hawthorne, NV	DEC-1982
1983			
	Water Quality Engineering Special Study No. 32-24-0444-84, Evaluation of Wastewater Treatment Alternatives	HWAAP, Hawthorne, NV	MAY-1983
	Hazardous Waste Management Survey No. 37-26-0335-84	HWAAP, Hawthorne, NV	SEP-1983
	Closure/Post-Closure Plans, Hawthorne Army Ammunition Plant, Contract No. DAAA09-80-C-3011	Facilities Engineering Division, Day & Zimmermann/Basil Corporation	NOV-1983
1985			
	Hazardous Waste Investigation Report	Coulson, A.; NDEP at HWAAP	JAN-1985
	Letter, HWAAP to EPA Region IX. Information regarding potential releases from Solid Waste Management Units	HWAAP	NOV-1985
1987			
	Data on GW quality for the Walker Lake 1 degrees by 2 degrees quadrangle, Western Nevada and Eastern California	Open File Report #85-0648-1, Welch, A.H. and R.P. Williams; US Geological Survey	JAN-1987
1988			
	Groundwater Contamination Survey No. 38-26-0850-88. Evaluation of Solid Waste Management Units. Final Report. HWAAP, Hawthorne, NV 12-19 May 1987 and 1-5 August 1988	USAEHA	JAN-1988
	RCRA Facility Assessment, Hawthorne Army Ammunition Plant, TES IV Work Assignment No. 419	Jacobs Engineering	JAN-1988
	Services to Departments of Defense and Energy and other Government Agencies and their Contractors, Hawthorne Project, Hawthorne, NV	Pacific Environmental Resources, Inc. Walnut Creek, CA	JAN-1988
	Soil Survey Project after Action Report, Hawthorne Army Ammunition Plant	US Army Tech Escort Unit , US Army Corps of Engineers	JAN-1988
	Site Assessment of Parcels A, B, C, and D on Hawthorne Army Ammunition Plant, NV	US Army Toxic And Hazardous Materials Agency	JAN-1988
1989			
	Letter Arver Ferguson, USACE, Fort Worth District, from Jacqueline Wyland, USEPA Chief, Office of	Wyland, J., USEPA	JAN-1989

IRP Previous Studies

1989	Title	Author	Date
	Federal Facilities. Subject: Comments on Hazardous waste cleanup at HWAAP		
	Final Report Ordnance and Environmental Investigation at HWAAP, Hawthorne, NV, Volume 1,2, 3 and Appendices A-G	CEHND, International Technology Corporation (IT Corp)	MAY-1989
	Air Pollution Emission Assessment No. 42-21-0644-90	HWAAP, Hawthorne, NV	AUG-1989
	Industrial Radiation Survey #27-43-0029-89	DA	AUG-1989
	Investigation and Evaluation of Underground Storage Tanks	Hawthorne, NV, HWAAP	SEP-1989
	Hazardous Wastes Management Consultation Survey No. 37-66-0169-90	HWAAP, NV	OCT-1989
1990			
	Closure of Western Area Demilitarization Facility Bulk Slurry Incinerator and rotary Furnaces, Hawthorne Army Ammunition Plant, Nevada, Hazardous Waste Management Study No. 37-26-0479-91	US Army Environmental Hygiene Agency	JAN-1990
	Range Condition and Vegetation Inventory, Hawthorne Army Ammunition Plant (HWAAP), with maps	Rathburn, F.W.	JAN-1990
	Summary Report, Phase I Investigation for Closure of 101 Area Surface Impoundments	Day & Zimmermann/Basil Corporation by Waterworks, Escalon, CA	MAR-1990
	Geohydrologic Study No. 38-26-0371-91, Western Area Demilitarization Facility, HWAAP, Hawthorne, NV	USAEHA	OCT-1990
1991			
	Soil Survey of Hawthorne Army Ammunition Plant, NV	US Department of Agriculture, Soil Conservation Service	JAN-1991
	Disposal of Schweer Drive Housing Area, Hawthorne Army Ammunition Plant, Hawthorne, NV. Preliminary Assessment Screening No. 38-26-0380-91	US Army Environmental Hygiene Agency	FEB-1991
1992			
	Geohydrologic Study No. 38-26-KP66-92, Former Underground Storage Tank Sites, HWAAP, Hawthorne, NV	USAEHA	AUG-1992
	Preliminary Assessment Screening No. 38-26-KS38-92, Babbitt Landfill	USAEHA	AUG-1992
	Site Screening Inspection (SSI) for HWAAP, Hawthorne, NV	USATHAMA	DEC-1992
	Hazard Ranking System (HRS2) Score for HWAAP, Hawthorne, NV	USATHAMA	DEC-1992
1993			
	RCRA Part B Application for Hawthorne Army Ammunition Plant	Earth Technology Corporation,	JAN-1993
	Nevada Natural Heritage Program. In preparation. Database search and listing of sensitive species in selected areas of HWAAP	Tetra Tech, Inc.	NOV-1993
	Conceptual Workplan Underground Storage Tanks	Woodward Clyde	NOV-1993
1994			
	Final RFA work plan, 9 SWMUs, HWAAP	Ecology & Environment, Inc.	JAN-1994
	Final RFA work plan, 24 SWMUs, HWAAP	Ecology & Environment, Inc.	JAN-1994

IRP Previous Studies

1994	Title	Author	Date
	Revised pages of final RFA work plan for 24 SWMUs, HWAAP	Ecology & Environment, Inc.	JAN-1994
	Airborne Ground Penetration Radar Survey Report, Old Bomb Disposal Areas, Vol 1 & 2, HWAD	Airborne Environmental Services	FEB-1994
	Remedial Investigation, Final Work Plan, Vol 2, HWAAP	Tetra Tech, Inc.	MAY-1994
	Final Workplan Vol II: Investigation Plan Group B SWMU/SWMU Field Sampling & Analysis Plans,	Tetra Tech, Inc.	MAY-1994
	Final Site Safety & Health Plan (SSHP) RI	Tetra Tech, Inc.	JUN-1994
	Remedial Investigation, Final Work Plan, Vol 1, HWAAP	Tetra Tech, Inc.	JUN-1994
	Final Site Safety and Health Plan for RI, HWAAP	Tetra Tech, Inc.	JUN-1994
	Final Chemical Data Acquisition Plan/Remedial Investigation Plan Group B SWMU	Tetra Tech, Inc.	JUN-1994
	Remedial Investigation Group B SWMU/Comprehensive Certificates of Analysis BC Analytical Order #9407443, 9408007, 9408106	Tetra Tech, Inc.	JUN-1994
	RI Work Plan, Bldg 70 Diesel Leak, HWAAP	Tetra Tech, Inc.	AUG-1994
1995	UST Pilot remediation plan	DZB	FEB-1995
	Data & Documentation Transfer, Group B SWMUs, Vol 1-3	Tetra Tech, Inc.	FEB-1995
	Final RFA Report for 9 SWMUs, HWAD	Ecology & Environment, Inc.	APR-1995
	Final RFA Report for 24 SWMUs, HWAD	Ecology & Environment, Inc.	APR-1995
	Quality Control Summary Report, RFA of 9 & 24 SWMUs, HWAD	Ecology & Environment, Inc.	APR-1995
	RI Phase II Groups A&B SWMU - Monument Installation Plan & Cost Estimate	Tetra Tech	MAY-1995
	Monument Installation Plan, HWAD	Tetra Tech, Inc.	JUN-1995
	Site Assessment, Rodeo Grounds Community Pit and Dock 1 Borrow Pits, HWAD	CESPK	SEP-1995
	Airborne Ground Penetration Radar Survey, part 1-9, HWAD	Airborne Environmental Services	SEP-1995
1996	Group A & B SWMUs, Proposed Modification to CDAP, HWAD	Tetra Tech, Inc.	FEB-1996
	Final Closure Report for SWMUs: HWAAP-A03, B28a-d, I14, J04-10, J13, J17, J21, J22, J24, HWAD,	Tetra Tech, Inc.	FEB-1996
	Final Workplan Underground Storage Tank Sites Bldg 13, Enhanced Bioremediation Pilot Test	Tetra Tech, Inc.	FEB-1996
	Final RFI Work Plan, Group A SWMUs, HWAD	Tetra Tech, Inc.	MAR-1996
	Final Data Package, Group B SWMUs with Recommendations for Further Action, Vol 1, 2a & b, HWAD	Tetra Tech, Inc.	APR-1996
	Final Workplan RCRA Facility Investigation Group A SWMUS	Parsons	APR-1996
	Field Investigation Plan Amendment: RCRA Facility Investigation of Group A Solid Waste Management Units, HWAD	Ecology & Environment, Inc.	JUN-1996

IRP Previous Studies

1996

Title	Author	Date
Draft Design Technical Specifications for Remedial Bioventing Systems at Three Underground Storage Tank Sites, HWAD	Tetra Tech, Inc.	JUL-1996
Building 70, AST Removal, Project Work Plan, HWAD	Davy International	SEP-1996
Draft Summary of Report for the Building 13 Enhanced Bioremediation Pilot Test, HWAD	Tetra Tech, Inc.	SEP-1996
Final Site Safety and Health Plan, Remedial Investigation Group A and B Solid Waste Management Units	Tetra Tech, Inc.	SEP-1996
Babbitt Landfill Excavation Technical Memorandum	Ecology	OCT-1996
Final Site Safety & Health Plan (SSHP) RI for A&B SWMUs	Tetra Tech, Inc.	OCT-1996
Analytical Lab Report for Dioxins & Dibenzofurans for SWMU H01	Ecology	NOV-1996
Complete Review of the CHPPM Risk Assessment Review for the Group A&B SWMUs	Tetra Tech, Inc.	NOV-1996
Quality Control Summary Report for Additional Work at the Babbitt Landfill SWMU A04	Ecology	NOV-1996
Final Summary of Report for the Building 13 Enhanced Bioremediation Pilot Test, HWAD	Tetra Tech, Inc.	DEC-1996
Field Investigation Photolog: RCRA Facility Investigation of Group A Solid Waste Management Units, HWAD	Ecology and Environment, Inc.	DEC-1996

1997

Final Sampling and Analysis Plan	Tetra Tech, Inc.	JAN-1997
Final Design Technical Specifications for Remedial Bioventing Systems at Three Underground Storage Tank Sites, HWAD	Tetra Tech, Inc.	JAN-1997
Final Data Package, Group B SWMUs with Recommendations for Further Action, Vol 1, 2a & b, HWAD	Tetra Tech, Inc.	JAN-1997
Final Standard Operating Procedures for Ground Water Sampling at HWAD	Tetra Tech, Inc.	JAN-1997
Final Site Safety and Health Plan, Remedial Investigation Group A and B Solid Waste Management Units	Tetra Tech, Inc.	JAN-1997
Final Sampling & Analysis Plan RI Group A&B SWMU - Revised from 1/1/97	Tetra Tech, Inc.	FEB-1997
Final Technical Memorandum Background Soil Sampling	Tetra Tech, Inc.	MAR-1997
Draft Bldg 70, AST Removal Closure Report	Davy	APR-1997
Draft Site-Specific Human Health Risk Evaluation SWMU B24-102-52 Acid Impoundment,	Tetra Tech, Inc.	APR-1997
Final Workplan Bldg 70 Enhanced Bioremediation Pilot Test	Tetra Tech, Inc.	MAY-1997
Final RCRA Facility Investigation Report for Group A Solid Waste Management Units A-04, B-16, B-24, B-26 and H-01	Ecology & Environment, Inc.	MAY-1997
Draft Letter Report of the Bench-Scale Treatability Study for Bioremediating Ammonium Picrate in Soil	Tetra Tech, Inc.	JUL-1997
Quarterly Groundwater Monitoring Report 2nd Qtr/97 Appendix D	Tetra Tech, Inc.	JUL-1997

IRP Previous Studies

1997	Title	Author	Date
	Quarterly Groundwater Monitoring Report 1st Qtr/97,	Tetra Tech, Inc.	SEP-1997
	Quarterly Groundwater Monitoring Report 3rd Qtr/97	Tetra Tech, Inc.	NOV-1997
	Draft Report Bioremediation Pilot Study Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	NOV-1997
	Final - Remedial Investigation Report SWMUs B05-B31	Tetra Tech, Inc.	DEC-1997
1998	Final Engineering Evaluation/Cost Analysis For Explosives Remediation, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	JAN-1998
	Draft Project work Plan, Additional Remedial Investigation SWMUs B-26, B27b and J-28, Hawthorne Army Depot, Hawthorne, Nevada	Allied Technology Group, Inc	JAN-1998
	1997 Annual Ground Water Monitoring Report, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	FEB-1998
	West 101 Production Area Soil Remediation Hawthorne Army Depot, Hawthorne, Nevada	US Army Corps of Engineers, Sacramento District	FEB-1998
	Final Project Work Plan, Installation of Remedial Bioventing Systems at Two Former UST Sites, Hawthorne Army Depot, Hawthorne, Nevada	Allied Technology Group	MAR-1998
	Final Soil Gas Implementation Technical Memorandum, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	APR-1998
	Building 70 Enhanced Bioremediation Pilot Test, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	APR-1998
	Final Bioremediation Pilot Study Report of Explosives in Soil, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	MAY-1998
	1st Quarter Ground Water Sampling Report, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	MAY-1998
	Final Well Abandonment Work Plan, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	JUN-1998
	Soil Gas Results Technical Memorandum, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	AUG-1998
	Final Ground Water Sampling Work Plan and Quality Assurance Plan, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	AUG-1998
	2nd Quarter Ground Water Sampling Report, Hawthorne Army Depot, Hawthorne, Nevada,	Tetra Tech, Inc.	AUG-1998
	Draft Well Abandonment Closure Report, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	AUG-1998
	Sampling and Analysis Plan West 101 Production Area Soil Remediation, Hawthorne Army Depot, Hawthorne, Nevada	US Army Corps of Engineers, Sacramento District	AUG-1998
	Remedial Activity Report and Operations and Maintenance Manual, Installation of Remedial Bioventing Systems at Two Former UST Sites, Hawthorne Army Depot, Hawthorne, Nevada	Allied Technology Group, Inc.	AUG-1998
	Remedial Investigation Report SWMUs B26, B27b and J28, Hawthorne Army Depot, Hawthorne, Nevada	Allied Technology Group, Inc.	AUG-1998
	Final Well Abandonment Closure Report, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	SEP-1998
	Project Workplan West 101 Production Area Soil Remediation, Hawthorne Army Depot, Hawthorne,	Harding Lawson Associates	SEP-1998

IRP Previous Studies

1998	Title	Author	Date
	Nevada		
	Final RI Report for SWMUs J25, B04, B22a, B22b, B23, B27a, B29, I02, I07 & I15,	Tetra Tech, Inc.	OCT-1998
	Final RI Report for SWMUs A08, B20, and B27c	Tetra Tech, Inc.	NOV-1998
	Building 70 Enhanced Bioremediation Radius of Influence Test Report, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	NOV-1998
	Final RI Report for SWMU B32, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	NOV-1998
	3rd Quarter Ground Water Sampling Report, Hawthorne Army Depot, Hawthorne, Nevada	Tetra Tech, Inc.	NOV-1998
	Final RI Report for SWMUs H05, C01a/01b, B25, B27b, I03-I06, I17, I18, J11, J14, J15, J23, J28, J29 & H04	Tetra Tech, Inc.	DEC-1998
1999			
	Final RI Reports for SWMUs I08, I13, I09 and I10	Tetra Tech, Inc.	JAN-1999
	Final - Remedial Investigation Report SWMU I09/10 Bldg 49-10 Pits/Landfill	Tetra Tech	JAN-1999
	Final RI Reports for SWMUs J02, I11 and J16	Tetra Tech, Inc.	FEB-1999
	1998 Annual Groundwater Monitoring Report Appendix F	Tetra Tech, Inc.	FEB-1999
	Remedial Investigation Report SWMUS B-26, B27B & J-28	Tetra Tech	MAR-1999
	Final - Qtrly Groundwater Monitoring Report 1st Qtr 99 Appendix D (1 of 2)	Tetra Tech	APR-1999
	Final - Qtrly Groundwater Monitoring Report 1st Qtr 99 Appendix D (2 of 2)	Tetra Tech	APR-1999
	Final Qtrly Groundwater Monitoring Report 2nd Qtr 99	Tetra Tech, Inc.	JUL-1999
	Final - Qtrly Groundwater Monitoring Report 2nd Qtr 98	Tetra Tech	JUL-1999
	Final - Scope of Work Babbitt Landfill Design	USACE	SEP-1999
	Final - Workplan Remedial Investigations at SWMUS - H05 Old Depot Laundry Washout B20 Bldg 101-41 Catchment Pits & I09/10 Bldg 49-10 Pit/Landfill	Tetra Tech	SEP-1999
	Final Report Screening Survey SWMU B20	Gore Sorber	OCT-1999
	Final - Qtrly Groundwater Monitoring Report 3rd Qtr 99	Tetra Tech	OCT-1999
	Final Workplan In Situ Lead Remediation Treatability Study at SWMU C01A/B, Bldg 102-31 Rotary Deactivation Furnaces	Tetra Tech, Inc.	OCT-1999
2000			
	1999 Annual Groundwater Monitoring Report	Tetra Tech, Inc.	FEB-2000
	Final Workplan In-Situ Lead Remediation Treatability Study at SWMU C01A/B, Bldg 102-31 Rotary Deactivation Furnaces	Tetra Tech, Inc.	JUL-2000
	Final Workplan Bioremediation Pilot Treatability Study for Composting Explosives in Soil,	Tetra Tech, Inc.	AUG-2000
	Three Year Groundwater Monitoring Well Evaluation	Tetra Tech, Inc.	NOV-2000
	Further Investigation on HWAAP-B27c, I-II, J-14, J-28	Tetra Tech, Inc.	DEC-2000

