FY2013

PICATINNY ARSENAL

Army Defense Environmental Restoration Program

Installation Action Plan

Printed 26 September 2013

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Statement of Purpose

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

In an effort to coordinate planning information between the restoration manager, the US Army Environmental Command (USAEC), Picatinny Arsenal (PTA), the executing agencies, the 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.

The IRP and MMRP follow the policies and the appropriate directives from the regulatory agencies and the appropriate guidance from the other stakeholders such as the Restoration Advisory Board.

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
ANL	Argonne National Laboratory
AOC	Area of Concern
AP	Armor Piercing
ARAR	Applicable or Relevant and Appropriate Requirement
ARDEC	Armament Research, Development and Engineering Center
AST	Aboveground Storage Tank
AWDF	Advanced Warhead Development Facility
BERA	Baseline Ecological Risk Assessment
bgs	below ground surface
Bldg	Building
BNA	Base Neutral Acid
BRAC	Base Realignment and Closure
BSB	Bear Swamp Brook
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
CA	Contamination Assessment
CC	Compliance-related Cleanup
CDC	Childcare Development Center
CEI	Compliance Evaluation Inspection
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CLIN	Contract Line Item Number
COC	Chemical of Concern
COPC	Contaminants of Potential Concern
COPEC	Contaminants of Potential Ecological Concern
CR	Compliance Restoration
CS	Confirmatory Sampling
CSM	Conceptual Site Model
CTC	Cost-to-Complete
cy	cubic yards
DBA	Drum Burial Area
DD	Decision Document
DDD	Dichlorodiphenyldichloroethane
DDE	Dicholordiphenylethane
DDT	Dichloro-diphenyl-trichloroethane
DEH	Directorate of Engineering and Housing
DERP	Defense Environmental Restoration Program
DMM	Discarded Military Munitions
DNT	Dinitrotoluene
DoD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
DSERTS	Defense Site Environmental Restoration Tracking System
DSMOA	Defense and State Memorandum of Agreement
DU	Depleted Uranium
EC	Engineering Controls

Acronyms

EE/CA	Engineering Evaluation/Cost Analysis
EEQ	Environmental Effects Quotient
EOD	Explosive Ordnance Disposal
ER	Emergency Removal
ER,A	Environmental Restoration, Army
ERA	Ecological Risk Assessment
ERF	Electromagnetic Research Facility
FS	Feasibility Study
ft	feet
FY	Fiscal Year
GCL	Guncotton Line
GIS	Geographic Information System
GPB	Green Pond Brook
HE	High Explosives
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
HRC	Hydrogen Releasing Compound
HRR	Historical Records Review
IAP	Installation Action Plan
IAW	In Accordance With
IC	Institutional Controls
ICM	Improved Conventional Munitions
IMCOM	Installation Management Command
IR	Installation Restoration
IRA	Interim Removal Action
IRP	Installation Restoration Program
K	thousand
kg	kilogram
LF	Landfill
LOC	Level of Concern
LTM	Long-Term Management
LUC	Land Use Control
LUCIP	Land Use Control Implementation Plan
MAMS	Multi-Award Military Munitions Services
MC	Munitions Constituents
MCL	Maximum Contaminant Level
MD	Munitions Debris
MEC	Munitions and Explosives of Concern
mg	milligram
mg/kg	milligram per kilogram
mm	millimeter
MMRP	Military Munitions Response Program
MNA	Monitored Natural Attenuation
MR	Munitions Response

Acronyms

MRS	Munitions Response Site
MRSPP	Munitions Response Site Prioritization Protocol
MTBE	Methyl Tert butyl Ether
N/A	Not Applicable
NARTS	Naval Air Rockets Test Station
NC	Nitrocellulose
NCP	National Oil and Hazardous Substance Pollution Contingency Plan
NFA	No Further Action
NG	Nitroglycerine
NJ	New Jersey
NJDEP	New Jersey Department of Environmental Protection
NJPDES	New Jersey Pollutant Discharge Elimination System
NPL	National Priorities List
NTCRA	Non-Time Critical Removal Action
ODUSD(I&E)	Office of Deputy Under Secretary of Defense for Installation and Environment
OE	Ordnance/Explosive
OSWER	Office of Solid Waste and Emergency Response
OU	Operable Unit
P&T	Pump-and-Treat
PA	Preliminary Assessment
PAH	Polycyclic Aromatic Hydrocarbon
PBC	Performance-Based Contract
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethylene
PHS&T	Packaging, Handling, Storage, and Transportation Center
PICA	AEDB-R Abbreviation for Picatinny Arsenal Sites
POL	Petroleum, Oil and Lubricants
PP	Proposed Plan
ppb	parts per billion
ppm	parts per million
PRB	Permeable Reactive Barrier
PRG	Preliminary Remediation Goal
PTA	Picatinny Arsenal
R&D	Research and Development
RA	Remedial Action
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operation)
RAB	Restoration Advisory Board
RACER	Remedial Action Cost Engineering and Requirements
RAR	Remedial Action Report
RC	Response Complete
RCI	Residential Community Initiative
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RD/RA	Remedial Design/Remedial Action

Acronyms

RDX	Cyclotrimethylenetrinitramine
RFA	RCRA Facility Assessment
RG	Remediation Goal
RI	Remedial Investigation
RI/FS	Remedial Investigation / Feasibility Study
RMD	Reaction Motors Division
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
RSA	Rodent Sperm Analysis
RTI	Radiation Technologies, Inc.
SC&RA	Site Characterization and Removal Assessment
SDZ	Surface Danger Zone
SI	Site Inspection
SLERA	Screening Level Ecological Risk Assessment
SVE	Soil Vapor Extraction
SVOC	Semi-Volatile Organic Compound
SWMU	Solid Waste Management Unit
TAL	Target Analyte List
TAPP	Technical Assistance for Public Participation
TBD	To Be Determined
TCE	Trichloroethylene
TCLP	Toxicity Characteristic Leaching Procedure
TCRA	Time-Critical Removal Action
TECUP	Toxic and Energetics Cleanup Program
TERC	Total Environmental Restoration Contract
Tetryl	2,4,6-Trinitrophenylmethylnitramine
TNT	Trinitrotoluene
TPH	Total Petroleum Hydrocarbons
TPP	Technical Project Planning
TRC	Technical Review Committee
ug/L	micrograms per Liter
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
USATHAMA	US Army Toxic and Hazardous Materials Agency
USEPA	US Environmental Protection Agency
USGS	US Geological Survey
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound
WWI	World War I
WWII	World War II