IRP Previous Studies

2001

Title	Author	Date
Risk Assessment Information Paper # 39-EJ-5728-01	USCHPPM	JAN-2001
Letter work plan for Field Activities at I09/10, Draft RI Rpt Addendum for B27c	Tetra Tech, Inc.	FEB-2001
2000 2nd Qtr Groundwater Monitoring Report	Tetra Tech	FEB-2001
Draft RI Rpt Addendum SWMU B20 Bldg 101-41 Catchment Pits, Feb-01	Tetra Tech, Inc.	MAR-2001
HWAAP, Summer 2000, QA/QC summary, CCV, LCS, MS/MSD, Method Blank	Tetra Tech, Inc.	MAR-2001
Letter work plan for well abandonment, USGS106-16MW13 thru MW20 (8 wells)	Tetra Tech, Inc.	MAR-2001
Risk Assessment info paper no. 39-EJ-5726	Dept of Army	MAR-2001
Site Health & Safety Plan for USTs Removal at Bldg 101-42	Laguna Construction	MAR-2001
Workplan Underground Storage Tanks (USTs) Removal at Bldg 101-42	Laguna Construction	MAR-2001
Final Workplan Biodegradation of TPH Contaminated Soil Thru Landfarming	Laguna Construction	APR-2001
3rd Qtr Groundwater Monitoring Report	Tetra Tech	APR-2001
Draft - Remedial Investigation Report Addendum SWMU I-09/I 10 Bldg 49-10 Pits/ Landfill	Tetra Tech	APR-2001
Final Focused Feasibility Study & Workplan Design/Remediation of Gasoline Impacted Soil & Groundwater at Bldg 336	Laguna Construction	MAY-2001
Final RI Rpt/Phase III Investigation of TPH-Contaminated Soil & Groundwater at Bldg 336	Laguna Construction	MAY-2001
Removal Rpt Underground Storage Tanks (UST) Removal at Bldg 101-42	Laguna Construction	MAY-2001
Final Closure Doc for A05	Tetra Tech, Inc.	MAY-2001
2000 Annual Groundwater Monitoring Report	Tetra Tech, Inc.	MAY-2001
Final Decision Document SWMU A05	Tetra Tech, Inc.	JUN-2001
Draft-Natural Attenuation Design of TCE in GW SWMU I09/110 Building 49-10 Pits/Landfill	Tetra Tech, Inc.	JUN-2001
Draft Remedial Alternative Decision Document for SWMU I07, Building 101-44 Landfill	Tetra Tech, Inc.	JUN-2001
Final Report Addendum to RI report for A05	Tetra Tech, Inc.	JUN-2001
Final Work Plan, Explosive Soil Remediation SWMU B-29	Geofon	JUN-2001
Well Abandonment Closure Report 8 US Geological Survey Wells, Bldg 103 Area	Tetra Tech, Inc.	JUN-2001
Draft - Natural Attenuation Design of TCE in Groundwater SWMU I-09/ I 10 Bldg 49-10 Pits/ Landfill	Tetra Tech	JUN-2001
Draft Lead Treatability Study Report, C01a/b	Tetra Tech, Inc.	AUG-2001
Draft - Closure Decision Document for SWMU C01A / 01B Bldg 102-31 Rotary Deactivation Furnaces	Tetra Tech, Inc.	AUG-2001
Draft - Report 2000 Bioremediation Pilot Study for Explosives	Tetra Tech, Inc.	AUG-2001
Final - Remedial Investigation Report Addendum for the SWMU J28 Bldg 108-3 Catchment Pits	Tetra Tech, Inc.	OCT-2001

IRP Previous Studies

2001	Title	Author	Date
	Qtrly Groundwater Monitoring Report 3rd Qtr 2001	Tetra Tech	OCT-2001
	Qtrly Groundwater Monitoring Report 3rd Qtr 2001, Tetra Tech, 10/01/01	Tetra Tech, Inc.	NOV-2001
	Final - Decision Document SWMU A11, H01, H03, H04 Roads & Grounds Waste OB Pit,	Tetra Tech, Inc.	NOV-2001
	Asphalt Concrete Test Results Rotary Deactivation Furnace Bldg 102-31 Proj 125-111-01	Applied Engineering	DEC-2001
2002	Qtrly Groundwater Monitoring Report 4th Qtr 2001	Tetra Tech, Inc.	JAN-2002
	Summary of Hawthorne Army Depot Groundwater Monitoring Program	George Nichol	JAN-2002
	Hawthorne Figures (Map Info),	Tetra Tech, Inc.	JAN-2002
	Qtrly Groundwater Monitoring Report 4th Qtr 2001	Tetra Tech	JAN-2002
	Final - Evaluation of Potential Migration to Groundwater SWMU I09/I10 Bldg 49-10 Pits/Landfill	Tetra Tech, Inc.	FEB-2002
	Final - Natural Attenuation Design of TCE in Groundwater SWMU I09/I10 Bldg 49-10 Pits/Landfill	Tetra Tech, Inc.	MAR-2002
	Final - Workplan Groundwater Extraction Well at SWMU B04	SECOR	MAR-2002
	Letter Report Explosives Remediation SWMU B27A & B29 (Pad 03)	USACE	MAR-2002
	Draft - Sampling & Analysis Plan (SAP) for Groundwater Wells Installation & Sampling Bldg. 13, B04, B20 & I-09/I-10	Forsgren	MAR-2002
	2001 Annual Groundwater Monitoring Report,	Tetra Tech, Inc.	APR-2002
	5 Yr Groundwater Monitoring Well Evaluation 1997 - 2002 Vols I & II	Tetra Tech, Inc.	MAY-2002
	Closure Report Explosive Soil Remediation SWMU B-29 Vols 1-5	Geofon	JUN-2002
	Final - Remedial Investigation Report Addendum SWMU B29 Bldg 101-41 Catchment Pits	Tetra Tech, Inc.	JUN-2002
	Final - Sampling & Analysis Plan for Groundwater Wells Installation & Sampling Bldg 13, B04, B20 & I09/I10	Forsgren	JUN-2002
	2002 Baseline Groundwater Monitoring Rpt for Bldg 336 Site	Laguna Construction	JUL-2002
	Final - Sampling & Analysis Plan (SAP) for Groundwater Wells Installation & Sampling	Forsgren	JUL-2002
	Report Aug 06 - 07/02 Floating Product Investigation & Removal Effort Bldg 336	USACE	AUG-2002
	2001 Annual Groundwater Monitoring Report	Tetra Tech	AUG-2002
	Final - Remedial Investigation Report Addendum SWMU A11 Mag 18AT5 Disposal Pit	Tetra Tech, Inc.	SEP-2002
	Final - Remedial Investigation Report Addendum SWMU A11 Mag 18AT5 Disposal Pit Vol A - Lab Data Package	Tetra Tech, Inc.	SEP-2002
	Design Technical Memorandum Remediation of Gasoline-Impacted Soil & Groundwater at Bldg 336	Laguna Construction	SEP-2002
	July/02 Groundwater Monitoring Rpt for Bldg 336 Site	Laguna Construction	SEP-2002

IRP Previous Studies

2002

Title	Author	Date
Report Sep 10-11/02 Floating Product Investigation & Removal Effort Bldg 336	Laguna Construction	SEP-2002
Final - Remedial Investigation Report Addendum SWMU H05 Depot Laundry Washout	Tetra Tech, Inc.	SEP-2002
Final - Workplan Explosive Soil Remediation SWMU B29 & I07	Geofon	SEP-2002
Final - Field Data Report for Subsurface Electrical Vault Investigation	Cerrudo Services	SEP-2002
Rpt Oct 16-17/02 Floating Product Investigation & Removal Effort Bldg 336	USACE	OCT-2002
Jul/02 Groundwater Monitoring Rpt for Bldg 336 Site	Laguna Construction	OCT-2002
Remediation Report Explosive Soil Remediation SWMU B-29 & Areas 101 & 103 Vols 1 - 5	Geofon	OCT-2002
Final - Hawthorne Pilot Treatability Study to Stabilize Lead in Soil at SWMU C01A/01B Vol A - Lab Data Package	Tetra Tech, Inc.	OCT-2002
Final - Pilot Treatability Study to Stabilize Lead in Soil at SWMU C01A/01B	Tetra Tech, Inc.	OCT-2002
Final - Remedial Investigation Report Addendum SWMU B20 Bldg 101-41 Catchment Pits Vol B - Lab Data Package	Tetra Tech, Inc.	OCT-2002
Final - Remedial Investigation Report Addendum SWMU B20 Bldg 101-41 Catchment Pits Vol A - Lab Data Package	Tetra Tech, Inc.	OCT-2002
Final - Remedial Investigation Report Addendum SWMU B20 Bldg 101-41 Catchment Pits Vol C - Lab Data Package	Tetra Tech, Inc.	OCT-2002
Proposed Action Levels for Ammonium Picrate Using the USEPA Region IX Preliminary Remediation Goal for 2,4 Dinitrophenol	USACE	OCT-2002
Closure Report for Bldg 101-42 Facility Identification #J-00810 UST	USACE	NOV-2002
Floating Product Investigation & Removal Rpt Effort Bldg 336 Nov/02	USACE	NOV-2002

2003

Floating Product Investigation & Removal Bldg 336	USACE	JAN-2003
Final - Sampling & Analysis Report for Groundwater Wells Installation & Sampling Bldg 13, B04, B20 * I09/I10	Forsgren	FEB-2003
Mar/03 Floating Product Investigation & Removal Rpt Bldg 336	USACE	MAR-2003
Floating Product Investigation & Removal Rpt Bldg 336	USACE	MAR-2003
Apr/03 Floating Product Investigation & Removal Rpt Bldg 336	USACE	APR-2003
Remedial Investigation Report Addendum A SWMU I07 Bldg 101-44 Landfill	Chung & Associates	APR-2003
May/03 Floating Product Investigation & Removal Rpt Bldg 336	USACE	JUN-2003
Final - Remedial Investigation Report Addendum SWMU B29 Bldg 101-41 Catchment Pits	Tetra Tech, Inc.	JUN-2003
Jun/03 Floating Product Investigation & Removal Rpt Bldg 336	USACE	JUL-2003

IRP Previous Studies

2003

Title	Author	Date
2nd Qtr 2003 Groundwater Monitoring & Remediation Rpt for Bldg 336 Site	Laguna Construction	JUL-2003
Jul/03 Floating Product Investigation & Removal Rpt Bldg 336	USACE	AUG-2003
Final - Remedial Investigation Report Addendum A SWMU Bldg 101-44 Landfill	Chung & Associates	SEP-2003
August 2003 Floating Product Investigation & Removal Rpt Bldg 336	USACE	SEP-2003
Sep 2003 Floating Product Investigation & Removal Rpt Bldg 336	USACE	OCT-2003
Final Workplan Monitoring Well Installation Development * Sampling Bldg 336	Burleson	OCT-2003
Final Workplan Groundwater Monitoring & Product Recovery Bldg 336	SECOR	OCT-2003
3rd Qtr/03 Groundwater Monitoring & Remediation Rpt for Bldg 336 Site	Laguna Construction	OCT-2003
Final Rpt Groundwater Monitoring & Remediation Rpt for Bldg 336	SECOR	DEC-2003
4th Qtr/03 Groundwater Monitoring & Remediation Rpt for Bldg 336	USACE	DEC-2003

2004

Final Summary Rpt Monitoring Well Installation Development & Sampling Bldg 336 Site	Burleson	FEB-2004
Final Rpt Jan 04 Groundwater Monitoring & Product Recovery Bldg 336	SECOR	FEB-2004
Dec 03/Final Rpt Groundwater Monitoring & Product Recovery Bldg 336	SECOR	FEB-2004
Final - 1st Qtr Feb/03 Groundwater Monitoring Report	Tetra Tech, Inc.	FEB-2004
Final - 2nd Qtr May/03 Groundwater Monitoring Report	Tetra Tech, Inc.	FEB-2004
Final - Remedial Report SWMU I-07 Bldg 101-44 Landfill	Tetra Tech, Inc.	FEB-2004
Final Rpt Feb/04 Groundwater Monitoring & Product Recovery Bldg 336	SECOR	MAR-2004
Final Rpt Mar/04 Groundwater Monitoring & Product Recovery Bldg 336	SECOR	APR-2004
1st Qtr / 04 Groundwater Monitoring & Remediation Rpt for Bldg 336	Laguna Construction	APR-2004
Final - Remediation Report SWMU B29 Ponds C, D, E, F, & K-I (ROJ #CA-130)	Chung & Associates	APR-2004
Final - Remedial Investigation Report Additional Soils Remedial Investigation SWMU I08 Bldg 70 Pit/Landfill	SECOR	APR-2004
Apr / 04 Final Rpt Groundwater Monitoring & Product Recovery Bldg 336	SECOR	MAY-2004
Final Rpt May 2004 Groundwater Monitoring & Product Recovery Bldg 336	SECOR	JUN-2004
Jun / 04 Final Rpt Groundwater Monitoring & Product Recovery Bldg 336	SECOR	JUL-2004
2nd Qtr 2004 Groundwater Monitoring & Remediation Rpt for Bldg 336	Laguna Construction	JUL-2004
Final - Work Plan Explosive Contaminated Soil Remediation SWMU B-29 & J29	Chung & Associates	JUL-2004
Final Rpt July/04 Groundwater Monitoring & Product Recovery Bldg 336	SECOR	AUG-2004

IRP Previous Studies

Year	Title	Author	Date
2004	Final Rpt Groundwater Monitoring & Product Recovery Bldg 336	SECOR	SEP-2004
	Final Rpt Groundwater Monitoring & Product Recovery Bldg 336	SECOR	OCT-2004
	Revised 3rd Qtr/04 Groundwater Monitoring & Remediation Rpt for Bldg 336	Laguna Construction	DEC-2004
2005	Final - Workplan HWAAP-K10 Buried Paint Remediation	SECOR	JAN-2005
	Final - Monitoring Well IRPMW08 Abandonment Monitoring Well IRPMW08A Installation w/CD	SECOR	JAN-2005
	Letter Rpt for Underground Injection Control (UIC) Permit, Quarterly Monitoring Requirements (Second Quarter 2005), Bldg 336	Geofon	SEP-2005
	Final Workplan, Groundwater Monitoring, Sampling and Analysis, Product Recovery, and Remediation System Operation and Maintenance Bldg 336	Geofon	SEP-2005
	Letter Rpt for Underground Injection Control (UIC) Permit, Quarterly Monitoring Requirements (Third Quarter 2005), Bldg 336	Geofon	OCT-2005
2006	Final Letter Rpt for Underground, Injection Control (UIC) Permit Fourth Quarter 2005, Bldg 336	Geofon	JAN-2006
	4th QTR 2005 Final Groundwater Monitoring and Sampling Report for B04	SECOR	JUN-2006
	Draft 2005 Annual Groundwater Monitoring Report	TtEMI	JUN-2006
	Final Report - 4th Qtr 2005 - Groundwater Monitoring and Sampling SWMU B04	Kurt Solander	JUN-2006
	Final Summary Report for Monitoring Well Installation, Development & Sampling for I09/I10	Burleson	SEP-2006
	Work Plan for Monitoring Well Abandonment, New Well Installation & Sampling	TEMI	OCT-2006
	Final RA Report, J29	Geofon	OCT-2006
	Free Product Recovery Work Plan - Site B-24A (Bldg 336)	Plexus	OCT-2006
	Final work plan, SWMU B20 Borehole Invest. & SVE well abandonment	SECOR	OCT-2006
	Replacement pgs for final report, K10 Buried Paint Remediation	SECOR	OCT-2006
	HS and Accident Prevention Plan	Plexus	NOV-2006
	2007	Site Specific Work Plan, B27A	Plexus
2008	Final Base-Wide Annual Groundwater Monitoring Report	Plexus	APR-2008
	Final Interim Removal Work Plan, B24	Plexus	MAY-2008
	Final Site Specific Work Plan Investigation, I02	Plexus	JUL-2008
	Corrective Action Plan, I09 & I10	Plexus	AUG-2008

IRP Previous Studies

Year	Title	Author	Date
2008	Corrective Action Work Plan, B04	Plexus	AUG-2008
2009	Corrective Action Plan, B24A	Plexus	MAR-2009
	Final Base-Wide Annual Groundwater Monitoring Report	Plexus	APR-2009
	Draft First Quarter 2009 Groundwater Monitoring Report for SWMU B24A. Hawthorne Army Depot, Hawthorne, NV.	Plexus	MAY-2009
	Revised-Final Closure Report/Decision Document for SWMU K05. Hawthorne Army Depot, Hawthorne, NV.	Plexus	MAY-2009
	Re-submittal Revised-Final Closure Report/Decision Document for SWMU K03d. Hawthorne Army Depot, Hawthorne, NV	Plexus	MAY-2009
	Revised-Final Closure Report/Decision Document for SWMU K03a. Hawthorne Army Depot, Hawthorne, NV.	Plexus	MAY-2009
	Final Closure Report/Decision Document for SWMU B20. Hawthorne Army Depot, Hawthorne, NV.	Plexus	MAY-2009
	Revised-Final Closure Report/Decision Document for SWUM J03. Hawthorne Army Depot, Hawthorne, NV.	Plexus	MAY-2009
	Draft Closure Report/Decision Document for SWMU B04. Hawthorne Army Depot, Hawthorne, NV.	Plexus	JUN-2009
	Revised-Final Closure Report/Decision Document for SWMU I09/10. Hawthorne Army Depot, Hawthorne, NV	Plexus	JUN-2009
	Final Annual 2008 Basewide Groundwater Monitoring Report. Hawthorne Army Depot, Hawthorne, NV.	Plexus	JUN-2009
	Final First Quarter 2009 Groundwater Monitoring Report for SWMU B24A. Hawthorne Army Depot, Hawthorne, NV.	Plexus	JUN-2009
	Draft Corrective Measures Study Report SWMU I02. Hawthorne Army Depot, Hawthorne, NV.	Plexus	JUN-2009
	Draft Second Quarter 2009 Groundwater Monitoring Report for SWMU B24A. Hawthorne Army Depot, Hawthorne, NV.	Plexus	AUG-2009
	Final Corrective Action Plan SWMU B24A. Hawthorne Army Depot, Hawthorne, NV.	Plexus	SEP-2009
	Final Closure Report/Decision Document 102-52 Acid Pit SWMU B24. Hawthorne Army Depot, Hawthorne, NV.	Plexus	SEP-2009
2010	Final Annual 2009 Basewide Groundwater Monitoring Report. Hawthorne Army Depot, Hawthorne, NV.	Plexus	MAR-2010
2011	Final Decision Document SWMU K03E	Bay West	APR-2011
	Final Decision Document SWMU K03G	Bay West	APR-2011
	Final SWMU H01 Decision Document	Bay West	JUL-2011
	DD NFA Buried Paint (K10)	Baywest	DEC-2011
2012	DD NFA 101-41/44 Catchment pit (B21)	Baywest	JAN-2012

IRP Previous Studies

2012

Title	Author	Date
RI/FS Addendum, 103-8/10 (B27b)	Baywest	FEB-2012
Final RI/FS 103-20 (version 2) B27c	Baywest	FEB-2012
Groundwater Report (BWGWP) B27b	Plexus	MAR-2012
Final I08 Decision Document	Bay West	MAR-2012
104-3 Catchment Pit Final Tech Memo (B34)	Baywest	APR-2012
Lumber Burn Pit, RCRA Corrective Action Remedy Selection (H02)	Baywest	APR-2012
Final RI/FS (B29)	Baywest	APR-2012
Final SWMU K03F Technical Memorandum Limited Site Investigation	Bay West	APR-2012
Remedial Action Decision Document B27b	Bay West	MAY-2012
Remedial Action Decision Document B27c	Bay West	MAY-2012
Remedial Action Decision Document SWMU H02	Bay West	MAY-2012
Final SWMU B34 Decision Document	Bay West	MAY-2012
Final-SWMU I07 Decision Document-SWMU I07	Bay West	JUN-2012
Final RA Decision Document SWMU B29	Bay West	JUN-2012
SWMU J29 Decision Document	Bay West	JUN-2012
SWMU K03F	Bay West	JUN-2012

2013

Final Community Relations Plan Addendum, Compliance Restoration Program Corrective Measures Implementation	HGL	APR-2013
Final RampDown/Exit Strategy Addendum to Corrective Measures Implementation-Operation Work Plan for SWMU B 29	HGL	JUN-2013
Annual Ground Water Monitoring and MNA Performance Report 2013 SWMU B24a	Plexus Scientific	SEP-2013
Corrective Action Decision Document CHWAAP-I15	Bay West	SEP-2013
RCRA Facility Investigation/Corrective Measures Study-CHWAAP-I15	Bay West	SEP-2013

2014

Final Corrective Measures Implementation Plan, SWMU I02	Plexus	MAY-2014
Final Site Specific Exit Strategies, SWMUs B24a, B29, and B27a	Ahtna	SEP-2014
Final Pilot Study Work Plan, CHWAAP-I15	HGL	NOV-2014

HAWTHORNE ARMY DEPOT
Installation Restoration Program
Site Descriptions

Site ID: HWAAP-B04
Site Name: 101-44 IMPOUNDMENT
Alias: 101-44

STATUS

Regulatory Driver: RCRA
RRSE: MEDIUM
 Contaminants of Concern: Explosives
 Media of Concern: Groundwater

Phases	Start	End
RFA.....	198705.....	198808
CS.....	198705.....	198808
RFI/CMS.....	199405.....	201503
CMI(C).....	201506.....	201809
CMI(O).....	201709.....	204709
RIP Date:	201809	
RC Date:	204709	

SITE DESCRIPTION

Site HWAAP-B04 is a double-lined surface impoundment approximately 140 feet by 240 feet by 15 feet, having a capacity of 586,000 gallons designed to collect explosive-contaminated wash down water from demilitarization operations. The impoundment was never used, but was constructed using soil from a previous unlined impoundment that had collected explosive wash down water from 1944 to 1977. The newer lined impoundment was constructed at the same location as the older unlined impoundment. A 1989 RI included collecting near surface soil, subsurface soil, and groundwater samples from within and adjacent to the impoundment. Explosives were detected in the soil samples and in the groundwater at levels up to 30 mg/L.

Additional RI work in 1994 included four surface soil samples collected from within the impoundment where visual staining of explosives was observed, and groundwater samples from existing wells. Elevated concentrations of explosives [240 mg/kg RDX and 22 mg/kg of 1,3,5-trinitrobenzene (TNB)] were detected in these soil samples. Groundwater samples detected high levels of explosives [2,600 micrograms per liter (ug/L) of RDX, 3.6 ug/L of 1,3,5-TNB, 18 ug/L of 4-amino-DNT, 40 ug/L of ammonium picrate]. TCE is also a COC at this site. Sixty-eight feet of cone penetrometer test (CPT) sounding was conducted at two locations to assess the optimal depths to collect subsurface soil samples. Explosive contamination exceeds NDEP action levels. Annual groundwater monitoring began in 1997. One production well was installed in fiscal year (FY)04. Water from this well will be used to facilitate the bioremediation.

Between October 2005 and May 2006, a total of 5,920 cy of contaminated soil was excavated and treated. The last of the explosive-contaminated soil was excavated in 2009, and the impoundment was backfilled. The investigation to determine the extent of explosive contamination in groundwater surrounding the SWMU is ongoing under a PBA. Concentrations of explosives in groundwater above NDEP-approved action levels have been found at six of the 15 wells currently installed at the site. This site was part of the PBA for out-of-scope work. The contracting officer (KO) determined the PBA did not cover the remaining groundwater investigations and therefore a new contract was awarded July 2013. Groundwater investigations are underway. Quarterly sampling continued in 2014 and is underway in 2015. Exit strategy will be re-evaluated in 2016.

CLEANUP/EXIT STRATEGY

The cleanup/exit strategy will be decided when the study is complete.

Site ID: HWAAP-B24A
Site Name: BLDG 336: FUEL STORAGE
Alias: bldg 336

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

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

Media of Concern: Groundwater

Phases	Start	End
RFA.....	200601.....	200602
CS.....	200602.....	200705
RFI/CMS.....	200607.....	200705
DES.....	200607.....	200707
CMI(C).....	200807.....	200905
CMI(O).....	200905.....	204405
RIP Date:	200905	
RC Date:	204405	

SITE DESCRIPTION

Former Bldg 336 is located in the Central Magazine area of HWAD. There are three 10,000-gallon USTs at the site; two are out of service. In the past, they contained gasoline. The third UST stores diesel fuel and has an associated dispensing system. These USTs are double-lined and have an active alarm system to detect leaks. In August 1999, a leak was discovered in the single-walled piping that conveyed gasoline from two 10,000-gallon USTs to the gasoline dispenser island that was located in the proximity of the former UST. An estimated 5,000 to 7,000 gallons of gasoline were released based upon inventory reconciliation records. An estimated 600 cy of gasoline-impacted soil were excavated to depths of up to 20 feet below ground surface (bgs). The dispenser island and associated piping were removed, and the two USTs were taken out of service.

Since August 1999, 32 monitoring wells have been installed. In November 2000, during the first comprehensive groundwater monitoring event, free-product was observed in MW08 and MW09 at reported thicknesses of 3.8 feet and 2.2 feet, respectively. During the monitoring period at the Bldg 336 vicinity, free-product has been observed in MW08, MW09, MW10, and MW19; MW06 and MW14 also have each been reported to have once contained free-product.

Corrective actions at the site included free-product recovery, soil vapor extraction (SVE), ozone sparging, and bioventing in soil and groundwater. These systems are no longer operating at the site; however, the site remains in the CMI(O) phase under the current PBA. The current site response is continued source removal using absorbent socks and MNA.

Ground water monitoring and product recovery is continuing. A risk assessment is currently anticipated for FY18.

CLEANUP/EXIT STRATEGY

Operation of MNA under the CMI(O) phase will continue following the end of the PBA. Current assumptions include exemption-based NFA DD after 30-year MNA.

Site ID: HWAAP-B26
Site Name: 103-6 POL PIT
Alias: 103-6

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Soil

Phases	Start	End
RFA.....	198705.....	198808
CS.....	198705.....	198808
RFI/CMS.....	199405.....	199812
DES.....	200607.....	200806
CMI(C).....	200601.....	201209
CMI(O).....	201204.....	204403
RIP Date:	201209	
RC Date:	204403	

SITE DESCRIPTION

Site HWAAP-B26 is an inactive unlined surface impoundment located north of Bldg 103-6. The impoundment measures 25 feet by 85 feet by 8 feet. The impoundment operated from the 1940s to 1980s and received steam line blowdown water, fuel oil, crude oil, and other waste POL products. There is visible evidence of POL-stained soils in and around the pit.

In 1992, the impoundment was backfilled with soil almost to grade level. The pit is currently characterized by a depressed area approximately twice as large as the originally reported size of the impoundment. An above-line steam line running through the site deteriorated and was replaced in 2001.

The RI work in 1994 included surface soil and hand auger sampling, and CPT soundings. Two hand auger samples and two CPT soil samples were collected from within the pit and analyzed for explosives, metals, SVOCs, VOCs, polychlorinated biphenyl (PCB), and TPH. All groups of chemicals were detected in the surface and subsurface soil below action levels except for TPH. The TPH above action levels [16,000 mg/kg of total petroleum hydrocarbon-diesel (TPH-d)] was detected in the soil. Additional investigation to determine the extent of TPH in groundwater was completed in May 2012. Under the current PBA, activities for the CMI phase include fuel recovery performed in two wells by a pneumatic skimmer system and manual bailing methods. Moreover, five additional wells are being sampled for fuel-related compounds annually. Product removal and operation of the system has been transferred to a new contract which was awarded in July 2013.

CLEANUP/EXIT STRATEGY

Operation of MNA and source removal under the CMI(O) phase will continue following the end of the PBA. MNA and source removal is expected to continue under new PBCs awarded after current contract expiration in FY18.

Site ID: HWAAP-B27A
Site Name: 103-16 CATCHMENT PIT
Alias: 103-16

STATUS

Regulatory Driver: RCRA
RRSE: MEDIUM
 Contaminants of Concern: Explosives
 Media of Concern: Soil

Phases	Start	End
RFA.....	198705.....	198808
CS.....	198705.....	198808
RFI/CMS.....	199405.....	199812
DES.....	200607.....	200709
CMI(C).....	200601.....	201206
CMI(O).....	200606.....	204406
RIP Date:	201206	
RC Date:	204406	

SITE DESCRIPTION

Site HWAAP-B27A consists of eight inactive unlined surface impoundments and two drainage ditches located northwest of the ordnance washout Bldg 103-16. The eight impoundments occupy a total area of 10 acres. Each impoundment is up to 8 feet deep. There are two drainage ditches at the site. One extends northwest from the facility for approximately 0.5 mile and the other extends southeast of the facility and is branched to the northwest near the impoundments. The impoundments have eroded and are partially filled with windblown sand. There is visible evidence of several inches of ammonium picrate and TNT stained soils in the pits and sidewalls. Between 1946 and 1975 the drainage ditches and the pits potentially received up to 20,000 gallons of wastewater containing ammonium picrate, RDX, TNT, and red fuming nitric acid.

Groundwater samples from 1974 detected nitrates above 70 ug/L (USGS Phase II investigation). No significant levels of TNT, RDX, or ammonium picrate were detected in the groundwater. Groundwater remediation is not required.

The RI work in 1994 included collecting 15 surface soil samples, 14 hand auger samples, and seven CPT soil samples from the pits and the ditches and analyzing samples for explosives and metals. Explosives above action levels were detected in surface soils in the ditches and in the impoundments. In general, the concentrations decreased with depth. Concentrations of TNT were detected at 700 mg/kg and 340 mg/kg in surface soil samples and then decreased to 71 mg/kg at a depth of 5 feet. Additional sampling for ammonium picrate was performed in 2002 and confirmed high levels in the surface soil (within 6 to 12 inches).

In December 2010, a soil removal action was conducted, and 3,608 tons of soil was removed from the catchment pits, associated berms, drainage pipes, and concrete troughs at the site. Confirmation sampling (CS) results showed that concentrations in residual soil were below the established Tier II site-specific target levels (SSTL). The site was backfilled in 2011. A DD was approved in June 2012 that requires groundwater monitoring in five wells on-site and cited residual concentrations of explosives below SSTLs based upon industrial use.

CLEANUP/EXIT STRATEGY

Operation and monitoring for MNA under the CMI(O) phase will continue following the end of the PBA and an exit strategy for groundwater monitoring will be developed.

Site ID: HWAAP-I02
Site Name: 110 GROUP OPEN BURNING PIT
Alias: 110 Group

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	199207.....	199207
CS.....	199405.....	199501
RFI/CMS.....	200606.....	201303
DES.....	201403.....	201412
CMI(C).....	201403.....	201412
LTM.....	201501.....	204501

RIP Date: N/A

RC Date: 201412

SITE DESCRIPTION

Previously, HWAAP-G02 and HWAAP-G03 were sub-sites of this site. Those two sub-sites have been removed from the AEDB-R and all future work will refer to site HWAAP-I02. HWAAP-I02 is a disposal area of approximately 4 acres that includes pits for wastewater treatment and open trenches used for OB and disposal of ordnance. Visible staining of explosives is present on the surface soils. The area appears to have been in operation from the early to late-1950s, based on aerial photographs; however, use and history of the site is not well documented.

Previous investigations in 1988, 1989, and 1992 included magnetometry surveys and exploration pits. Soil samples collected from these pits contained elevated concentrations of explosives and metals above state action levels.

The 1994 RI included 1.4 acres of 10 foot spacing ground penetrating radar within a 4-acre area of reconnaissance airborne ground penetrating radar to delineate pits and trenches.

Four monitoring wells were installed to assess the impact to groundwater. Initially, concentrations of explosives in groundwater exceeded 70 ug/L with elevated concentrations of metals; however, since 1997, metals and explosives above action levels in groundwater were not detected.

In 2007, evidence of buried UXO was identified at the site. The additional investigations and CMS have been completed and the CAP is being reviewed by NDEP.

The CMS was completed in May 2014 and the RA DD was finalized in August 2014. The corrective action was completed in December 2014. The DD identifies the remedy as the installation of a 36-inch thick native soil cover with LUCs and the performance of post-closure care. Post-closure care inspections will be conducted at least annually to evaluate the integrity of the cover and to ensure that the site is not used for unauthorized purposes. In addition, post-closure care groundwater monitoring will be conducted and groundwater samples will be collected from all four on-site monitoring wells for explosives and nitrate analysis. The sampling will be conducted every four years beginning in 2018.

CLEANUP/EXIT STRATEGY

The cleanup/exit strategy is to cap the site and go into post-closure care.

Site ID: HWAAP-I09
Site Name: 49-10 PIT/LANDFILL #1 & #2
Alias: 49-10

STATUS

Regulatory Driver: RCRA
RRSE: MEDIUM
 Contaminants of Concern: Volatiles (VOC)
 Media of Concern: Groundwater

Phases	Start	End
RFA.....	199207.....	199207
CS.....	199405.....	199410
RFI/CMS.....	199410.....	201410
CMI(C).....	201502.....	201503
CMI(O).....	201506.....	204509
RIP Date:	201506	
RC Date:	204509	

SITE DESCRIPTION

Site HWAAP-I09 consists of two open pits near an area used to assemble ship mines, bombs and torpedo warheads. The period of operation is not documented. Wastewater and wash down water were reportedly discharged to these pits.

The 1994 investigation included 10 soil gas samples, six surface soil samples, and 15 subsurface soil samples collected from three borings to a depth of 56 feet. Three CPT soundings were advanced for a total of 106 feet to define the optimum depth to collect subsurface soils. The surface soil samples contained up to 1,260 mg/kg of TPH-d. Groundwater sampling showed hits of VOCs. Sewer line breakage was thought to be the source, but in 1999, sewer lines were investigated and the findings eliminated potential release points.

Wells were installed to evaluate concentrations of TCE in groundwater, which was observed above NDEP action levels. Investigation of TCE contamination in groundwater at SWMU I09 will be transferred to a new contract as the KO determined continuation of the groundwater investigation is outside the scope of the current PBA.