Site Alias List

AEDB-R Site ID to Alias List

AEDB-R #	Alias
CC-057	PICA 093
PBA@MR PICA	
PBC Picatinny	PBC
PICA-001	17/18
PICA-002	34
PICA-003-R-01	
PICA-004-R-01	
PICA-005-R-01	
PICA-006	16
PICA-006-R-01	
PICA-008	2, Group 3
PICA-008-R-01	
PICA-010-R-01	
PICA-011	122
PICA-012-R-01	
PICA-013	78
PICA-013-R-01	
PICA-014-R-01	
PICA-015	54
PICA-020	19
PICA-022	50
PICA-050	3, Group 3
PICA-057	PICA-057
PICA-058	MunitiPit
PICA-065	PICA-065
PICA-066	PICA-066
PICA-067	PICA-067
PICA-071	PICA-071
PICA-072	PICA-072
PICA-075	PICA-075
PICA-076	PICA-076
PICA-077	PICA-077
PICA-079	PICA-079
PICA-085	PICA-085
PICA-091	PICA-091
PICA-093	PICA-093
PICA-096	PICA-096
PICA-097	PICA-097
PICA-102	PICA-102
PICA-107	PICA-107
PICA-108	PICA-108
PICA-111	PICA-111
PICA-122	PICA-122

Site Alias List

PICA-131	PICA-131
PICA-134	PICA-134
PICA-135	PICA-135
PICA-136	PICA-136
PICA-143	PICA-143
PICA-145	PICA-145
PICA-146	PICA-146
PICA-149	PICA-149
PICA-155	PICA-155
PICA-162	PICA-162
PICA-163	PICA-163
PICA-164	PICA-164
PICA-171	PICA-171
PICA-175	PICA-175
PICA-184	PICA-184
PICA-192	PICA-192
PICA-193	PICA-193
PICA-195	PICA-195
PICA-199	PICA-199
PICA-200	PICA-200
PICA-204	PICA-204
PICA-205	PICA-205
PICA-206	PICA-206
PICA-209	PICA-209

Installation Information

Installation Locale

Installation Size (Acreage): 6491
City: Dover
County: Morris
State: New Jersey (NJ)
Other Locale Information

The PTA is a government-operated munitions research and development (R&D) facility located in Morris County, New Jersey (NJ), approximately 40 miles west of New York City and four miles northeast of Dover, NJ. The arsenal sits in the Highlands of NJ. Because it is a federal facility it is exempt from the Highlands regulation.

Installation Mission

The PTA was established in 1880 by the US War Department as a storage and powder depot. Later it was expanded to assemble powder charges for cannons and to fill projectiles with maximite (a propellant). During World War I (WWI), PTA produced all sizes of projectiles. In the years following WWI, PTA began projectile melt-loading operations and began to manufacture pyrotechnic signals and flares on a production basis. During World War II (WWII), PTA produced artillery ammunition, bombs, high explosives (HEs), pyrotechnics, and other ordnance. After WWII, PTA's primary role became the research and engineering of new ordnance; however, during the Korean and Vietnam conflicts, PTA resumed the production and development of explosives, ammunition and mine systems.

In recent years, PTA's mission has shifted to conducting and managing research development, life cycle engineering, and support of other military weapons and weapon systems. The facility has responsibility for the R&D of armament items. The PTA has also entered into an enhanced usage leasing program for certain acreage at the southern part of the arsenal as well as the leasing of buildings to third parties in the 350 area of Picatinny. Congress has agreed with the Department of Defense (DoD) through the Base Realignment and Closure (BRAC) process that Picatinny not be closed, but remain open and take in more missions. Seven other DoD sites are now being realigned at Picatinny including parts of Adelphi Laboratory Center and laboratories associated with the Naval Surface Warfare Center Division Crane.

Lead Organization

IMCOM

Lead Executing Agencies for Installation

USAEC for the performance-based contract (PBC) with ARCADIS Inc. USACE, Baltimore District, is now the contracting officer representative for the ARCADIS contract.
PTA with USACE, Baltimore District, for the remedial investigation (RI) and unexploded ordnance (UXO)-contract construction support under the Military Munitions Response Program (MMRP) sites
PTA with USACE, Baltimore District, on other non-PBC sites with ARCADIS.

Regulator Participation

Federal	US Environmental Protection Agency (USEPA) Region II, Federal Facilities Section US Fish Wildlife Service for consultation aspects for endangered species
State	New Jersey Department of Environmental Protection (NJDEP)

National Priorities List (NPL) Status

A score of 43.1 was recorded on 01-FEB-90.

Date for RA(C) Completion: 201510

Date for NPL Deletion: TBD

Installation Information

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

RAB established 199512

Installation Program Summaries

IRP

Primary Contaminants of Concern: Dioxins/Dibenzofurans, Explosives, Metals, Munitions and explosives of concern (MEC), Perchlorate, Pesticides, Petroleum, Oil and Lubricants (POL), Polychlorinated Biphenyls (PCB), Polycyclic Aromatic Hydrocarbons (PAH), Radionuclides, Semi-volatiles (SVOC), Volatiles (VOC)

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

MMRP

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

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

CR

Primary Contaminants of Concern: Metals, Polycyclic Aromatic Hydrocarbons (PAH)

Affected Media of Concern: Soil

5-Year / Periodic Review Summary

5-Year / Periodic Review Summary

Status	Start Date	End Date	End FY
Complete	201011	201109	2011
Complete	200602	200610	2007
Planned	201511	201609	2016

Last Completed 5-Year / Periodic Review Details

Associated ROD/DD Name	Sites
Burning Ground Cap (Matcon)	PICA-002
EE/CA for removal action	PICA-011
LUC for Soils at Sites 19, 28, 44, etc	PICA-020, PICA-036, PICA-070, PICA-083, PICA-088, PICA-092, PICA-095, PICA-099, PICA-100, PICA-105, PICA-110, PICA-112, PICA-118
Post Farm Landfill	PICA-065
ROD for Green Pond/Bear Swamp Brooks	PICA-193
ROD for PICA 066- Site 20/24	PICA-066
ROD for PICA 076- Area D Groundwater	PICA-076
Removal Action D.D. of PCB impacted soil	PICA-011

Results EPA approved report as protective but provided additional comments.