A contract was awarded in FY13 to conduct a RFI/CMS through FY15 to determine the extent of contamination in groundwater. This contract also includes the preparation of a corrective action plan DD. These actions are fully funded thru FY16. It is anticipated that, at the least, continued groundwater MNA will be required following the RFI/CMS.

A vapor intrusion Tier I assessment was initiated in FY15 to determine any potential impacts to buildings located adjacent to the site.

CLEANUP/EXIT STRATEGY

The cleanup/exit strategy will be decided when the study is complete.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
HWAAP-A03	COAL ASH LANDFILL(NOT OPEN)	199810	NFA Decision Document signed by NDEP 07/21/99
HWAAP-A04	BABBITT CLOSED LANDFILL	200009	NFA Decision Document signed by NDEP 11/30/01
HWAAP-A05	MUSTARD GAS DISPOSAL AREA	201203	NFA Decision Document signed by NDEP 12/18/01
HWAAP-A06A	OLD BOMB DISPOSAL AREA 1	199209	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-AO6A.
HWAAP-A06B	OLD BOMB DISPOSAL AREA 2	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-AO6B.
HWAAP-A06C	OLD BOMB DISPOSAL AREA 3	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-AO6C.
HWAAP-A06D	OLD BOMB DISPOSAL AREA 4	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-AO6D.
HWAAP-A06E	OLD BOMB DISPOSAL AREA 5	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-AO6E.
HWAAP-A07	NAVAL INSHORE OPS TNG CNTR FIRING RANGE	198808	Active Site - Future cleanup will be under a RCRA Part B Permit
HWAAP-A08	CONSTRUCTION DEBRIS LANDFILL	200110	NFA Decision Document signed by NDEP 11/30/01
HWAAP-A09A	AMMO CAN PILES	199810	NFA Decision Document signed by NDEP 08/04/00
HWAAP-A09B	BATTERY DISPOSAL AREA	199803	NFA Decision Document signed by NDEP 03/22/00
HWAAP-A10	107-ROCKET IMPACT AREA	199709	MMRP active/inactive range site now under site HWAAP-001-R-01.
HWAAP-A11	MAG 18-5 DISPOSAL PIT	201203	NFA Decision Document signed by NDEP 1/14/02
HWAAP-B01	WADF IMPOUNDMENT #1	198808	SI determined there was no contamination
HWAAP-B02	WADF IMPUNDMENT #2	198808	SI determined there was no contamination
HWAAP-B03	WADF IMPOUNDMENT #3	198808	SI determined there was no contamination
HWAAP-B05	101-15 IMPOUNDMENT	199911	Five-year review determined that RA effectively remediated contamination below action levels. NFA DD signed by state 11/22/99.
HWAAP-B06	101-13 IMPOUNDMENT	199909	Five-year review determined that RA effectively remediated contamination below action levels. NFA DD signed 11/30/01.
HWAAP-B07	101-1 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels. NFA DD signed by state 11/30/01.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
HWAAP-B08	101-1 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels. NFA DD signed by state 8/4/00.
HWAAP-B09	101-32 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels. NFA DD signed by state 8/4/00.
HWAAP-B10	101-3 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels. NFA DD signed by state 8/4/00.
HWAAP-B11A	101-31 CATCHMENT PIT	199909	NFA DD signed by state 2/14/01.
HWAAP-B11B	101-34 CATCHMENT PIT	199909	Closure DD was signed by the state 12/6/99.
HWAAP-B12	101-10 CATCHMENT PIT	200008	A NFA decision document for soil was signed by NDEP August 4, 2000.
HWAAP-B13	101-29/36 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels. Closure DD was signed by state 12/6/99.
HWAAP-B15	101-16 CATCHMENT PIT	199810	NFA Decision Document signed by NDEP 03/22/00
HWAAP-B16	101-18 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels. Closure DD signed by state 4/20/01.
HWAAP-B17A	101-20 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels. Closure DD signed by state 24 April 2000. Site for industrial use only
HWAAP-B17B	101-20 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels. DD signed by NDEP 4 August 2000. Site is for industrial use only.
HWAAP-B18	101-62 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels. DD signed by NDEP 2 March 2001. Site for industrial use only.
HWAAP-B19	101-11 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels. DD signed by NDEP on 20 April 2001.
HWAAP-B20	101-41 CATCHMENT PIT	200909	Action will be taken under site HWAAP-I15
HWAAP-B21	101-41/42 CATCHMENT PIT	199912	This site will now be handled under site CCHWAAP-I15.
HWAAP-B22A	101-44 CATCHMENT PIT	199909	NFA Decision Document signed by NDEP 03/13/01
HWAAP-B22B	101-44 CATCHMENT PIT	199909	NFA Decision Document signed by NDEP 03/09/01

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
HWAAP-B23	103-30 CATCHMENT PIT	200110	Five-year review determined that RA effectively remediated contamination below action levels. Closure DD signed by NDEP 30 November 2001; no construction allowed.
HWAAP-B24	102-52 ACID PIT	200909	NDEP signed final Closure Report/DD on October 6, 2009.
HWAAP-B25	103-7 INERT WASTE IMPOUNDMEN	199912	NFA Decision Document signed by NDEP 03/29/00
HWAAP-B27B	103-8/10 OXIDATION DITCH	200009	This site will now be handled under site CCHWAAP-B27B.
HWAAP-B27C	103-20 SURFACE IMPOUNDMENT	200009	This site will now be handled under site CCHWAAP-B27C.
HWAAP-B28A	108-20 PO SPILL CATCHMENT	199810	NFA Decision Document signed by NDEP 11/22/99
HWAAP-B28B	108-20 PO SPILL CATCHMENT	199810	NFA Decision Document signed by NDEP 11/22/99
HWAAP-B28C	104-8 EO SPILL Impoundment	199810	NFA Decision Document signed by NDEP 11/22/99
HWAAP-B28D	104-10 EO SPILL BASIN	199810	NFA Decision Document signed by NDEP 11/22/99
HWAAP-B29	103-41 UNLINED PONDS	200609	Interim DD signed by state 22 Sep 1995. For groundwater purposes, this site will now be handled under site CCHWAAP-B29.
HWAAP-B30	101-16 CATCHMENT BASIN	199909	Five-year review determined that RA effectively remediated contamination below action levels. Closure DD signed by NDEP on 22-Nov-99; no construction allowed.
HWAAP-B31	101-65 CATCHMENT PIT	199909	Five-year review determined that RA effectively remediated contamination below action levels.
HWAAP-B32	101-41 CATCHMENT PIT	199709	NFA Decision Document signed by NDEP 04/20/01
HWAAP-B33	102-51 CATCHMENT PIT	199810	NFA Decision Document signed by NDEP 03/29/00
HWAAP-B34	104-3 CATCHMENT PIT	199812	Not eligible for ER,A/BRAC funding. Active Site -
HWAAP-C01A	102-31 ROTARY DEACTIVE FURNA	200109	NFA Decision Document signed by NDEP 11/30/01
HWAAP-C02A	117-3 WADF ROTARY DEACTIVE FURNACE	198808	Not eligible for ER,A/BRAC funding. Site is active.
HWAAP-C03	DOCUMENT INCINERATOR	198808	Not eligible for ER,A/BRAC funding. Site is active.
HWAAP-C04	OLD BOMB POPPING FURNACE 1	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-C04.
HWAAP-C05	OLD BOMB POPPING FURNACE #2	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-C05.
HWAAP-D01	106-22 & 106-23 NONREACTIVE HW STORAGE	198808	Not eligible for ER,A/BRAC funding. Site is active.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
HWAAP-D02	115-9 & 113-73A REACTIVE HW STORAGE	198808	Not eligible for ER,A/BRAC funding. Site is active.
HWAAP-E01A	WADF WWTP	198808	Not eligible for ER,A/BRAC funding. Site is active.
HWAAP-E01B	WADF SEWAGE EVAP PONDS	198808	Not eligible for ER,A/BRAC funding. Site is active.
HWAAP-E02	HWAAP STP EVAP/PERC PONDS	198808	Not eligible for ER,A/BRAC funding. Site is active.
HWAAP-E03	HAWTHORNE SEWAGE EVAP PONDS	198808	Not eligible for ER,A/BRAC funding. Site is active.
HWAAP-F01	TRANSFER STATION, PROP DISPOSE OFC(PDO)	198808	Not eligible for ER,A/BRAC funding. Site is active.
HWAAP-G01A	OLD BOMB OB/OD GROUND 1	198909	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-G01A.
HWAAP-G01B	OLD BOMB OB/OD GROUND 2	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-G01B.
HWAAP-G01C	OLD BOMB OB/OD GROUND 3 D AREA	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-G01C.
HWAAP-H01	FIRE TNG PIT	200006	NFA Decision Document signed by NDEP 7/21/11
HWAAP-H03	ROAD & GROUNDS WASTE OB PIT	199812	Site is tracked under site CCHWAAP-H03. It was determined to be within the boundaries of J12 which was closed April 19, 2001. The NDEP was petitioned to include HO3 in the April 19, 2001 closure and they concurred in a letter dated November 21, 2001.
HWAAP-H04	NAVYSIDE LANDFILL	200409	NFA Decision Document signed by NDEP 02/15/02
HWAAP-H05	OLD DEPOT LAUNDRY WASHOUT	200110	NFA Decision Document signed by NDEP 01/14/02
HWAAP-I01	NEW BOMB LANDFILL	199709	Not eligible for ER,A/BRAC funding - Active Site
HWAAP-I03	104-7 PIT #1	199812	NFA Decision Document signed by NDEP 11/22/99
HWAAP-I04	104-7 PIT #2	199812	NFA Decision Document signed by NDEP 11/22/99
HWAAP-I05	33-16 LANDFILL	199812	NFA Decision Document signed by NDEP 11/22/99
HWAAP-I06	SPILL SITE 30-5	199812	NFA Decision Document signed by NDEP 09/15/99
HWAAP-I07	101-44 LANDFILL	200503	NFA Decision Document signed by NDEP on 6/22/12.
HWAAP-I08	BLDG 70 PIT/LANDFILL	200312	NFA Decision Document signed by NDEP on 6/22/12.
HWAAP-I11	49-9 PIT/LANDFILL	200109	NFA Decision Document signed by NDEP 11/30/01
HWAAP-I13	BLDG 10 LANDFILL/DISCHARGE	199812	NFA Decision Document signed by NDEP 11/22/99

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
HWAAP-I14	BLDG 46 OIL SPILL	199903	NFA Decision Document signed by NDEP 10/31/01
HWAAP-I15	101-42 CATCHMENT PIT	199501	This site is tracked under CCHWAAP-I15.
HWAAP-I17	104-10 LANDFILL	199812	NFA Decision Document signed by NDEP 10/13/99
HWAAP-I18	104-2 HYDROCARBON SPILL	200006	NFA Decision Document signed by NDEP 07/05/02
HWAAP-I19	NAVY BEACH TEST RANGE	199709	Listed under MMRP as HWAAP-009-R-01.
HWAAP-I22	OLD BOMB OPEN BURNING PIT	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-I22.
HWAAP-I23	OLD BOMB/ROCKET METAL LANDFILL	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-I23.
HWAAP-J02	115 GROUP BURN AREA/LANDFILL	199812	NFA Decision Document signed by NDEP 10/13/99
HWAAP-J03	BLDG 70 DIESEL FUEL LEAK	200809	Closure Decision Document - May 2009
HWAAP-J04	107 AREA DRUM STORAGE/LANDFILL	199909	NFA Decision Document signed by NDEP 11/22/99
HWAAP-J05	DOCK 1 LANDFILL	199903	NFA Decision Document signed by NDEP 10/13/99
HWAAP-J06	DOCK 2 LANDFILL	199903	NFA Decision Document signed by NDEP 10/13/99
HWAAP-J07	DOCK 3 LANDFILL	199810	NFA Decision Document signed by NDEP 10/13/99
HWAAP-J08	DOCK 4 LANDFILL	199810	NFA Decision Document signed by NDEP 10/13/99
HWAAP-J09	DOCK 5 LANDFILL	199810	NFA Decision Document signed by NDEP 10/13/99
HWAAP-J10	DOCK 6 LANDFILL	199810	NFA Decision Document signed by NDEP 10/13/99
HWAAP-J11	103-16 LANDFILL/PILE	199912	NFA Decision Document signed by NDEP 08/04/00
HWAAP-J12	LANDSCAPE LANDFILL	200006	NFA Decision Document signed by NDEP 04/19/01
HWAAP-J13	WADF SOUTH DUMP	199810	NFA Decision Document signed by NDEP 11/22/99
HWAAP-J14	103-6 TRENCH	200109	NFA Decision Document signed by NDEP 11/19/02
HWAAP-J15	103-16 LANDFILL	200012	NFA Decision Document signed by NDEP 08/04/00
HWAAP-J16	111-113 GROUP BURN AREA/LANDFILL	199812	NFA Decision Document signed by NDEP 10/13/99
HWAAP-J17	THORNE DRUM AREA	199810	NFA Decision Document signed by NDEP 03/22/00
HWAAP-J21	BLDG 97 OLD DOCK AREA	199810	NFA Decision Document signed by NDEP 11/22/99
HWAAP-J22	50 GROUP PITS	199810	NFA Decision Document signed by NDEP 11/22/99
HWAAP-J23	TRENCH AT DUSTY ACRES AREA	199812	NFA Decision Document signed by NDEP 03/22/00

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
HWAAP-J24	TRENCH NEAR 50-60	199810	NFA Decision Document signed by NDEP 11/22/99
HWAAP-J25	THORNE AREA LANDFILL	199902	NFA Decision Document signed by NDEP 04/24/00
HWAAP-J26	LANDFILL TURN TABLE AREA	199709	NFA Decision Document signed by NDEP 08/04/00
HWAAP-J27	LANDFILL CAMP JUMBO AREA	199709	NFA Decision Document signed by NDEP 08/04/00
HWAAP-J28	108-3 CATCHMENT PITS	200106	NFA Decision Document signed by NDEP 11/30/01
HWAAP-J29	BUILDING 103-5 LANDFILL	200409	This site was consolidated with HWAAP-B29 for bioremediation.
HWAAP-K01	WALKER LAKE TEST RANGE	199709	MMRP active/inactive range site now under site HWAAP-001-R-01.
HWAAP-K02	WALKER LAKE TEST RANGE DISPOSAL PIT	199709	This site is a duplicate of site HWAAP-A10.
HWAAP-K03	UST SITES - INST WIDE	200809	NFA Decision Documents: K03A 6/2009; K03B 3/2011; K03C 2/1996; K03D 6/2009; K03E 4/2011; K03F 6/2012; K03G 4/2011.
HWAAP-K04	ABOVEGROUND STORAGE TANKS AT BLDG 70	199706	NFA Decision Document signed by NDEP 09/25/95
HWAAP-K05	LUST SITE AT BLDG 117-3	200809	Closure Decision Document - May 2009
HWAAP-K07	OLD BOMB DDT BURIAL SITE	201005	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-K07.
HWAAP-K08	PAINT STORAGE LOCKER SHEDS	200305	NFA Decision Document signed by NDEP 05/06/03
HWAAP-K09	SUMP AND DISCHARGE PIPE	200305	NFA Decision Document signed by NDEP 05/06/03
HWAAP-K10	BURIED PAINT	200409	NFA Decision Document signed by NDEP December 2011.
HWAAP-K11	SKEET RANGE	200305	NFA Decision Document signed by NDEP 05/06/03
PBC@Hawthorne	PBC	201306	Sites under this PBC have individual DD's, above.

IRP Schedule

Date of IRP Inception: 198407

Past Phase Completion Milestones

1984

ISC (HWAAP-K05 - LUST SITE AT BLDG 117-3)

1988

RFA

(HWAAP-A03 - COAL ASH LANDFILL(NOT OPEN), HWAAP-A04 - BABBITT CLOSED LANDFILL, HWAAP-A05 - MUSTARD GAS DISPOSAL AREA, HWAAP-A06A - OLD BOMB DISPOSAL AREA 1, HWAAP-A06B - OLD BOMB DISPOSAL AREA 2, HWAAP-A06C - OLD BOMB DISPOSAL AREA 3, HWAAP-A06D - OLD BOMB DISPOSAL AREA 4, HWAAP-A06E - OLD BOMB DISPOSAL AREA 5, HWAAP-A07 - NAVAL INSHORE OPS TNG CNTR FIRING RANGE, HWAAP-A08 - CONSTRUCTION DEBRIS LANDFILL, HWAAP-A09A - AMMO CAN PILES, HWAAP-A09B - BATTERY DISPOSAL AREA, HWAAP-A10 - 107-ROCKET IMPACT AREA, HWAAP-B04 - 101-44 IMPOUNDMENT, HWAAP-B12 - 101-10 CATCHMENT PIT, HWAAP-B20 - 101-41 CATCHMENT PIT, HWAAP-B24 - 102-52 ACID PIT, HWAAP-B26 - 103-6 POL PIT, HWAAP-B27A - 103-16 CATCHMENT PIT, HWAAP-B29 - 103-41 UNLINED PONDS, HWAAP-C04 - OLD BOMB POPPING FURNACE 1, HWAAP-C05 - OLD BOMB POPPING FURNACE #2, HWAAP-G01B - OLD BOMB OB/OD GROUND 2, HWAAP-G01C - OLD BOMB OB/OD GROUND 3 D AREA)

IRA

PA (HWAAP-A06A - OLD BOMB DISPOSAL AREA 1)
(HWAAP-A11 - MAG 18-5 DISPOSAL PIT, HWAAP-B01 - WADF IMPOUNDMENT #1, HWAAP-B02 - WADF IMPUNDMENT #2, HWAAP-B03 - WADF IMPOUNDMENT #3, HWAAP-B05 - 101-15 IMPOUNDMENT, HWAAP-B06 - 101-13 IMPOUNDMENT, HWAAP-B07 - 101-1 CATCHMENT PIT, HWAAP-B08 - 101-1 CATCHMENT PIT, HWAAP-B09 - 101-32 CATCHMENT PIT, HWAAP-B10 - 101-3 CATCHMENT PIT, HWAAP-B11A - 101-31 CATCHMENT PIT, HWAAP-B11B - 101-34 CATCHMENT PIT, HWAAP-B13 - 101-29/36 CATCHMENT PIT, HWAAP-B15 - 101-16 CATCHMENT PIT, HWAAP-B16 - 101-18 CATCHMENT PIT, HWAAP-B17A - 101-20 CATCHMENT PIT, HWAAP-B17B - 101-20 CATCHMENT PIT, HWAAP-B18 - 101-62 CATCHMENT PIT, HWAAP-B19 - 101-11 CATCHMENT PIT, HWAAP-B21 - 101-41/42 CATCHMENT PIT, HWAAP-B22A - 101-44 CATCHMENT PIT, HWAAP-B22B - 101-44 CATCHMENT PIT, HWAAP-B23 - 103-30 CATCHMENT PIT, HWAAP-B25 - 103-7 INERT WASTE IMPOUNDMEN, HWAAP-B27B - 103-8/10 OXIDATION DITCH, HWAAP-B27C - 103-20 SURFACE IMPOUNDMENT, HWAAP-B28A - 108-20 PO SPILL CATCHMENT, HWAAP-B28B - 108-20 PO SPILL CATCHMENT, HWAAP-B28C - 104-8 EO SPILL Impoundment, HWAAP-B28D - 104-10 EO SPILL BASIN, HWAAP-B30 - 101-16 CATCHMENT BASIN, HWAAP-B31 - 101-65 CATCHMENT PIT, HWAAP-B32 - 101-41 CATCHMENT PIT, HWAAP-B33 - 102-51 CATCHMENT PIT, HWAAP-B34 - 104-3 CATCHMENT PIT, HWAAP-C01A - 102-31 ROTARY DEACTIVE FURNA, HWAAP-C02A - 117-3 WADF ROTARY DEACTIVE FURNACE, HWAAP-C03 - DOCUMENT INCINERATOR, HWAAP-D01 - 106-22 & 106-23 NONREACTIVE HW STORAGE, HWAAP-D02 - 115-9 & 113-73A REACTIVE HW STORAGE, HWAAP-E01A - WADF WWTP, HWAAP-E01B - WADF SEWAGE EVAP PONDS, HWAAP-E02 - HWAAP STP EVAP/PERC PONDS, HWAAP-E03 - HAWTHORNE SEWAGE EVAP PONDS, HWAAP-F01 - TRANSFER STATION, PROP DISPOSE OFC(PDO), HWAAP-G01A - OLD BOMB OB/OD GROUND 1, HWAAP-H01 - FIRE TNG PIT, HWAAP-H03 - ROAD & GROUNDS WASTE OB PIT, HWAAP-K01 - WALKER LAKE TEST RANGE, HWAAP-K02 - WALKER LAKE TEST RANGE DISPOSAL PIT)

SI

(HWAAP-A11 - MAG 18-5 DISPOSAL PIT, HWAAP-B01 - WADF IMPOUNDMENT #1, HWAAP-B02 - WADF IMPUNDMENT #2, HWAAP-B03 - WADF IMPOUNDMENT #3, HWAAP-B05 - 101-15 IMPOUNDMENT, HWAAP-B06 - 101-13 IMPOUNDMENT, HWAAP-B07 - 101-1 CATCHMENT PIT, HWAAP-B08 - 101-1 CATCHMENT PIT, HWAAP-B09 - 101-32 CATCHMENT PIT, HWAAP-B10 - 101-3 CATCHMENT PIT, HWAAP-B11A - 101-31 CATCHMENT PIT, HWAAP-B11B - 101-34 CATCHMENT PIT, HWAAP-B13 - 101-29/36 CATCHMENT PIT, HWAAP-B15 - 101-16 CATCHMENT PIT, HWAAP-B16 - 101-18 CATCHMENT PIT, HWAAP-B17A - 101-20 CATCHMENT PIT, HWAAP-B17B - 101-20 CATCHMENT PIT, HWAAP-B18 - 101-62 CATCHMENT PIT, HWAAP-B19 - 101-11 CATCHMENT PIT, HWAAP-B21 - 101-41/42 CATCHMENT PIT, HWAAP-B22A - 101-44 CATCHMENT PIT, HWAAP-B22B - 101-44 CATCHMENT PIT, HWAAP-B23 - 103-30 CATCHMENT PIT, HWAAP-B25 - 103-7 INERT WASTE IMPOUNDMEN, HWAAP-B27B - 103-8/10 OXIDATION DITCH, HWAAP-B27C - 103-20 SURFACE IMPOUNDMENT, HWAAP-B28A - 108-20 PO SPILL CATCHMENT, HWAAP-B28B - 108-20 PO SPILL CATCHMENT, HWAAP-B28C - 104-8 EO SPILL Impoundment, HWAAP-B28D - 104-10 EO SPILL BASIN, HWAAP-B30 - 101-16 CATCHMENT BASIN, HWAAP-B31 - 101-65 CATCHMENT PIT, HWAAP-B32 - 101-41 CATCHMENT PIT, HWAAP-B33 - 102-51 CATCHMENT PIT, HWAAP-B34 - 104-3 CATCHMENT PIT, HWAAP-C01A - 102-31 ROTARY DEACTIVE FURNA, HWAAP-C02A - 117-3 WADF ROTARY DEACTIVE FURNACE, HWAAP-C03 - DOCUMENT

IRP Schedule

CS	<p>INCINERATOR, HWAAP-D01 - 106-22 & 106-23 NONREACTIVE HW STORAGE, HWAAP-D02 - 115-9 & 113-73A REACTIVE HW STORAGE, HWAAP-E01A - WADF WWTP, HWAAP-E01B - WADF SEWAGE EVAP PONDS, HWAAP-E02 - HWAAP STP EVAP/PERC PONDS, HWAAP-E03 - HAWTHORNE SEWAGE EVAP PONDS, HWAAP-F01 - TRANSFER STATION, PROP DISPOSE OFC(PDO), HWAAP-G01A - OLD BOMB OB/OD GROUND 1, HWAAP-H01 - FIRE TNG PIT, HWAAP-H03 - ROAD & GROUNDS WASTE OB PIT, HWAAP-K02 - WALKER LAKE TEST RANGE DISPOSAL PIT)</p> <p>(HWAAP-A03 - COAL ASH LANDFILL(NOT OPEN), HWAAP-A04 - BABBITT CLOSED LANDFILL, HWAAP-A05 - MUSTARD GAS DISPOSAL AREA, HWAAP-A06A - OLD BOMB DISPOSAL AREA 1, HWAAP-A06C - OLD BOMB DISPOSAL AREA 3, HWAAP-A06E - OLD BOMB DISPOSAL AREA 5, HWAAP-A07 - NAVAL INSHORE OPS TNG CNTR FIRING RANGE, HWAAP-A08 - CONSTRUCTION DEBRIS LANDFILL, HWAAP-A09A - AMMO CAN PILES, HWAAP-A09B - BATTERY DISPOSAL AREA, HWAAP-A10 - 107-ROCKET IMPACT AREA, HWAAP-B04 - 101-44 IMPOUNDMENT, HWAAP-B12 - 101-10 CATCHMENT PIT, HWAAP-B20 - 101-41 CATCHMENT PIT, HWAAP-B24 - 102-52 ACID PIT, HWAAP-B26 - 103-6 POL PIT, HWAAP-B27A - 103-16 CATCHMENT PIT, HWAAP-B29 - 103-41 UNLINED PONDS, HWAAP-C04 - OLD BOMB POPPING FURNACE 1, HWAAP-C05 - OLD BOMB POPPING FURNACE #2)</p>
1989	
CS	(HWAAP-G01B - OLD BOMB OB/OD GROUND 2, HWAAP-G01C - OLD BOMB OB/OD GROUND 3 D AREA)
1992	
PA	<p>(HWAAP-I01 - NEW BOMB LANDFILL, HWAAP-I03 - 104-7 PIT #1, HWAAP-I04 - 104-7 PIT #2, HWAAP-I05 - 33-16 LANDFILL, HWAAP-I06 - SPILL SITE 30-5, HWAAP-I07 - 101-44 LANDFILL, HWAAP-I08 - BLDG 70 PIT/LANDFILL, HWAAP-I11 - 49-9 PIT/LANDFILL, HWAAP-I13 - BLDG 10 LANDFILL/DISCHARGE, HWAAP-I14 - BLDG 46 OIL SPILL, HWAAP-I15 - 101-42 CATCHMENT PIT, HWAAP-I17 - 104-10 LANDFILL, HWAAP-I18 - 104-2 HYDROCARBON SPILL, HWAAP-I19 - NAVY BEACH TEST RANGE, HWAAP-J02 - 115 GROUP BURN AREA/LANDFILL, HWAAP-J04 - 107 AREA DRUM STORAGE/LANDFILL, HWAAP-J05 - DOCK 1 LANDFILL, HWAAP-J06 - DOCK 2 LANDFILL, HWAAP-J07 - DOCK 3 LANDFILL, HWAAP-J08 - DOCK 4 LANDFILL, HWAAP-J09 - DOCK 5 LANDFILL, HWAAP-J10 - DOCK 6 LANDFILL, HWAAP-J11 - 103-16 LANDFILL/PILE, HWAAP-J12 - LANDSCAPE LANDFILL, HWAAP-J13 - WADF SOUTH DUMP, HWAAP-J14 - 103-6 TRENCH, HWAAP-J15 - 103-16 LANDFILL, HWAAP-J16 - 111-113 GROUP BURN AREA/LANDFILL, HWAAP-J17 - THORNE DRUM AREA, HWAAP-J21 - BLDG 97 OLD DOCK AREA, HWAAP-J22 - 50 GROUP PITS, HWAAP-J23 - TRENCH AT DUSTY ACRES AREA, HWAAP-J24 - TRENCH NEAR 50-60, HWAAP-J25 - THORNE AREA LANDFILL, HWAAP-J26 - LANDFILL TURN TABLE AREA, HWAAP-J27 - LANDFILL CAMP JUMBO AREA, HWAAP-J28 - 108-3 CATCHMENT PITS, HWAAP-J29 - BUILDING 103-5 LANDFILL)</p>
RFA	(HWAAP-I02 - 110 GROUP OPEN BURNING PIT, HWAAP-I09 - 49-10 PIT/LANDFILL #1 & #2, HWAAP-I22 - OLD BOMB OPEN BURNING PIT, HWAAP-I23 - OLD BOMB/ROCKET METAL LANDFILL)
ISC	(HWAAP-J03 - BLDG 70 DIESEL FUEL LEAK, HWAAP-K03 - UST SITES - INST WIDE)
1994	
INV	(HWAAP-J03 - BLDG 70 DIESEL FUEL LEAK, HWAAP-K05 - LUST SITE AT BLDG 117-3)
SI	(HWAAP-I05 - 33-16 LANDFILL, HWAAP-J11 - 103-16 LANDFILL/PILE, HWAAP-J12 - LANDSCAPE LANDFILL, HWAAP-J13 - WADF SOUTH DUMP, HWAAP-J14 - 103-6 TRENCH, HWAAP-J15 - 103-16 LANDFILL, HWAAP-J16 - 111-113 GROUP BURN AREA/LANDFILL, HWAAP-J23 - TRENCH AT DUSTY ACRES AREA, HWAAP-J25 - THORNE AREA LANDFILL, HWAAP-J26 - LANDFILL TURN TABLE AREA)
RI/FS	(HWAAP-B32 - 101-41 CATCHMENT PIT)
CS	(HWAAP-A06B - OLD BOMB DISPOSAL AREA 2)
1995	
RI/FS	(HWAAP-I15 - 101-42 CATCHMENT PIT)
CAP	(HWAAP-J03 - BLDG 70 DIESEL FUEL LEAK)
INV	(HWAAP-K03 - UST SITES - INST WIDE)
CS	(HWAAP-A06D - OLD BOMB DISPOSAL AREA 4, HWAAP-I02 - 110 GROUP OPEN BURNING PIT, HWAAP-I09 - 49-10 PIT/LANDFILL #1 & #2, HWAAP-I23 - OLD BOMB/ROCKET METAL LANDFILL)

IRP Schedule

SI	(HWAAP-I03 - 104-7 PIT #1, HWAAP-I04 - 104-7 PIT #2, HWAAP-I06 - SPILL SITE 30-5, HWAAP-I07 - 101-44 LANDFILL, HWAAP-I08 - BLDG 70 PIT/LANDFILL, HWAAP-I11 - 49-9 PIT/LANDFILL, HWAAP-I13 - BLDG 10 LANDFILL/DISCHARGE, HWAAP-I14 - BLDG 46 OIL SPILL, HWAAP-I15 - 101-42 CATCHMENT PIT, HWAAP-I17 - 104-10 LANDFILL, HWAAP-I18 - 104-2 HYDROCARBON SPILL, HWAAP-J02 - 115 GROUP BURN AREA/LANDFILL, HWAAP-J04 - 107 AREA DRUM STORAGE/LANDFILL, HWAAP-J05 - DOCK 1 LANDFILL, HWAAP-J06 - DOCK 2 LANDFILL, HWAAP-J07 - DOCK 3 LANDFILL, HWAAP-J08 - DOCK 4 LANDFILL, HWAAP-J09 - DOCK 5 LANDFILL, HWAAP-J10 - DOCK 6 LANDFILL, HWAAP-J17 - THORNE DRUM AREA, HWAAP-J21 - BLDG 97 OLD DOCK AREA, HWAAP-J22 - 50 GROUP PITS, HWAAP-J24 - TRENCH NEAR 50-60, HWAAP-J27 - LANDFILL CAMP JUMBO AREA, HWAAP-J28 - 108-3 CATCHMENT PITS, HWAAP-J29 - BUILDING 103-5 LANDFILL)
PA	(HWAAP-H04 - NAVYSIDE LANDFILL, HWAAP-H05 - OLD DEPOT LAUNDRY WASHOUT)
RFI/CMS	(HWAAP-A09A - AMMO CAN PILES)
1996	
CS	(HWAAP-I22 - OLD BOMB OPEN BURNING PIT)
RI/FS	(HWAAP-B28A - 108-20 PO SPILL CATCHMENT, HWAAP-B28B - 108-20 PO SPILL CATCHMENT, HWAAP-B28C - 104-8 EO SPILL Impoundment, HWAAP-B28D - 104-10 EO SPILL BASIN, HWAAP-B33 - 102-51 CATCHMENT PIT, HWAAP-I14 - BLDG 46 OIL SPILL, HWAAP-J04 - 107 AREA DRUM STORAGE/LANDFILL, HWAAP-J05 - DOCK 1 LANDFILL, HWAAP-J06 - DOCK 2 LANDFILL, HWAAP-J07 - DOCK 3 LANDFILL, HWAAP-J08 - DOCK 4 LANDFILL, HWAAP-J09 - DOCK 5 LANDFILL, HWAAP-J10 - DOCK 6 LANDFILL, HWAAP-J13 - WADF SOUTH DUMP, HWAAP-J17 - THORNE DRUM AREA, HWAAP-J21 - BLDG 97 OLD DOCK AREA, HWAAP-J22 - 50 GROUP PITS, HWAAP-J24 - TRENCH NEAR 50-60, HWAAP-J26 - LANDFILL TURN TABLE AREA, HWAAP-J27 - LANDFILL CAMP JUMBO AREA)
RFI/CMS	(HWAAP-A03 - COAL ASH LANDFILL(NOT OPEN), HWAAP-A09B - BATTERY DISPOSAL AREA)
PA	(HWAAP-K04 - ABOVEGROUND STORAGE TANKS AT BLDG 70)
CAP	(HWAAP-K05 - LUST SITE AT BLDG 117-3)
1997	
RA(C)	(HWAAP-B32 - 101-41 CATCHMENT PIT, HWAAP-K04 - ABOVEGROUND STORAGE TANKS AT BLDG 70)
IRA	(HWAAP-B20 - 101-41 CATCHMENT PIT, HWAAP-H04 - NAVYSIDE LANDFILL)
RI/FS	(HWAAP-B08 - 101-1 CATCHMENT PIT, HWAAP-B09 - 101-32 CATCHMENT PIT, HWAAP-B11A - 101-31 CATCHMENT PIT, HWAAP-B11B - 101-34 CATCHMENT PIT, HWAAP-B13 - 101-29/36 CATCHMENT PIT, HWAAP-B16 - 101-18 CATCHMENT PIT, HWAAP-B17A - 101-20 CATCHMENT PIT, HWAAP-B17B - 101-20 CATCHMENT PIT, HWAAP-B18 - 101-62 CATCHMENT PIT, HWAAP-B19 - 101-11 CATCHMENT PIT, HWAAP-B30 - 101-16 CATCHMENT BASIN, HWAAP-B31 - 101-65 CATCHMENT PIT, HWAAP-H04 - NAVYSIDE LANDFILL, HWAAP-I03 - 104-7 PIT #1, HWAAP-J14 - 103-6 TRENCH)
RD	(HWAAP-B32 - 101-41 CATCHMENT PIT)
RFI/CMS	(HWAAP-A06B - OLD BOMB DISPOSAL AREA 2, HWAAP-A06C - OLD BOMB DISPOSAL AREA 3, HWAAP-A06D - OLD BOMB DISPOSAL AREA 4, HWAAP-A06E - OLD BOMB DISPOSAL AREA 5, HWAAP-B12 - 101-10 CATCHMENT PIT, HWAAP-C04 - OLD BOMB POPPING FURNACE 1, HWAAP-C05 - OLD BOMB POPPING FURNACE #2, HWAAP-G01B - OLD BOMB OB/OD GROUND 2, HWAAP-G01C - OLD BOMB OB/OD GROUND 3 D AREA, HWAAP-I22 - OLD BOMB OPEN BURNING PIT, HWAAP-I23 - OLD BOMB/ROCKET METAL LANDFILL)
IMP(C)	(HWAAP-J03 - BLDG 70 DIESEL FUEL LEAK)
1998	
DES	(HWAAP-B12 - 101-10 CATCHMENT PIT, HWAAP-K03 - UST SITES - INST WIDE)
RFI/CMS	(HWAAP-A04 - BABBITT CLOSED LANDFILL, HWAAP-B24 - 102-52 ACID PIT)
CMI(C)	(HWAAP-A09B - BATTERY DISPOSAL AREA)
CAP	(HWAAP-K03 - UST SITES - INST WIDE)
RI/FS	(HWAAP-B05 - 101-15 IMPOUNDMENT, HWAAP-B06 - 101-13 IMPOUNDMENT, HWAAP-B10 - 101-3 CATCHMENT PIT, HWAAP-B15 - 101-16 CATCHMENT PIT)