Actions Army addressing EPA comments.

Plans Army will prepare & public notice the revised final document.

Recommendations and Implementation Plans:
TBD

Land Use Control (LUC) Summary

LUC Title: LUC at PICA-065

Site(s): PICA-065

ROD/DD Title: Post Farm Landfill

Location of LUC

Post Farm

Land Use Restriction: Landfill restriction - Prohibit activities that would impact the LF cap (or cover system) and drainage system, Landfill restriction - Prohibit excavation on LF cap or cover system, Landfill restriction - Restrict access to the site, Media specific restriction - Prohibit, or otherwise manage excavation below a specified depth, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Media specific restriction - restrict withdrawal or use of groundwater for agricultural/irrigation purposes, Media specific restriction - restrict withdrawal or use of groundwater w/out treatment, Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

Types of Engineering Controls: Fences, Signs

Types of Institutional Controls: Dig Permits, Education programs, Notations in Master Plan, Notices (in the grantor/grantee index, newspapers, etc.), Restrictions on land use

Date in Place: 200709

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200706

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers, Other

Contaminants: METALS, PAH, PCBs, VOC

Additional Information

This groundwater is part of the sitewide Classified Exemption Area per NJDEP Regulations

LUC Title: LUC at PICA-067

Site(s): PICA-067

ROD/DD Title: ROD for Sanitary Landfill & Dredge Pile

Location of LUC

Sanitary Landfill and Dredge Pile

Land Use Restriction: Media specific restriction - Prohibit, or otherwise manage excavation, Media specific restriction - Prohibit, or otherwise manage excavation below a specified depth, Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

Types of Engineering Controls: Signs

Types of Institutional Controls: Dig Permits, Education programs, Notations in Master Plan, Notices (in the grantor/grantee index, newspapers, etc.), Restrictions on land use

Date in Place: 200809

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200809

LUC Enforcement: Annual Inspections, 5 Year Reviews, Other

Land Use Control (LUC) Summary

Contaminants: METALS, PAH, PCBs

Additional Information

N/A

LUC Title: LUC at PICA-077

Site(s): PICA-077

ROD/DD Title: ROD for Area E Groundwater

Location of LUC

Area E

Land Use Restriction: Media specific restriction - Prohibit groundwater extraction that interferes with Remedial Action system, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Media specific restriction - restrict withdrawal or use of groundwater for agricultural/irrigation purposes, Media specific restriction - restrict withdrawal or use of groundwater w/out treatment

Types of Engineering Controls: None

Types of Institutional Controls: Education programs, Notations in Master Plan, Notices (in the grantor/grantee index, newspapers, etc.), Restrictions on land use

Date in Place: 200709

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200709

LUC Enforcement: Annual Inspections, 5 Year Reviews, Other

Contaminants: VOC

Additional Information

This groundwater is part of the sitewide Classified Exemption Area per NJDEP Regulations

LUC Title: LUC at PICA-193

Site(s): PICA-193

ROD/DD Title: ROD for Green Pond/Bear Swamp Brooks

Location of LUC

Green Pond & Bear Swamp Brooks

Land Use Restriction: Media specific restriction - Prohibit fishing except for recreational purposes (catch and release), Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

Types of Engineering Controls: Signs

Types of Institutional Controls: Dig Permits, Education programs, Notations in Master Plan, Restrictions on land use

Date in Place: 200709

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200709

Land Use Control (LUC) Summary

LUC Enforcement: Annual Inspections, 5 Year Reviews, Other

Contaminants: METALS, PAH, PCBs, PESTICIDES

Additional Information

N/A

LUC Title: LUC for Area B Groundwate

Site(s): PICA-205

ROD/DD Title: ROD for Area B Groundwater

Location of LUC

Southern Part of Picatinny at Site 20/24

Land Use Restriction: Landfill restriction - Prohibit activities that would impact the LF cap (or cover system) and drainage system, Landfill restriction - Prohibit excavation on LF cap or cover system, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Media specific restriction - restrict withdrawal or use of groundwater w/out treatment, Restrict land use - Mitigation area(s) protection, Restrict land use - No residential use

Types of Engineering Controls: Guards, Markers, Signs

Types of Institutional Controls: Construction Permit, Dig Permits, Notations in Master Plan, Restrictions on land use

Date in Place: 200905

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: EPA

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: VOC

Additional Information

This groundwater is part of the sitewide Classified Exemption Area per NJDEP Regulations

LUC Title: LUC for PICA 079/Group 1

Site(s): PICA-079

ROD/DD Title: ROD for Group 1 Sites

Location of LUC

Near and around building in 800 including 809 and 810.

Land Use Restriction: Media specific restriction - Prohibit, or otherwise manage excavation, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

Types of Engineering Controls: Markers, Signs

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

Date in Place: 201009

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: 200709

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: INORGANICS, NITROAROMATICS, PCBs

Additional Information

N/A

LUC Title: LUC for PICA 72/Site 31

Site(s): PICA-072

ROD/DD Title: ROD for Site 31/101 (PICA 072) Soil

Location of LUC

Area is defined in the remedial design and contains two sites (RI Site 31 and 101)

Land Use Restriction: Landfill restriction - Prohibit excavation on LF cap or cover system, Landfill restriction - Prohibit installation of utility system lines through the site, Media specific restriction - Prohibit, or otherwise manage excavation, Restrict land use - Mitigation area(s) protection, Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

Types of Engineering Controls: Fences, Markers, Signs

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

Date in Place: 200906

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: EPA

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: INORGANICS, PCBs, Unexploded Ordnance(UXO)

Additional Information

N/A

LUC Title: LUC for PICA-066, 20/24

Site(s): PICA-066

ROD/DD Title: ROD for PICA 066- Site 20/24

Location of LUC

Site 20/24, Area B

Land Use Restriction: Landfill restriction - Prohibit activities that would impact the LF cap (or cover system) and drainage system, Landfill restriction - Prohibit excavation on LF cap or cover system, Landfill restriction - Restrict access to the site, Media specific restriction - Prohibit, or otherwise manage excavation below a specified depth, Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