IRP Schedule

RD	(HWAAP-B05 - 101-15 IMPOUNDMENT, HWAAP-B06 - 101-13 IMPOUNDMENT, HWAAP-B08 - 101-1 CATCHMENT PIT, HWAAP-B09 - 101-32 CATCHMENT PIT, HWAAP-B10 - 101-3 CATCHMENT PIT, HWAAP-B11A - 101-31 CATCHMENT PIT, HWAAP-B11B - 101-34 CATCHMENT PIT, HWAAP-B13 - 101-29/36 CATCHMENT PIT, HWAAP-B15 - 101-16 CATCHMENT PIT, HWAAP-B16 - 101-18 CATCHMENT PIT, HWAAP-B17A - 101-20 CATCHMENT PIT, HWAAP-B17B - 101-20 CATCHMENT PIT, HWAAP-B18 - 101-62 CATCHMENT PIT, HWAAP-B19 - 101-11 CATCHMENT PIT, HWAAP-B30 - 101-16 CATCHMENT BASIN, HWAAP-B31 - 101-65 CATCHMENT PIT)
1999	
RA(C)	(HWAAP-B06 - 101-13 IMPOUNDMENT, HWAAP-B07 - 101-1 CATCHMENT PIT, HWAAP-B08 - 101-1 CATCHMENT PIT, HWAAP-B09 - 101-32 CATCHMENT PIT, HWAAP-B10 - 101-3 CATCHMENT PIT, HWAAP-B11A - 101-31 CATCHMENT PIT, HWAAP-B11B - 101-34 CATCHMENT PIT, HWAAP-B13 - 101-29/36 CATCHMENT PIT, HWAAP-B15 - 101-16 CATCHMENT PIT, HWAAP-B16 - 101-18 CATCHMENT PIT, HWAAP-B17A - 101-20 CATCHMENT PIT, HWAAP-B17B - 101-20 CATCHMENT PIT, HWAAP-B18 - 101-62 CATCHMENT PIT, HWAAP-B19 - 101-11 CATCHMENT PIT, HWAAP-B22A - 101-44 CATCHMENT PIT, HWAAP-B22B - 101-44 CATCHMENT PIT, HWAAP-B23 - 103-30 CATCHMENT PIT, HWAAP-B28A - 108-20 PO SPILL CATCHMENT, HWAAP-B28B - 108-20 PO SPILL CATCHMENT, HWAAP-B28C - 104-8 EO SPILL Impoundment, HWAAP-B28D - 104-10 EO SPILL BASIN, HWAAP-B30 - 101-16 CATCHMENT BASIN, HWAAP-B31 - 101-65 CATCHMENT PIT, HWAAP-B33 - 102-51 CATCHMENT PIT, HWAAP-I14 - BLDG 46 OIL SPILL, HWAAP-J05 - DOCK 1 LANDFILL, HWAAP-J06 - DOCK 2 LANDFILL, HWAAP-J07 - DOCK 3 LANDFILL, HWAAP-J08 - DOCK 4 LANDFILL, HWAAP-J09 - DOCK 5 LANDFILL, HWAAP-J10 - DOCK 6 LANDFILL, HWAAP-J13 - WADF SOUTH DUMP, HWAAP-J17 - THORNE DRUM AREA, HWAAP-J21 - BLDG 97 OLD DOCK AREA, HWAAP-J22 - 50 GROUP PITS, HWAAP-J24 - TRENCH NEAR 50-60)
IMP(C)	(HWAAP-K05 - LUST SITE AT BLDG 117-3)
RFI/CMS	(HWAAP-A08 - CONSTRUCTION DEBRIS LANDFILL, HWAAP-B26 - 103-6 POL PIT, HWAAP-B27A - 103-16 CATCHMENT PIT, HWAAP-B29 - 103-41 UNLINED PONDS)
RD	(HWAAP-B22A - 101-44 CATCHMENT PIT, HWAAP-B22B - 101-44 CATCHMENT PIT, HWAAP-B23 - 103-30 CATCHMENT PIT, HWAAP-I18 - 104-2 HYDROCARBON SPILL)
DES	(HWAAP-A04 - BABBITT CLOSED LANDFILL, HWAAP-B29 - 103-41 UNLINED PONDS)
CMI(C)	(HWAAP-A03 - COAL ASH LANDFILL(NOT OPEN), HWAAP-A09A - AMMO CAN PILES, HWAAP-B12 - 101-10 CATCHMENT PIT)
RI/FS	(HWAAP-B21 - 101-41/42 CATCHMENT PIT, HWAAP-B22A - 101-44 CATCHMENT PIT, HWAAP-B22B - 101-44 CATCHMENT PIT, HWAAP-B23 - 103-30 CATCHMENT PIT, HWAAP-B25 - 103-7 INERT WASTE IMPOUNDMENT, HWAAP-B27B - 103-8/10 OXIDATION DITCH, HWAAP-B27C - 103-20 SURFACE IMPOUNDMENT, HWAAP-B34 - 104-3 CATCHMENT PIT, HWAAP-C01A - 102-31 ROTARY DEACTIVE FURNA, HWAAP-H01 - FIRE TNG PIT, HWAAP-H03 - ROAD & GROUNDS WASTE OB PIT, HWAAP-H05 - OLD DEPOT LAUNDRY WASHOUT, HWAAP-I04 - 104-7 PIT #2, HWAAP-I05 - 33-16 LANDFILL, HWAAP-I06 - SPILL SITE 30-5, HWAAP-I07 - 101-44 LANDFILL, HWAAP-I08 - BLDG 70 PIT/LANDFILL, HWAAP-I11 - 49-9 PIT/LANDFILL, HWAAP-I13 - BLDG 10 LANDFILL/DISCHARGE, HWAAP-I17 - 104-10 LANDFILL, HWAAP-I18 - 104-2 HYDROCARBON SPILL, HWAAP-J02 - 115 GROUP BURN AREA/LANDFILL, HWAAP-J11 - 103-16 LANDFILL/PILE, HWAAP-J12 - LANDSCAPE LANDFILL, HWAAP-J15 - 103-16 LANDFILL, HWAAP-J16 - 111-113 GROUP BURN AREA/LANDFILL, HWAAP-J23 - TRENCH AT DUSTY ACRES AREA, HWAAP-J25 - THORNE AREA LANDFILL, HWAAP-J28 - 108-3 CATCHMENT PITS, HWAAP-J29 - BUILDING 103-5 LANDFILL)
RA(O)	(HWAAP-I14 - BLDG 46 OIL SPILL, HWAAP-J05 - DOCK 1 LANDFILL, HWAAP-J06 - DOCK 2 LANDFILL)
IRA	(HWAAP-A08 - CONSTRUCTION DEBRIS LANDFILL, HWAAP-H05 - OLD DEPOT LAUNDRY WASHOUT, HWAAP-I03 - 104-7 PIT #1, HWAAP-I04 - 104-7 PIT #2, HWAAP-J11 - 103-16 LANDFILL/PILE, HWAAP-J12 - LANDSCAPE LANDFILL)
2000	
RD	(HWAAP-A11 - MAG 18-5 DISPOSAL PIT, HWAAP-B27B - 103-8/10 OXIDATION DITCH, HWAAP-B27C - 103-20 SURFACE IMPOUNDMENT, HWAAP-C01A - 102-31 ROTARY DEACTIVE FURNA, HWAAP-I11 - 49-9 PIT/LANDFILL)
CMI(C)	(HWAAP-A04 - BABBITT CLOSED LANDFILL)

IRP Schedule

LTM	(HWAAP-B12 - 101-10 CATCHMENT PIT, HWAAP-J12 - LANDSCAPE LANDFILL)
SI	(HWAAP-K08 - PAINT STORAGE LOCKER SHEDS, HWAAP-K09 - SUMP AND DISCHARGE PIPE, HWAAP-K10 - BURIED PAINT, HWAAP-K11 - SKEET RANGE)
RA(C)	(HWAAP-B05 - 101-15 IMPOUNDMENT, HWAAP-B21 - 101-41/42 CATCHMENT PIT, HWAAP-B27B - 103-8/10 OXIDATION DITCH, HWAAP-B27C - 103-20 SURFACE IMPOUNDMENT, HWAAP-H01 - FIRE TNG PIT, HWAAP-I18 - 104-2 HYDROCARBON SPILL)
PA	(HWAAP-K08 - PAINT STORAGE LOCKER SHEDS, HWAAP-K09 - SUMP AND DISCHARGE PIPE, HWAAP-K10 - BURIED PAINT, HWAAP-K11 - SKEET RANGE)
IRA	(HWAAP-J15 - 103-16 LANDFILL)
IMP(C)	(HWAAP-K03 - UST SITES - INST WIDE)
RFA	(HWAAP-K07 - OLD BOMB DDT BURIAL SITE)
2001	
RD	(HWAAP-I08 - BLDG 70 PIT/LANDFILL, HWAAP-J14 - 103-6 TRENCH)
RA(C)	(HWAAP-A11 - MAG 18-5 DISPOSAL PIT, HWAAP-C01A - 102-31 ROTARY DEACTIVE FURNA, HWAAP-I11 - 49-9 PIT/LANDFILL, HWAAP-J14 - 103-6 TRENCH, HWAAP-J28 - 108-3 CATCHMENT PITS)
RFI/CMS	(HWAAP-A05 - MUSTARD GAS DISPOSAL AREA)
LTM	(HWAAP-J15 - 103-16 LANDFILL)
2002	
RFI/CMS	(HWAAP-B20 - 101-41 CATCHMENT PIT)
LTM	(HWAAP-A08 - CONSTRUCTION DEBRIS LANDFILL, HWAAP-B23 - 103-30 CATCHMENT PIT, HWAAP-H05 - OLD DEPOT LAUNDRY WASHOUT)
2003	
RD	(HWAAP-J29 - BUILDING 103-5 LANDFILL)
RFA	(PBC@Hawthorne - PBC)
RI/FS	(HWAAP-K08 - PAINT STORAGE LOCKER SHEDS, HWAAP-K09 - SUMP AND DISCHARGE PIPE, HWAAP-K11 - SKEET RANGE)
2004	
RI/FS	(HWAAP-K10 - BURIED PAINT)
DES	(PBC@Hawthorne - PBC)
IRA	(HWAAP-K10 - BURIED PAINT)
RA(C)	(HWAAP-I08 - BLDG 70 PIT/LANDFILL, HWAAP-J29 - BUILDING 103-5 LANDFILL)
RFI/CMS	(PBC@Hawthorne - PBC)
LTM	(HWAAP-H04 - NAVYSIDE LANDFILL)
2005	
RA(C)	(HWAAP-I07 - 101-44 LANDFILL)
CMI(C)	(HWAAP-B20 - 101-41 CATCHMENT PIT)
2006	
CMI(C)	(HWAAP-B29 - 103-41 UNLINED PONDS)
RFA	(HWAAP-B24A - BLDG 336: FUEL STORAGE)
2007	
RFI/CMS	(HWAAP-B24A - BLDG 336: FUEL STORAGE)
CS	(HWAAP-B24A - BLDG 336: FUEL STORAGE)
DES	(HWAAP-B24 - 102-52 ACID PIT, HWAAP-B24A - BLDG 336: FUEL STORAGE , HWAAP-B27A - 103-16 CATCHMENT PIT)
2008	
IMP(O)	(HWAAP-J03 - BLDG 70 DIESEL FUEL LEAK, HWAAP-K03 - UST SITES - INST WIDE, HWAAP-K05 -

DES LUST SITE AT BLDG 117-3)
 (HWAAP-B26 - 103-6 POL PIT)
2009
 CMI(O) (HWAAP-B20 - 101-41 CATCHMENT PIT)
 CMI(C) (HWAAP-B24 - 102-52 ACID PIT, HWAAP-B24A - BLDG 336: FUEL STORAGE , PBC@Hawthorne - PBC)
2010
 LTM (HWAAP-A06B - OLD BOMB DISPOSAL AREA 2, HWAAP-A06C - OLD BOMB DISPOSAL AREA 3, HWAAP-A06D - OLD BOMB DISPOSAL AREA 4, HWAAP-A06E - OLD BOMB DISPOSAL AREA 5, HWAAP-C04 - OLD BOMB POPPING FURNACE 1, HWAAP-C05 - OLD BOMB POPPING FURNACE #2, HWAAP-G01B - OLD BOMB OB/OD GROUND 2, HWAAP-G01C - OLD BOMB OB/OD GROUND 3 D AREA, HWAAP-I22 - OLD BOMB OPEN BURNING PIT, HWAAP-I23 - OLD BOMB/ROCKET METAL LANDFILL, HWAAP-K07 - OLD BOMB DDT BURIAL SITE)
2012
 LTM (HWAAP-A05 - MUSTARD GAS DISPOSAL AREA, HWAAP-A11 - MAG 18-5 DISPOSAL PIT)
 CMI(C) (HWAAP-B26 - 103-6 POL PIT, HWAAP-B27A - 103-16 CATCHMENT PIT)
2013
 RFI/CMS (HWAAP-I02 - 110 GROUP OPEN BURNING PIT)
 CMI(O) (PBC@Hawthorne - PBC)

Projected Phase Completion Milestones

See attached schedule

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

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

Final RA(C) Completion Date: 201809

Schedule for Next Five-Year Review: 2015

Estimated Completion Date of IRP at Installation (including LTM phase): 204709

HAWTHORNE ARMY DEPOT IRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
HWAAP-B04	101-44 IMPOUNDMENT	CMI(C)						
		CMI(O)						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
HWAAP-B24A	BLDG 336: FUEL STORAGE	CMI(O)						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
HWAAP-B26	103-6 POL PIT	CMI(O)						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
HWAAP-B27A	103-16 CATCHMENT PIT	CMI(O)						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
HWAAP-I02	110 GROUP OPEN BURNING PIT	LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
HWAAP-I09	49-10 PIT/LANDFILL #1 & #2	CMI(O)						

HAWTHORNE ARMY DEPOT
Army Defense Environmental Restoration Program
Military Munitions Response Program

MMRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 21/14

Installation Site Types with Future and/or Underway Phases

- 2 Explosive Ordnance Disposal Area
(HWAAP-012-R-01, HWAAP-013-R-01)
- 5 Firing Range
(HWAAP-008-R-01, HWAAP-009-R-01, HWAAP-010-R-01, HWAAP-020-R-01, HWAAP-022-R-01)

Most Widespread Contaminants of Concern

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

Media of Concern

Groundwater, Sediment, Soil, Surface Water

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 200009

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 202206/202206

Date of MMRP completion including Long Term Management (LTM): 206707

MMRP Contamination Assessment

Contamination Assessment Overview

The Phase III Army range inventory (also known as the closed, transferred, or transferring inventory) was completed at HWAD in May 2003. The inventory identified 17 sites as eligible for the MMRP. The Phase III inventory serves as the PA under CERCLA.

The SI was finalized in September 2009. An RI is currently underway for 13 MMRP sites.

The RI for 13 sites was completed in 2012. The RI recommended NFA for nine sites, and to conduct a FS for four of the sites.

NFA DDs were completed for nine sites in 2013. An FS was completed for four sites in 2014, as well as proposed plans.

Final RA DDs were completed in 2015 for three sites and one RA DD is awaiting final approval which is anticipated in 2016.

A RA PBC was awarded in 2015 with anticipated completion in 2019.

Cleanup Exit Strategy

The installation is executing removal actions at three sites and will implement LUCs as specified in the approved DDs.

MMRP Previous Studies

Year	Title	Author	Date
2003	Final US Army Closed, Transferring and Transferred Range/Site Inventory for Hawthorne AD, NV	TechLaw, Inc.	MAR-2003
2004	Property Eligibility Report, Hawthorne Army Depot, Nevada	TechLaw, Inc.	JUL-2004
2009	Final SI Report	FPM Group, URS	SEP-2009
2012	Final Work Plan	Parsons	AUG-2012
	HWAAP-007-R-01 DD 1958 Armed Forces Day MMRP Site	USACE	SEP-2012
	HWAAP-016-R-001	USACE	SEP-2012
	RI Report Pre:1940 Detonating Pits Transferred	Parsons	OCT-2012
2013	RI Report Walker Lake Water Munitions Response Sites	Parsons	JAN-2013
	RI Old Bomb Rocket Firing Range South	Parsons	FEB-2013
	Final Action Memorandum for the Removal of MPPEH Walker Lake Land Range	EW Wells	APR-2013
	Engineering Evaluation/Cost Analysis for MPPEH	EW Wells	APR-2013
	RI Report Whiskey Flat Munitions Site HWAAP-020-R-01	Parsons	APR-2013
	RI Report Walker Lake Land Test Range, Rev 2	Parsons	JUN-2013
	Final RI Kickout Outside New Bomb Area HWAAP-017-R-01	Parsons	SEP-2013
	RI Old Bomb Rocket Firing Range East HWAAP-022-R-01	Parsons	SEP-2013
	Final HWAAP-018-R-001 Munition Response Site DD-Mono Lake	USACE	OCT-2013
	Final Site Specific Report, NTCRA of the MPPEH	EW Wells	DEC-2013
2014	FS Report Walker Lake Water Munitions Response	Parsons	JAN-2014
	FS Rocket Firing Range South	Parsons	FEB-2014
	FS Report Whiskey Flat Munitions Site HWAAP-020-R-	Parsons	APR-2014
	FS Report Walker Lake Land Test Range, Rev 2	Parsons	JUN-2014
	FS Old Bomb Rocket Firing Range East HWAAP-022-	Parsons	SEP-2014

HAWTHORNE ARMY DEPOT
Military Munitions Response Program
Site Descriptions

Site ID: HWAAP-008-R-01
Site Name: WALKER LAKE LAND TEST RANGE
Alias: WL Land

STATUS

Regulatory Driver: CERCLA
MRSPP Score: 02
 Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)
 Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	200209.....	200305
SI.....	200703.....	200909
RI/FS.....	201007.....	201410
RD.....	201504.....	201609
RA(C).....	201506.....	202206
LTM.....	202207.....	206707
RIP Date:	N/A	
RC Date:	202206	

SITE DESCRIPTION

This 506-acre closed range in the northeastern part of the installation is still owned by the US Army and was used from approximately 1942 until approximately 1954 to test 7.2-inch Hedgehog depth charges. The range encompasses both 8,000 and 9,000 foot ranges, which were both shown on maps of this range. There is no possibility that the 7.2-inch Hedgehog depth charge could leave the installation boundary, as its maximum range as tested at HWAD was 300 yards, according to Operating Procedure 1415. This range is part of a compliance agreement with the US Army and the state of NV and has been swept on numerous occasions for removal of munitions debris and UXO. The area of this range is undeveloped. This portion of the range lies within the installation boundary; a separate portion lying outside the installation boundary, HWAAP-002-R-01, Walker Lake Land Test Range [transferred (TD)], HWAAP-001-R-01 Walker Lake Water Test Range, and HWAAP-021-R-01 Walker Lake Water Test Range (TD) were realigned to this site for the FS. This area has been amended to include the Walker Lake Impact area as well. The FS/PP are completed and the RA DD is underway.

CLEANUP/EXIT STRATEGY

A RD, RA(C), and LTM are planned. Five-year review costs will be tracked in site CCHWAAP-I15.

Site ID: HWAAP-009-R-01
Site Name: ASROC RANGES
Alias: ASROC

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 05

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

Media of Concern: Sediment, Surface Water

Phases	Start	End
PA.....	200209.....	200305
SI.....	200703.....	200909
RI/FS.....	201007.....	201405
LTM.....	201405.....	204405

RIP Date: N/A

RC Date: 201405

SITE DESCRIPTION

This 6,619-acre closed range is still owned by the US Army and was used in 1957 and 1958, and again from approximately 1962 to 1965, to test anti-submarine rockets (ASROC). These rockets only contained inert warheads. This range is the combination of three separate ranges where ASROCs were fired: ASROC Range A, ASROC Range B/Barlow Ranch, and Navy Beach Test Range. The ranges were combined into one ASROC range to reduce the confusion generated by the multiple overlaps of these three ranges with the Walker Lake Water Test Range. The area of this range is primarily within Walker Lake, which is used for recreational purposes, although some shoreline and adjacent land is also encompassed by this range. The shoreline is undeveloped. A portion of this range is also located outside the installation boundary and is addressed under HWAAP-010-R-01, ASROC Ranges (TD). It has been discovered that a cleanup action took place in the mid-1970s. This range is part of a compliance agreement between NDEP and HWAD and is swept on a quarterly basis by the operating contractor. As Walker Lake continues to recede, additional MEC becomes exposed as the lake recedes and continued cleanup is required. The site has been realigned to incorporate the Shoreline area of interest (AOI). The RI recommends five-year reviews with institutional controls which includes the sweeps. The NFA DD with LUCs to include sweeps and public education was completed in 2014.

CLEANUP/EXIT STRATEGY

LUCs will be periodic sweeps and public education.

Site ID: HWAAP-010-R-01
Site Name: ASROC RANGES (TD)
Alias: ASROC TD

STATUS

Regulatory Driver: CERCLA
MRSPP Score: Evaluation pending
 Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)
 Media of Concern: Sediment, Surface Water

Phases	Start	End
PA.....	200209.....	200305
SI.....	200703.....	200909
RI/FS.....	201007.....	201407
LTM.....	201407.....	204407
RIP Date:	N/A	
RC Date:	201407	

SITE DESCRIPTION

This 6,411-acre TD range, partly owned by the state of NV and partly owned by the Bureau of Land Management, was used in 1957 and 1958, and again from approximately 1962 to 1965, to test ASROCs. These rockets only contained inert warheads. This range is the combination of three separate ranges where ASROCs were fired: ASROC Range A, ASROC Range B/Barlow Ranch, and Navy Beach Test Range. The ranges were combined into one ASROC range to reduce the confusion generated by the multiple overlaps of these three ranges with the Walker Lake Water Test Range. No remediation activities are known to have taken place at this range. The area of this range is primarily within Walker Lake, which is used for recreational purposes, although some shoreline and adjacent land is also encompassed by this range. The shoreline is undeveloped. A portion of this range is located inside the installation boundary, and is addressed under HWAAP-009-R-01, ASROC Ranges. This range was never owned by the DoD. It has been discovered that a cleanup action took place in the mid-1970s. This range is part of a compliance agreement between NDEP and HWAD and is swept on a quarterly basis by the OC. As Walker Lake continues to recede, additional MEC becomes exposed and continued cleanup is required. The site has been realigned to incorporate the Shoreline AOI. RI recommends five-year reviews with institutional controls which includes the sweeps. The FS and NFA DD with LUCs was completed in 2014.

CLEANUP/EXIT STRATEGY

LUCs will be shoreline sweeps and public education.

Site ID: HWAAP-012-R-01
Site Name: PRE-1940 DETONATING PITS (TD)
Alias: Pre1940 TD

STATUS

Regulatory Driver: CERCLA
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
PA.....	200209.....	200305
SI.....	200703.....	200909
RI/FS.....	201007.....	201406
LTM.....	201406.....	204406
RIP Date: N/A		
RC Date: 201406		

SITE DESCRIPTION

This 892-acre TD site lying to the east of the installation is owned by the Bureau of Land Management and was used from approximately 1930 until approximately 1940, presumably for the detonation of obsolete munitions. Although documented information about this site, other than its presence on a map, was not available, an interviewee stated that the types of munitions that would have been detonated at such a site would include fuses, bombs, rockets, land mines, and mortars. This area represents a kickout area outside the installation boundary and was identified based on the longest kickout distance among the munitions likely detonated here. Installation personnel stated that current employees do not recall the use of these pits that they have not seen these pits characterized in other reports, and that the recent unsigned, unapproved contractor-developed map created in 1980, which includes these pits, is most likely incorrect. No remediation activities are known to have taken place at this site, except a site reconnaissance in the area which identified only one inert piece of ordnance that was likely the result of kickouts from the Old Bomb Area detonations. The area of this site is undeveloped, but is most likely used for recreational purposes. This range was never owned by the DoD.

A programmatic decision was made to address this munitions response site (MRS) under the active MMRP. While the property was found to be eligible for the Formerly Used Defense Sites (FUDS) program, the activity was not; thus, the decision and inclusion as an active MMRP site. An RI has been completed and NFA has been recommended. The NFA DD and RC were completed in 2014.

CLEANUP/EXIT STRATEGY

NFA has been achieved and LTM is currently underway.

Site ID: HWAAP-013-R-01
Site Name: PRE-1940 DETONATING PITS
Alias: Pre-1940

STATUS

Regulatory Driver: CERCLA
MRSPP Score: 06
 Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)
 Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	200209.....	200305
SI.....	200703.....	200909
RI/FS.....	201007.....	201410
RD.....	201504.....	201512
RA(C).....	201504.....	201708
LTM.....	201806.....	204506
RIP Date:	N/A	
RC Date:	201709	

SITE DESCRIPTION

This 3,140-closed site in the eastern part of the installation is still owned by the US Army and was used from approximately 1930 until approximately 1940, presumably for the detonation of obsolete munitions. Although documented information about this site, other than its presence on a map, was not available, an interviewee stated that the types of munitions that would have been detonated at such a site would include fuses, bombs, rockets, landmines, and mortars. Installation personnel stated that current employees do not recall the use of these pits, that they have not seen these pits characterized in other reports, and that the recent unsigned, unapproved contractor-developed map created in 1980, which includes these pits, is most likely incorrect. No remediation activities are known to have taken place at this site, other than a site reconnaissance in this area which, according to an HWAD employee, identified only one inert piece of ordnance, which installation personnel say was likely the result of kickouts from the Old Bomb Area detonations. The area of this site is undeveloped, but is most likely used for recreational purposes; however, the area immediately surrounding the site is industrial. A second portion of this range is outside the installation boundary and is addressed under HWAAP-012-R-001, Pre-1940 Detonating Pits (TD). An RI is currently underway and preliminary investigation results have been reviewed. The site has been realigned to include only 2.7 acres which encompasses the burial pit and surrounding area. This pit was potentially thought to contain chemical warfare material; however, a probability assessment has determined this to be unlikely. A FS/PP was completed in 2014 and the RA DD was completed in 2015.

CLEANUP/EXIT STRATEGY

The RA is underway. LTM is anticipated to begin at end of the current PBC in 2018.

Site ID: HWAAP-020-R-01
Site Name: WHISKEY FLAT
Alias: Whiskey

STATUS

Regulatory Driver: CERCLA
MRSPP Score: 03
 Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)
 Media of Concern: Groundwater, Soil

Phases	Start	End
PA.....	200209.....	200305
SI.....	200703.....	200909
RI/FS.....	201007.....	201410
RD.....	201505.....	201510
RA(C).....	201610.....	202009
LTM.....	202009.....	206506
RIP Date:	N/A	
RC Date:	202009	

SITE DESCRIPTION

This 9,115-acre TD range, located south of the Old Bomb Area in the southeastern corner of the installation, is owned by the Bureau of Land Management. The range encompassed the safety fan for test rockets from approximately 1968 to 1975. It also received kickouts from OB/open detonation (OD) operations in the Old Bomb Area portion of the installation in 1946. An Army bulletin from that time noted that 10 personnel were in the Old Bomb Area destroying obsolete and defective ammunition, with 1,200 pounds (lb) of TNT used in each blast. Some of the kickouts from this operation went outside the installation boundary. In addition, 3 acres of the northernmost extreme portions of this area were part of the safety fan for the Carter Mortar Test Range, which was used to test mortars from approximately 1971 to 1990. Installation personnel stated that none of the munitions from the Carter Mortar Test Range would have gone outside of the installation boundary. As of mid-1995, 8,259 acres of Whiskey Flat had been cleared of hazardous ordnance and inert ordnance residue. The ordnance retrieved during this clearance project included rockets, rocket fuses, demolition charges, and TNT. What, if any, remediation activities have taken place in this area since 1995 is unknown. The area of this range is undeveloped, but is most likely used for recreational purposes. This range was never owned by the DoD. An RI has been completed and the site is moving to the FS/DD phase with a reduced footprint of 4,391 acres. The remaining 4,724 acres are FFA and are realigned to HWAAP-020-R-02. The FS/PP were completed in 2014 and the RA DD is anticipated for completion in 2015.

CLEANUP/EXIT STRATEGY

An RD is pending and RA(C) is planned and has been awarded as PBC option pending approval.

Site ID: HWAAP-022-R-01

Site Name: OLD BOMB ROCKET FIRING RANGE-EAST

Alias: OB East

STATUS

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

Phases	Start	End
PA.....	200209.....	200305
SI.....	200703.....	200909
RI/FS.....	201007.....	201410
RD.....	201506.....	201510
RA(C).....	201509.....	201709
LTM.....	201710.....	204510
RIP Date:	N/A	
RC Date:	201709	

SITE DESCRIPTION

This 15,496-acre TD range located east of the Old Bomb Area in the southeastern portion of the installation is owned by the Bureau of Land Management and was used from approximately 1968 until approximately 1980 to test various rockets. The length of the safety fan, 11,000 yards, was derived from munitions descriptions for air-to-ground 5-inch rockets found in a Navy technical manual. This safety fan was assumed to be the nearest match in the manual for the rockets fired at this range. These rockets were fired from a fixed land launch point. The US Marine Corps has conducted several UXO sweeps throughout the area known as Old Bomb, including this area. Other than these sweeps, no remediation activities are known to have taken place in this area. The area of this range is undeveloped, but is likely used for recreational purposes. This range was never owned by the DoD. An RI has been completed and the site will move to FS phase with a reduced footprint of 845 acres. The remaining 14,651 acres has been realigned to site HWAAP-022-R-02. An FS/PP was completed in 2014 and an RA DD PBA contract was awarded in 2015.

CLEANUP/EXIT STRATEGY

RA(C) is underway.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
HWAAP-001-R-01	WALKER LAKE WATER TEST RANGE	201503	
HWAAP-002-R-01	WALKER LAKE LAND TEST RANGE (TD)	201412	
HWAAP-006-R-01	OLD BOMB ROCKET FIRING RANGE-SOUTH	201503	
HWAAP-007-R-01	1958 ARMED FORCES DAY AREA	201208	Final SI (2009) recommended NFA at this site for both MEC and MC.
HWAAP-011-R-01	1957 ARMED FORCES DAY AREA	200909	Final HRR determined this site was eligible for the FUDS MMRP; therefore, it is not eligible for the Active MMRP.
HWAAP-013-R-02	Pre-1940 Detonating Pits NFA	201410	
HWAAP-015-R-01	COREY PEAK/TV HILL	200909	Final HRR determined this site was eligible for the FUDS MMRP; therefore, it is not eligible for the Active MMRP.
HWAAP-016-R-01	FUZE TEST AREA	201208	Final SI (2009) recommended NFA at this site for both MEC and MC.
HWAAP-017-R-01	KICKOUT OUTSIDE NEW BOMB AREA	201303	
HWAAP-018-R-01	MONO LAKE	201311	
HWAAP-020-R-02	Whiskey Flat No Further Action	201410	
HWAAP-021-R-01	WALKER LAKE WATER TEST RANGE (TD)	201405	
HWAAP-022-R-02	Old Bomb Rocket Firing Range-E NFA	201410	
PBA@MR HWAAP	PBA for MMRP	201201	PBA is fully funded.