Types of Engineering Controls: Signs

Types of Institutional Controls: Dig Permits, Education programs, Notations in Master Plan, Notices (in the grantor/grantee index, newspapers, etc.), Restrictions on land use

Date in Place: 200309

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: 200309

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: METALS, PCBs, PESTICIDES

Additional Information

N/A

LUC Title: LUC for PICA-076

Site(s): PICA-076

ROD/DD Title: ROD for PICA 076- Area D Groundwater

Location of LUC

Area D, Downtown Picatinny Groundwater

Land Use Restriction: Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Media specific restriction - restrict withdrawal or use of groundwater for agricultural/irrigation purposes, Media specific restriction - restrict withdrawal or use of groundwater w/out treatment

Types of Engineering Controls: None

Types of Institutional Controls: Dig Permits, Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on land use

Date in Place: 200708

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200708

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: VOC

Additional Information

This groundwater is part of the sitewide Classified Exemption Area per NJDEP Regulations

LUC Title: LUC for PICA-093

Site(s): PICA-093

ROD/DD Title: ROD for Waste Burial Area, PICA-093

Location of LUC

Waste Burial Area

Land Use Restriction: Media specific restriction - Prohibit, or otherwise manage excavation, Media specific restriction - Prohibit, or otherwise manage excavation below a specified depth

Types of Engineering Controls: Signs

Types of Institutional Controls: Education programs, Notations in Master Plan, Notices (in the grantor/grantee index, newspapers, etc.), Restrictions on land use

Date in Place: 200709

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: 200709

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: DIOXINS/DIBENZOFURANS, METALS, PCBs

Additional Information

N/A

LUC Title: LUCs for AREA C

Site(s): PICA-206

ROD/DD Title: Area C GW ROD

Location of LUC

Area C (Southern PIcatinny)

Land Use Restriction: Media specific restriction - Prohibit groundwater extraction that interferes with Remedial Action system, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Restrict land use - No residential use

Types of Engineering Controls: Signs

Types of Institutional Controls: Dig Permits, Education programs, Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on land use

Date in Place: 200910

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: EPA

Record of LUC: Master Plan or Equivalent

Documentation Date: 200910

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: INORGANICS, ORGANICS

Additional Information

N/A

LUC Title: LUCs related to Group 3

Site(s): PICA-008

ROD/DD Title: ROD for Group 3 or PICA 08

Location of LUC

Group 3 is located in the 3500 area and G-2 Pond area. Formerly Area J of RI Concept Plan

Land Use Restriction: Media specific restriction - Prohibit, or otherwise manage excavation, Media specific restriction - restrict drinking water well installation, Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

Types of Engineering Controls: Markers, Signs

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

Date in Place: 201010

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: 200709

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: VOC

Additional Information

N/A

LUC Title: NTCRA LUCS for PICA MRS

Site(s): PICA-003-R-01, PICA-005-R-01, PICA-006-R-01, PICA-008-R-01, PICA-010-R-01, PICA-013-R-01

ROD/DD Title: Action Memorandum Land Use

Location of LUC

Six MRS on Picatinny

Land Use Restriction: Restrict land use - No daycare/hospital/school use

Types of Engineering Controls: Fences, Signs

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

Date in Place: 201304

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: Unexploded Ordnance(UXO)

Additional Information

N/A

Cleanup Program Summary

Installation Historic Activity

The PTA was established in 1880 by the US War Department as a storage and powder depot. Later it was expanded to assemble powder charges for cannons and to fill projectiles with maximite (a propellant). During WWI, PTA produced all sizes of projectiles. In the years following WWI, PTA began projectile melt-loading operations and began to manufacture pyrotechnic signals and flares on a production basis. During WWII, PTA produced artillery ammunition, bombs, HEs, pyrotechnics, and other ordnance. After WWII, PTA's primary role became the research and engineering of new ordnance; however, during the Korean and Vietnam conflicts, PTA resumed the production and development of explosives, ammunition, and mine systems.

In recent years, PTA's mission has shifted to conducting and managing research development, life cycle engineering, and support of other military weapons and weapon systems. The facility has responsibility for the R&D of armament items.

Installation Program Cleanup Progress

IRP

Prior Year Progress: A proposed plant (PP) and a record of decision (ROD) was approved for PICA-204. The 25 site group PP was revised from land use control (LUCs) to no further action (NFA) and resubmitted to USEPA.

Future Plan of Action: RAs for five sites will be implemented. Numerous other sites will go through the RI/feasibility study (FS), PP/ROD, and remedial decision (RD)/RA phases.

MMRP

Prior Year Progress: The MMRP RI work plan was approved and fieldwork implemented. The non-time critical RA (NTCRA) for implementation of LUCs was signed and the LUC work plan was developed and implemented.

Munitions and explosives of concern (MEC) construction support under the interim remedial action (IRA) phase is underway. The Tilcon 3 IRA report was approved.

Future Plan of Action: The MMRP RI report will be completed and the FS awarded for all MRSs.

Construction support for munitions will be continued.

CR

Prior Year Progress: The CC-057 RI report was completed and approved.

Future Plan of Action: An FS and a PP for CC-057 will be completed.