MMRP Schedule

Date of MMRP Inception 200009

Past Phase Completion Milestones

2002

RFA (PBA@MR HWAAP - PBA for MMRP)

2003

PA (HWAAP-001-R-01 - WALKER LAKE WATER TEST RANGE, HWAAP-002-R-01 - WALKER LAKE LAND TEST RANGE (TD), HWAAP-006-R-01 - OLD BOMB ROCKET FIRING RANGE-SOUTH, HWAAP-007-R-01 - 1958 ARMED FORCES DAY AREA, HWAAP-008-R-01 - WALKER LAKE LAND TEST RANGE, HWAAP-009-R-01 - ASROC RANGES, HWAAP-010-R-01 - ASROC RANGES (TD), HWAAP-011-R-01 - 1957 ARMED FORCES DAY AREA, HWAAP-012-R-01 - PRE-1940 DETONATING PITS (TD), HWAAP-013-R-01 - PRE-1940 DETONATING PITS, HWAAP-013-R-02 - Pre-1940 Detonating Pits NFA, HWAAP-015-R-01 - COREY PEAK/TV HILL, HWAAP-016-R-01 - FUZE TEST AREA, HWAAP-017-R-01 - KICKOUT OUTSIDE NEW BOMB AREA, HWAAP-018-R-01 - MONO LAKE, HWAAP-020-R-01 - WHISKEY FLAT, HWAAP-020-R-02 - Whiskey Flat No Further Action, HWAAP-021-R-01 - WALKER LAKE WATER TEST RANGE (TD), HWAAP-022-R-01 - OLD BOMB ROCKET FIRING RANGE-EAST, HWAAP-022-R-02 - Old Bomb Rocket Firing Range-E NFA)

2009

SI (HWAAP-001-R-01 - WALKER LAKE WATER TEST RANGE, HWAAP-002-R-01 - WALKER LAKE LAND TEST RANGE (TD), HWAAP-006-R-01 - OLD BOMB ROCKET FIRING RANGE-SOUTH, HWAAP-007-R-01 - 1958 ARMED FORCES DAY AREA, HWAAP-008-R-01 - WALKER LAKE LAND TEST RANGE, HWAAP-009-R-01 - ASROC RANGES, HWAAP-010-R-01 - ASROC RANGES (TD), HWAAP-011-R-01 - 1957 ARMED FORCES DAY AREA, HWAAP-012-R-01 - PRE-1940 DETONATING PITS (TD), HWAAP-013-R-01 - PRE-1940 DETONATING PITS, HWAAP-013-R-02 - Pre-1940 Detonating Pits NFA, HWAAP-015-R-01 - COREY PEAK/TV HILL, HWAAP-016-R-01 - FUZE TEST AREA, HWAAP-017-R-01 - KICKOUT OUTSIDE NEW BOMB AREA, HWAAP-018-R-01 - MONO LAKE, HWAAP-020-R-01 - WHISKEY FLAT, HWAAP-020-R-02 - Whiskey Flat No Further Action, HWAAP-021-R-01 - WALKER LAKE WATER TEST RANGE (TD), HWAAP-022-R-01 - OLD BOMB ROCKET FIRING RANGE-EAST, HWAAP-022-R-02 - Old Bomb Rocket Firing Range-E NFA)

CS (PBA@MR HWAAP - PBA for MMRP)

2012

RFI/CMS (PBA@MR HWAAP - PBA for MMRP)

2013

RI/FS (HWAAP-017-R-01 - KICKOUT OUTSIDE NEW BOMB AREA)

2014

RI/FS (HWAAP-009-R-01 - ASROC RANGES, HWAAP-010-R-01 - ASROC RANGES (TD), HWAAP-012-R-01 - PRE-1940 DETONATING PITS (TD), HWAAP-018-R-01 - MONO LAKE, HWAAP-021-R-01 - WALKER LAKE WATER TEST RANGE (TD))

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: 202206

Schedule for Next Five-Year Review: 2015

Estimated Completion Date of MMRP at Installation (including LTM phase): 206707

HAWTHORNE ARMY DEPOT MMRP Schedule

 = phase underway

SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
HWAAP-008-R-01	WALKER LAKE LAND TEST RANGE	RD						
		RA(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
HWAAP-009-R-01	ASROC RANGES	LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
HWAAP-010-R-01	ASROC RANGES (TD)	LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
HWAAP-012-R-01	PRE-1940 DETONATING PITS (TD)	LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
HWAAP-013-R-01	PRE-1940 DETONATING PITS	RD						
		RA(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
HWAAP-020-R-01	WHISKEY FLAT	RD						
		RA(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
HWAAP-022-R-01	OLD BOMB ROCKET FIRING RANGE-EAST	RD						
		RA(C)						
		LTM						

HAWTHORNE ARMY DEPOT
Army Defense Environmental Restoration Program
Compliance Restoration

CR Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 18/16

Installation Site Types with Future and/or Underway Phases

- 1 Disposal Pit/Dry Well
(CCHWAAP-I15)
- 1 Surface Impoundment/Lagoon
(CCHWAAP-B29)

Most Widespread Contaminants of Concern

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

Media of Concern

Soil

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

Site ID	Site Name	Action	Remedy	FY
CCHWAAP-B29	103-41 Unlined Ponds	FRA	NATURAL ATTENUATION	2013
CCHWAAP-B27B	103-8/10 OXIDATION DITCH	FRA	REMOVAL	2015
CCHWAAP-B27C	103-20 SURFACE IMPOUNDMENT	FRA	REMOVAL	2015
CCHWAAP-H02	Burn Pit @ pdo h02	FRA	REMOVAL	2015

Duration of CR

Date of CR Inception: 198705

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201811/204604

Date of CR completion including Long Term Management (LTM): 204506

CR Contamination Assessment

Contamination Assessment Overview

Environmental restoration activities include the IRP and MMRP. On Dec. 29, 2008, the Office of the Deputy Under Secretary of Defense for Installations and Environment [ODUSD (I&E)], issued an interim policy for Defense Environmental Restoration Program (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 Environmental Database - Compliance-related Cleanup (AEDB-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 MMRP sites.

The newly eligible non munitions response (MR) type sites are considered to be IRP sites; however, the newly eligible sites are being coded as Compliance Restoration (CR) in AEDB-R to distinguish them from the original IRP sites and IRP metrics.

Due to new state regulatory requirements, 15 sites were reopened as CR sites (previously IRP sites). These sites are all undergoing investigations to determine if further actions are warranted at any of them.

Cleanup Exit Strategy

The RI or DES phase is currently underway for all the CR sites with the exception of CCHWAAP-27B, B27C, and H02 are in CMI(C) and CCHWAAP-B29 is in CMI(O). Please see the site-specific cleanup exit strategies for more details.

CR Previous Studies

	Title	Author	Date
2012	Final Remedial Investigation/Feasibility Study, SWMU B27b	Bay West	FEB-2012
	Final Remedial Investigation/Feasibility Study, SWMU B27c	Bay West	FEB-2012
	Final Remedial Investigation/Feasibility Study, SWMU B27c	Bay West	APR-2012
	Final Remedial Decision Document, SWMU B27b	Bay West	MAY-2012
	Final Remedial Decision Document, SWMU B27c	Bay West	MAY-2012
	Final Remedial Decision Document, SWMU B27c	Bay West	MAY-2012
2013	Corrective Measures Implementation-Construction Work Plan SWMUs B27B, B27C, and H02	HGL	JUN-2013
2014	Final Decision Document For Closure, SWMU H02	HGL	DEC-2014
	Final Decision Document For Closure, SWMU B27b	HGL	DEC-2014
	Final Decision Document For Closure, SWMU B27c	HGL	DEC-2014
	Final Decision Document For Closure, SWMU B27c	HGL	DEC-2014

HAWTHORNE ARMY DEPOT
Compliance Restoration
Site Descriptions

Site ID: CCHWAAP-B29
Site Name: 103-41 Unlined Ponds
Alias: 103-41

STATUS

Regulatory Driver: RCRA
 Contaminants of Concern: Explosives, Nitrate/Nitrite
 Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	198705.....	198808
RFI/CMS.....	201007.....	201206
DES.....	201211.....	201302
CMI(C).....	201212.....	201305
CMI(O).....	201306.....	204506

RIP Date: 201306
RC Date: 204506

SITE DESCRIPTION

Site HWAAP-B29 is a series of inactive unlined surface impoundments connected by steel troughs covering an area of approximately 0.25 square miles north of Bldg 103-41. Nine impoundments at this site each measure approximately 25 feet by 100 feet by 3 feet, which were used for TNT wash water. Five larger ponds measure approximately 100 feet by 100 feet by 10 feet. These larger impoundments were used for ammonium picrate explosives wash water from demilitarization. Ammonium picrate, TNT-stained soils, and black burn residue in the impoundments are evident.

Groundwater sampling in 2000 at this site detected up to 29 ug/l of TNT and other organic, inorganic, and nitrogen-bearing compounds. Current groundwater monitoring shows low levels (below action levels) of explosives. Nitrate levels greatly exceed the drinking water standards of the state of NV.

The RI work in 1994 included groundwater sampling, surface soil and hand auger sampling, and CPT soundings. A pilot study successfully treated 300 cys of ammonium picrate-contaminated soil using windrow composting. During 2003, through a teaming effort with the NDEP, PRGs for ammonium picrate were raised from seven parts per million (ppm) to 120 ppm for an industrial site. This should expedite cleanup of this site.

Twelve wells were installed during FY11 to determine COCs in shallow water-bearing zones. MNA sampling is planned for 30 years in the CMI(O) phase. A contract for natural attenuation monitoring was awarded December 2012. The exit strategy was developed and approved by NDEP.

CLEANUP/EXIT STRATEGY

The MNA remedy is underway. When explosive constituents are below MCLs for three five-year reviews and LUC years in a row, the site will be closed with NFA.

Five-year reviews and LUC costs are tracked in site CCHWAAP-I15.

Site ID: CCHWAAP-I15
Site Name: 101-42 CATCHMENT PIT
Alias: 101-42

STATUS

Regulatory Driver: RCRA
 Contaminants of Concern: Explosives
 Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	199207.....	199403
RFI/CMS.....	201007.....	201310
DES.....	201311.....	201410
CMI(C).....	201403.....	201811
CMI(O).....	201510.....	204404
RIP Date:	201811	
RC Date:	204604	

SITE DESCRIPTION

Site SWMU I15 is in HWAD's central magazine area, on the southeast side of the 101 Production Area. Site SWMU I15 has two inactive unlined catchment pits. The upper catchment pit (eastern most) is approximately 175 feet west of Bldg 101-42 and the second, lower catchment pit (western most) is approximately 375 feet west of Bldg 101-42. The upper catchment pit is approximately 70 feet long by 15 feet wide and is up to 5 feet deep in the center. A 4-inch diameter transite pipe, which likely was used to discharge wastewater from Bldg 101-41, is at the head of the catchment pit nearest Bldg 101-42. The lower catchment pit is approximately 100 feet west of the upper catchment pit and measures 110 feet long by 60 feet wide and is up to 6 feet deep. A 4-inch transite pipe connects the upper catchment pit to the lower pit. TNT-stained soils were observed several feet up the sidewalls and on the bottom of this lower catchment pit with intensified staining 3 to 6 inches beneath the surface. Based on nearby wells, groundwater beneath SWMU I15 is expected to be at a depth of approximately 135 feet bgs.

The operating period of the building was from 1940 to the early-1970s. A study in 1994 included line locating to determine the pathway of the contaminated wastewater from the building to the pits. Data collection included 20 soil gas samples, 12 surface soil samples and one cone penetrometer sounding to assess the optimal depth to collect subsurface soil samples. No subsurface soil samples were collected. The surface soil samples were found to contain up to 1,500 mg/kg of explosives. The soil from this site was combined with the soil from B20 in a pilot study of windrow composting. The soil was remediated and the pits were backfilled with clean soil. The RA for soil was completed in 1998.

Based on new state regulatory requirements, an investigation was completed for this site, mainly for potential groundwater concerns and a remedy is required. Completion of the CMS and corrective action DD was completed in September 2013.

A contract will be awarded for the CMI and CMI(O) addressing groundwater clean-up.

CLEANUP/EXIT STRATEGY

The clean-up began in FY14. CMI(O) will continue until corrective action objectives are met.

In addition, installation-wide LUC and five-year review costs are included in CCHWAAP-I15.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
CCHWAAP-023	Old Bomb Fenced Disposal Area	201410	
CCHWAAP-A06B	OLD BOMB DISPOSAL AREA 2	201110	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-A06B.
CCHWAAP-A06C	OLD BOMB DISPOSAL AREA 3	201110	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-A06C.
CCHWAAP-A06D	OLD BOMB DISPOSAL AREA 4	201110	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-A06D.
CCHWAAP-A06E	OLD BOMB DISPOSAL AREA 5	201110	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-A06E.
CCHWAAP-B21	101-41/42 CATCHMENT PIT	201203	This site will now be handled under site CCHWAAP-115.
CCHWAAP-B27B	103-8/10 OXIDATION DITCH	201505	The NFA DD was signed in August 2014. LTM LUCs (development restrictions) are annotated in the Master Plan.
CCHWAAP-B27C	103-20 SURFACE IMPOUNDMENT	201505	The NFA DD was signed in August 2014. LTM LUCs (development restrictions) are annotated in the Master Plan.
CCHWAAP-C04	OLD BOMB POPPING FURNACE 1 & 2	201110	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-C04.
CCHWAAP-G01B	OLD BOMB OD/OB GROUND 2 & 3 D AREA	201110	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-G01B.
CCHWAAP-H02	Burn Pit @ pdo h02	201505	The NFA DD was signed in August 2014. LTM LUCs (development restrictions) are annotated in the Master Plan.
CCHWAAP-H03	ROAD & GROUNDS WASTE OB PIT	199904	Site was determined to be within the boundaries of J12 which was closed April 19, 2001. The NDEP was petitioned to include HO3 in the April 19, 2001 closure and they concurred in a letter dated November 21, 2001.
CCHWAAP-I22	OLD BOMB OPEN BURNING PIT	201110	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-I22.
CCHWAAP-I23	OLD BOMB/ROCKET METAL LANDFILL	201110	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-I23.
CCHWAAP-K07	OLD BOMB DDT BURIAL SITE	201110	This site is on an active range and not eligible for funding until the range is closed. It will now be handled under the CC Program in site CCHWP-K07.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
CCHWAAP-WADF	Western Area Demil Facility	201110	This site is an active facility and not eligible for ER,A funds.

CR Schedule

Date of CR Inception: 198705

Past Phase Completion Milestones

1988

RFA (CCHWAAP-A06B - OLD BOMB DISPOSAL AREA 2, CCHWAAP-A06C - OLD BOMB DISPOSAL AREA 3, CCHWAAP-A06D - OLD BOMB DISPOSAL AREA 4, CCHWAAP-A06E - OLD BOMB DISPOSAL AREA 5, CCHWAAP-B21 - 101-41/42 CATCHMENT PIT, CCHWAAP-B27B - 103-8/10 OXIDATION DITCH, CCHWAAP-B27C - 103-20 SURFACE IMPOUNDMENT, CCHWAAP-B29 - 103-41 Unlined Ponds, CCHWAAP-C04 - OLD BOMB POPPING FURNACE 1 & 2, CCHWAAP-G01B - OLD BOMB OD/OB GROUND 2 & 3 D AREA, CCHWAAP-H02 - Burn Pit @ pdo h02, CCHWAAP-H03 - ROAD & GROUNDS WASTE OB PIT, CCHWAAP-WADF - Western Area Demil Facility)
 CS (CCHWAAP-A06C - OLD BOMB DISPOSAL AREA 3)

1992

RFA (CCHWAAP-I22 - OLD BOMB OPEN BURNING PIT, CCHWAAP-I23 - OLD BOMB/ROCKET METAL LANDFILL)

1994

RFA (CCHWAAP-I15 - 101-42 CATCHMENT PIT)

1995

CS (CCHWAAP-I23 - OLD BOMB/ROCKET METAL LANDFILL)

1996

CS (CCHWAAP-I22 - OLD BOMB OPEN BURNING PIT)

1999

RFI/CMS (CCHWAAP-H03 - ROAD & GROUNDS WASTE OB PIT)

2000

RFA (CCHWAAP-K07 - OLD BOMB DDT BURIAL SITE)

2003

RFA (CCHWAAP-023 - Old Bomb Fenced Disposal Area)

2012

RFI/CMS (CCHWAAP-A06B - OLD BOMB DISPOSAL AREA 2, CCHWAAP-A06C - OLD BOMB DISPOSAL AREA 3, CCHWAAP-A06D - OLD BOMB DISPOSAL AREA 4, CCHWAAP-A06E - OLD BOMB DISPOSAL AREA 5, CCHWAAP-B21 - 101-41/42 CATCHMENT PIT, CCHWAAP-B27B - 103-8/10 OXIDATION DITCH, CCHWAAP-B27C - 103-20 SURFACE IMPOUNDMENT, CCHWAAP-B29 - 103-41 Unlined Ponds, CCHWAAP-C04 - OLD BOMB POPPING FURNACE 1 & 2, CCHWAAP-G01B - OLD BOMB OD/OB GROUND 2 & 3 D AREA, CCHWAAP-I22 - OLD BOMB OPEN BURNING PIT, CCHWAAP-I23 - OLD BOMB/ROCKET METAL LANDFILL, CCHWAAP-K07 - OLD BOMB DDT BURIAL SITE, CCHWAAP-WADF - Western Area Demil Facility)

2013

DES (CCHWAAP-B27B - 103-8/10 OXIDATION DITCH, CCHWAAP-B27C - 103-20 SURFACE IMPOUNDMENT, CCHWAAP-B29 - 103-41 Unlined Ponds, CCHWAAP-H02 - Burn Pit @ pdo h02)

RFI/CMS (CCHWAAP-H02 - Burn Pit @ pdo h02)

CMI(C) (CCHWAAP-B29 - 103-41 Unlined Ponds)

2014

RFI/CMS (CCHWAAP-I15 - 101-42 CATCHMENT PIT)

Projected Phase Completion Milestones

See attached schedule

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

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

CR Schedule

Final RA(C) Completion Date: 201811

Schedule for Next Five-Year Review: 2015

Estimated Completion Date of CR at Installation (including LTM phase): 204506

HAWTHORNE ARMY DEPOT CR Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
CCHWAAP-B29	103-41 Unlined Ponds	CMI(O)						
SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
CCHWAAP-I15	101-42 CATCHMENT PIT	CMI(C)						
		CMI(O)						

Community Involvement

Technical Review Committee (TRC): None

Community Involvement Plan (Date Published): 201305

Restoration Advisory Board (RAB): No

Reason Not Established: Installation is in the process of determining interest in establishing a RAB.

Additional Community Involvement Information

Community interest was last solicited in January 2015.

Administrative Record is located at

Hawthorne Army Depot - Environmental Branch
1 South Maine Avenue, Building 5
Hawthorne, NV 89415-5000

Information Repository is located at

Hawthorne Army Depot - Environmental Branch
1 South Maine Avenue, Building 5
Hawthorne, NV 89415-5000

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

TAPP Title: N/A

Potential TAPP: N/A