PICATINNY ARSENAL

Army Defense Environmental Restoration Program
Installation Restoration Program

IRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 176/120

Installation Site Types with Future and/or Underway Phases

1 Above Ground Storage Tank
(PICA-022)

2 Building Demolition/Debris Removal
(PICA-149, PICA-155)

1 Burn Area
(PICA-002)

13 Contaminated Buildings
(PICA-096, PICA-111, PICA-122, PICA-131, PICA-134, PICA-135, PICA-143, PICA-145, PICA-146, PICA-184, PICA-199, PICA-200, PICA-209)

1 Contaminated Fill
(PICA-192)

8 Contaminated Ground Water
(PBC Picatinny, PICA-008, PICA-013, PICA-058, PICA-079, PICA-204, PICA-205, PICA-206)

3 Contaminated Sediments
(PICA-015, PICA-057, PICA-193)

1 Disposal Pit/Dry Well
(PICA-001)

2 Explosive Ordnance Disposal Area
(PICA-162, PICA-164)

4 Landfill
(PICA-065, PICA-066, PICA-067, PICA-093)

1 Oil Water Separator
(PICA-097)

5 Spill Site Area
(PICA-020, PICA-050, PICA-091, PICA-108, PICA-136)

8 Storage Area
(PICA-011, PICA-071, PICA-072, PICA-075, PICA-085, PICA-171, PICA-175, PICA-195)

3 Surface Disposal Area
(PICA-102, PICA-107, PICA-163)

1 Waste Lines
(PICA-006)

2 Waste Treatment Plant
(PICA-076, PICA-077)

Most Widespread Contaminants of Concern

Dioxins/Dibenzofurans, Explosives, Metals, Munitions and explosives of concern (MEC), Perchlorate, Pesticides, Petroleum, Oil and Lubricants (POL), Polychlorinated Biphenyls (PCB), Polycyclic Aromatic Hydrocarbons (PAH), Radionuclides, Semi-volatiles (SVOC), Volatiles (VOC)

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
PICA-089	PETROLEUM LEAK AREA(BLDG 305)SITE 52	IRA	WASTE REMOVAL - SOILS	1986
PICA-073	BLDG 553 STORAGE TANKS(SITE 32)	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1991
PICA-074	BLDG 527A STORAGE TANKS (SITE 33)	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1991
PICA-083	Golf Course Maintenance(BLDG 39)SITE 44	IRA	WASTE REMOVAL - SOILS	1991

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

Site ID	Site Name	Action	Remedy	FY
PICA-123	FORMER HAZ WASTE STOR/FUSE ASS(BLDG 210)	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1991
PICA-136	HIGH PRESSURE BOILER (BLDG 3013) SITE 79	IRA	WASTE REMOVAL - SOILS	1992
PICA-065	POST FARM LANDFILL (SITE 23)	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1993
PICA-072	FORMER GAS STATION/ DRMO(SITE 31)	IRA	FENCE OR OTHER SITE ACCESS CONTROL MEASURES	1993
PICA-011	BLDG 60 SATELITE WSTE ACCOM AREA(SITE122	IRA	REMOVAL	2000
PICA-050	FORMER REACT MTRS/RCKT FUEL TST A 1500	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	2002
PICA-066	SANITARY LANDFILL(NEAR SITE 20)SITE 24	FRA	CAPPING	2003
PICA-066	SANITARY LANDFILL(NEAR SITE 20)SITE 24	FRA	INSTITUTIONAL CONTROLS	2003
PICA-001	INACTIVE TETRYL WASTE PITS (SITES 17/18)	IRA	REMOVAL	2005
PICA-111	FORMER BLDG 435,PROPELLANT SOLV MIXING	IRA	WASTE REMOVAL - SOILS	2005
PICA-193	GREEN POND AND BEAR SWAMP BROOK SITE 190	IRA	WASTE REMOVAL - SOILS	2005
PICA-209	BUILDING 167, LOCOMOTIVE AREA, BLDG. 430	IRA	WASTE REMOVAL - SOILS	2005
PICA-076	FORM METL PLATG WSTWTR FAC/LAGOONS B-24	FRA	INSTITUTIONAL CONTROLS	2006
PICA-076	FORM METL PLATG WSTWTR FAC/LAGOONS B-24	IRA	GROUND WATER TREATMENT	2006
PICA-065	POST FARM LANDFILL (SITE 23)	FRA	INSTITUTIONAL CONTROLS	2007
PICA-067	SANITIARY LANDFILL(NEAR SITE 26)SITE 25	FRA	CAPPING	2007
PICA-076	FORM METL PLATG WSTWTR FAC/LAGOONS B-24	FRA	SLURRY WALLS/UNDERGROUND BARRIERS	2007
PICA-093	WASTE BURIAL AREA NEAR SITES 19&34(180)	FRA	FENCE OR OTHER SITE ACCESS CONTROL MEASURES	2007
PICA-193	GREEN POND AND BEAR SWAMP BROOK SITE 190	FRA	REMOVAL	2007
PICA-102	FORMER WASTE DUMP/CHEMICAL LAB	FRA	REMOVAL	2008
PICA-205	AREA B GROUNDWATER	FRA	NATURAL ATTENUATION	2008
PICA-205	AREA B GROUNDWATER	FRA	BIOREMEDIATION - IN SITU GROUNDWATER	2008
PBC Picatinny	PBC	FRA	OTHER	2009
PICA-072	FORMER GAS STATION/ DRMO(SITE 31)	FRA	REMOVAL	2009
PICA-206	AREA C GROUNDWATER	FRA	INSTITUTIONAL CONTROLS	2009

IRP Summary

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

Site ID	Site Name	Action	Remedy	FY
PICA-072	FORMER GAS STATION/ DRMO(SITE 31)	FRA	CAPPING	2010
PICA-079	ORDNANCE/EXPLOSIVE BLDGS 800 AREA	FRA	NATURAL ATTENUATION	2010
PICA-079	ORDNANCE/EXPLOSIVE BLDGS 800 AREA	FRA	REMOVAL	2010
PICA-013	OPTS PROTO PROC FAC SITE BLDG 91(SITE78)	IRA	NATURAL ATTENUATION	2011
PICA-002	LOWER BURNING GROUND (SITE 34)	FRA	CAPPING	2013

Duration of IRP

Date of IRP Inception: 197607

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201511/204209

Date of IRP completion including Long Term Management (LTM): 204510

IRP Contamination Assessment

Contamination Assessment Overview

In July 1976, the USAEC, formerly the US Army Toxic and Hazardous Materials Agency (USATHAMA), Environmental Branch, conducted a record search of PTA. This report recommended that groundwater quality data should be collected by PTA at the locations where the groundwater leaves the arsenal.

In May 1979, the US Army Environmental Hygiene Agency (USAEHA) performed a geohydrologic study of PTA and found no gross contamination of existing drinking water wells. The study identified several AOCs and recommended that an additional 19 wells be installed to monitor sites of concern and the arsenal boundary.

In July 1980, NJ performed a NJ pollutant discharge elimination system (NJPDES) compliance inspection and found organic solvents being discharged from Buildings 24 and 95 (RI concept no. 21/PICA-120, RI concept no. 37/PICA-76, and RI concept no. 22/PICA-10); Building 24 contained a metal plating operation and Building 95 contained a circuit board etching operation.

In October 1980, the USAEC performed a reassessment of PTA and found significant contamination associated with Resource Conservation and Recovery Act (RCRA) site Building 24 and RCRA site Building 95. The US Army recommended that a RCRA groundwater assessment be completed. During the period from January 1981 through August 1983, USAEHA conducted a detailed groundwater assessment. The investigation demonstrated that there were several monitoring wells in the vicinity of Buildings 24 and 95 which were highly contaminated with organic solvents, primarily trichloroethylene (TCE). The USAEHA prepared a groundwater quality assessment report documenting the investigation in February 1984. The PTA employed the US Geological Survey (USGS) to perform the additional groundwater investigation.

In February 1989, the NJDEP completed a RCRA facility assessment (RFA). A total of 55 solid waste management units (SWMU) were identified. Many of these sites were previously identified in other studies.

In 1986 and 1987, during a RCRA compliance evaluation inspection (CEI) by the USEPA, at least 30 additional sites were found where waste was handled and/or stored. Many of these sites were previously identified. In June 1988, PTA began fieldwork on a confirmation study (CS). This study included groundwater and/or soil sampling at 35 known or potentially contaminated areas. This study was completed and is considered to be a site inspection (SI) by the regulators.

In April 1988, Argonne National Laboratory (ANL) was tasked to prepare a comprehensive RI concept plan to identify, prioritize and develop a plan of action for each site for the accomplishment of an overall RI. The RI concept plan addressed over 157 sites. The final version of the RI concept plan was published in March 1991 and approved by the USEPA in October 1991.

In 1990, the investigative approach suggested by the RI concept plan, initiated by the Army and approved by the regulatory agencies, was to break the defined RI concept plan sites into areas (Areas A - P). These 16 RI concept-defined areas were prioritized and divided into three phases of investigation called Phase I, II, and III; however, the investigation of the Burning Ground (PICA 002/RI-Concept site 34 or Area A) was initiated before the approval and normalization of this approach.

This original approach was modified by the implementation of the DoD relative risk funding policy. The goal of the relative risk policy is to attempt to address the worst sites first from a national or DoD perspective. According to the guidance, the investigations and RAs for sites with the highest relative risk will be funded first with few exceptions.

To determine the relative risk for each site, specific steps are required by the guidance. (Each step is applicable, when data exists, for the four different environmental media.) The media include groundwater, soil, sediment, and surface water. The process consists of the following steps:

1. Compare individual chemical results on a site basis to contaminant hazard factors which are supplied by the guidance;
2. Determine whether a migration pathway factor (significant, moderate or minimal) exists based on DoD guidance; and
3. Determine whether a migration pathway factor (evident, potential or confined) exists based on DoD guidance.

The resultant calculation is then designated high ("1"), medium ("2") or low ("3") relative risk. The site will take the highest relative risk score of any one medium. The relative risk score for each site also includes a factor as to whether a regulatory agreement with schedules or a regulatory agreement exists ("A" designation) or does not exist (a "B" designation). All sites at PTA are under such a regulatory agreement with schedules; thus all ratings are designated as "A." Relative risk is not an absolute expression of risk and is not a substitute for a baseline health risk assessment.

The Army Environmental Database - Restoration (AEDB-R), formerly the Defense Site Environmental Restoration Tracking

Contamination Assessment Overview

System (DSERTS), presently includes 175 sites for PTA. The numbers are not consecutive and go from PICA-1 through PICA-210. These sites include the original sites listed in the RI concept plan, plus additional sites identified after the RI concept plan was approved.

One hundred and fifty-four of the sites were originally identified by the RI concept plan. Another 21 sites were subsequently added. Those additional 21 sites were identified with AEDB-R numbers higher than PICA 187. The additional 21 sites include 14 sites relating to "Other Buildings" for RI Concept Areas B-P. These sites were identified because of the potential that the contractor, ANL, who developed the RI concept plan, did not assess or review all the available information on all the buildings at the arsenal. However, after an evaluation, some of these "Other Buildings" sites were renamed as area-wide groundwater or specific sites. Additional new AEDB-R sites also included specific locations such as Bear Swamp and Green Pond Brook (GPB) and the firehouse. The 175 sites are regularly updated in AEDB-R.

At the August 2000, April 2001 and 2002 IAP meetings, it was agreed that sites be considered response complete (RC) based on the following:
- Active range, not Environmental Restoration, Army (ER,A) eligible previously identified in AEDB-R.
- Active range, not ER,A eligible, not previously identified in AEDB-R.
- Previously identified as RC based on fact assumed to be NFA now identified in institutional control (IC) PP.
- Combined with other sites such as PICA-120 now tied to PICA-076 and agreed to at meeting.
- PICA 78 will be considered RC and any action will be incorporated into the other two sites in the Building 31/Building 33 grouping. The RC is being done for administrative purposes.
- SI identified no AOCs as discussed in the 1998 IAP and beyond.
- PICA 63 (site 20) was combined with PICA 66 (site 24) for administrative purposes.

In 2003, as a consequence of the agreements made at a series of meetings that occurred, PTA RI concept sites were consolidated into PICA sites. The consolidation was agreed to by the regulators and USAEC AEDB-R program managers. The consolidation was based on geographic attributes, similar schedules, and similar remedies. A major portion of the sites are expected to have only ICs as a remedy.

At the May 2005 IAP meeting, an agreement was made to keep one site open - PICA 096 (site 117) Building 22, Precision Machine Shop for all sites in the 25 sites IC FS, PP and later ROD. Certain sites have been already consolidated and one site [PICA 20 (site 19)] was reopened to incorporate the costs associated with the 13 site IC ROD sites.

The issue involving the enforceability of LUCs that was noted in the October 2002 IAP was resolved in 2003. The issue was between the USEPA and the DoD. Picatinny and the USEPA Region II agreed to follow the Navy approach to the LUC issue. Any ROD will only mention and not detail specific LUCs. The details will be specified in the RD phase document.

Although the enforceability of LUCs was resolved in 2003, as noted above, the USEPA and the Army still wrestled with the terminology and text regarding acceptable risk and existing LUCs. As of June 2006, the issue was resolved, but had held up planned ROD and PPs for a number of months.

In 2010 the USEPA was determining the status of the promulgated NJ soil cleanup standards as applicable or relevant and appropriate requirements (ARARs) for technical and legal reasons. The delay of this determination delayed FS work at sites with soil contamination issues.

Since 2010, the USEPA and the Army have agreed to specific text for legal documents, in regard to groundwater cleanup, the role of ARARs, and similar subjects. This is generally known as the Mid-Valley Agreements.

The USEPA has determined in writing that the NJDEP soil cleanup criteria will be considered ARARs except for those which are based on inhalation. This determination was finalized in May 2010 but held up a number of LUCs, FSs, and PPs. Hence, soils were taken out of sites to move forward on the groundwater issues. This included PICA 13 and PICA 08.

In a letter dated Oct. 6, 2011, the USEPA later expressed that LUCs are not adequate to address ARAR exceedances of soils stating that "ICs alone are not sufficient to meet a numerical remediation standard. At a minimum, an appropriate engineering control (EC) is necessary, and would be in conjunction with an IC." The Army provided the table requested by the USEPA in a package dated Dec. 6, 2010 and further expressed the Army's uncompromised position in a letter dated March 10, 2010.

IRP Contamination Assessment

Contamination Assessment Overview

The March 10, 2010 letter stated the Army's position as follows:

"The baseline risk assessment provides the basis for taking RA at an NPL site and supports the development of RA objectives. Current land use is critical in determining whether there is a current risk associated with a superfund site and future land use is important in estimating potential future threats. The results of the risk assessment aid in determining the degree of remediation necessary to ensure long-term protection at NPL sites" [Office of Solid Waste and Emergency Response (OSWER0 directive No. 9355.7-04].

Under CERCLA, RAs address risks to the current and reasonably anticipated future use, not to unrealistic or hypothetical uses. Where the existing site conditions are protective of the current and reasonably anticipated future use, no RA or cleanup is required to alter site-specific conditions for protection of human health and the environment; however, ICs would be implemented to prevent the hypothetical residential use of the site. When risks and hazards at sites are within the acceptable range for the current and reasonably anticipated future use no ARAR analysis is triggered, and the promulgated NJ soil remediation standards, which would be potential chemical-specific ARARs in cases where the risk is unacceptable for the current and reasonable anticipated future use, would not be identified as ARAR. Since no soils are required to be actively remediated or cleaned up in order to be protective of industrial use, there are no chemical-specific standards to be identified as clean up criteria or ARAR.

The USEPA agreed with the Army position with a letter dated November 28th, 2012. In that letter EPA said that "specifically, PTA, in conjunction with existing LUCs, will monitor land use at PICA-001 sites and report the monitoring results to USEPA. This represents NFA. Consequently, compliance with ARARs will not be necessary."

The Army and USEPA are aware of the position of NJDEP that was expressed in letters relating to the 26 site PP for NFA specifically a March 7th letter that was provided at the public meeting.

Cleanup Exit Strategy

The time to complete the RI process, including the FS and the document review process, can be improved significantly in meeting our goals. The cleanup exit strategy includes the following array of tools and options:
- Use the PBC to speed the process from draft to final documentation and enhance the negotiating strength of the Army.
- Continue partnering to arrive at approved documentation for actions, mini workplans, use of emails rather than letters and use of the worldwide web as a platform for review.
- Combine sites into documents to reduce the total time lag natural with the process. This may take the shape of including all soil sites into one ROD or all sites with RA and those with ICs only into separate RODs.
- The Army team has determined that PPs do not require a legal review prior to being submitted to regulators.

IRP Previous Studies

	Title	Author	Date
1976			
	The History of Picatinny Arsenal 1880 - 1931, Vol. 1 War Plans Division, Plant Engineering Department, PTA March 31, 1931, Reissued		DEC-1976
1979			
	Geohydrologic Consultation No. 31-24-0191-79	US Army Environmental Hygiene Agency	JUN-1979
1981			
	Phase 1, Groundwater Quality Assessment No. 38-260153-82, Picatinny Arsenal, Dover NJ	US Army Environmental Hygiene Agency	JUL-1981
1982			
	Darcon Historic Building Inventory HABS/HABER Report (condensed version),	Picatinny Arsenal	AUG-1982
	Technical Background and Terminology, HAER No. NJ-36	Picatinny Arsenal	SEP-1982
	Summary of Building History Area H, Area I	Picatinny Arsenal	SEP-1982
	Picatinny Arsenal Preliminary Field Investigation Findings/Recommendations Area H	Picatinny Arsenal	SEP-1982
	HABRS/HAER Inventory Report (full report) DARCOM - Historic Building Inventory HABS/HAER Report	Picatinny Arsenal	SEP-1982
1983			
	Reassessment of Picatinny Arsenal	Chemical Systems Laboratory	MAY-1983
1984			
	Final Report, Groundwater Quality Assessment No. 38-26-0153-84, ARRACDEN Picatinny Arsenal Support Activity, Dover, NJ	US Army Environmental Agency	JAN-1984
1985			
	Historic Properties Report, Picatinny Arsenal, Dover, New Jersey	Picatinny Arsenal	MAR-1985
1986			
	Ground Water Quality Data for Picatinny Arsenal, NJ, 1958-85	US Geological Survey	JAN-1986
	Description and Results of Test Drilling Program at Picatinny Arsenal	US Geological Survey	APR-1986
	Determination of Geohydrologic Framework and Extent of Ground-Water Contamination Using Surface Geophysical Techniques at Picatinny Arsenal, NJ; Water Resources Investigation Report 86-4051	US Geological Survey	APR-1986
1988			
	Resource Conservation and Recovery Act (RCRA Buildings to be Exempted and Closed, Part I, II and III, plus Appendices	Picatinny Arsenal	AUG-1988
1989			
	Installation Assessment Picatinny Arsenal, Morris County, NJ Volume 1 text, Volume 2 maps	USEPA	MAR-1989
	Cost Estimate Report for Interim Groundwater Remediation at Picatinny Arsenal, Building 24 Study Area, Dover, New Jersey	ERC Environmental and Energy Services, Co., Inc.	MAR-1989
	Develop Documentation/Prepare Remedial Action Concept Plan for Building 24, Contamination Plume at Picatinny Arsenal	Engineering Technologies Associates, Inc.	APR-1989

IRP Previous Studies

	Title	Author	Date
1989			
	Engineering Feasibility Study for Interim Groundwater Remediation at Picatinny Arsenal Building 24 Study Area Dover, New Jersey	ERC Environmental and Energy Services, Co., Inc.	APR-1989
	Record of Decision for Interim Groundwater Remediation Plan, Picatinny Arsenal, New Jersey	ERC Environmental and Energy Services, Co., Inc.	MAY-1989
	Record of Decision and Environmental Assessment Report for Interim Groundwater Remediation at Picatinny Arsenal, Building 24 Study Area Dover, NJ	ERC, Environmental and Energy Services Co., Inc.	MAY-1989
	Record of Decision and Environmental Assessment Report for Interim Groundwater Remediation at Picatinny Arsenal, Building 24 Study Area Dover, NJ	ERC, Environmental and Energy Services Co., Inc.	MAY-1989
	Site Investigation of Picatinny Arsenal, Volumes 1 and 2	Dames & Moore	JUL-1989
	Final Report, Well Drilling/Installation and Sampling Analysis, Southwest Boundary Well Clusters, Picatinny Arsenal, NJ	Dames and Moore	JUL-1989
	USATHAMA Public Involvement and Response Plan for Picatinny Arsenal,	Environmental Science and Engineering	SEP-1989
	Data Review, Post Farm landfill, Site 23, Picatinny Arsenal, New Jersey	US Army Toxic and Hazardous Materials Agency (USATHAMA)	SEP-1989
1990			
	Contamination of Shallow Groundwater in the Area of Building 95, Picatinny Arsenal, NJ, 1985-90, Water Resources Investigation Report No.: 92-4122 U.S. Geological Survey data for study was completed i	USACE	JAN-1990
	Assessment of Contamination of Groundwater and Surface Water in the Area of Building 24, Picatinny Arsenal, NJ 1986-87, Water-Resources Investigations Report 90-4057	US Geological Survey	JAN-1990
	Final, Verification of Design Parameters, Picatinny Arsenal, Interim Groundwater Treatment System	Metcalf & Eddy, Inc.	JAN-1990
	Final, Waste Management Plan for Interim Remedial Design, Picatinny Arsenal, New Jersey	Metcalf & Eddy, Inc.	JAN-1990
	Site Specific Quality Management Plan, Interim Groundwater Remediation Plan, Picatinny Arsenal, NJ	Metcalf & Eddy, Inc.	JAN-1990
	Geophysical Surveys to Locate Buried Drums at Post Farm Site, Picatinny Arsenal	US Geological Survey, Pierre J. Lacombe	JUL-1990
	Environmental Remedial Actions at Picatinny Arsenal	Weston	DEC-1990
	Streamed-Material Characterizations and Surface Water Quality, Green Pond Brook and Tributaries, Picatinny Arsenal, NJ 1983-90, U.S. Geological Survey, Water Resources Investigation Report 95-4246	US Geological Survey	DEC-1990
1991			
	Air Permit Log No. 01-90-2140 (Permit to Construct, Install or Alter Control Apparatus or Equipment), New Jersey (Revised)	Department of Environmental Protection	JAN-1991
	Sampling and Analysis and Quality Assurance/Quality Control Plan, Interim Groundwater Remediation, Picatinny Arsenal, NJ		FEB-1991
	Remedial Investigation Concept Plan for Picatinny Arsenal Volumes 1 and 2	Argonne National Laboratories	MAR-1991
	Health Risk Assessment Study No. 39-26-L172-91, ARDEC, Picatinny Arsenal, NJ	AEHA	APR-1991

IRP Previous Studies

	Title	Author	Date
1991			
	Picatinny Arsenal Open Burn Area, Air Toxic Monitoring, 14-15 November 1990	Foster-Wheeler Enviresponse Inc.	MAY-1991
	Health Risk Assessment Study No. 39-26-L172-91, ARDEC, Picatinny Arsenal, NJ	AEHA	JUL-1991
	Federal Facility Agreement, Administrative Docket Number: II-CERCLA-FFA-001-04	USEPA and US Army Armament Research Development and Engineering Center	AUG-1991
	Environmental Remedial Actions at Picatinny Arsenal Volumes I, II and III	Weston Services, Inc.	OCT-1991
	Removal Site Investigation of Post Farm Landfill, Drum Burial Area at Picatinny Arsenal, Volume 1	Roy F. Weston, Inc.	OCT-1991
1992			
	Health Risk Assessment Study No. 39-26-L172-92, ARDEC, Picatinny Arsenal, NJ	AEHA	APR-1992
	Decision Document, Picatinny Arsenal Off-Post Alternate Water Supply		SEP-1992
	Removal Site Investigation of Post Farm Landfill, Drum Burial Area at Picatinny Arsenal, Phase II and Phase III Technical Report	Roy F. Weston, Inc.	SEP-1992
	Appendix B: U.S.G.S. Well Logs and Downhole Geophysical Logs	Dames and Moore	OCT-1992
	Removal Engineering Evaluation/Cost Analysis (EE/CA) - Final Post Farm Landfill - Site 23 (Drum Burial Area Only) Picatinny Arsenal	Roy F. Weston, Inc.	OCT-1992
	Remedial Investigation/ Feasibility Study (RI/FS) of the Burning Ground at Picatinny Arsenal	Dames and Moore	NOV-1992
	Part B, Field Sampling Plan (FSP)	Dames and Moore	NOV-1992
	Part C, Quality Assurance Project Plan	Dames and Moore	NOV-1992
	Environmental Baseline Study for Picatinny Arsenal, Volume II	US Army Armament Munitions & Chemical Command Armament RDE Center	DEC-1992
	Part D, Health and Safety Plan	Dames and Moore	DEC-1992
	Part A, RI/FS Work plan	Dames and Moore	DEC-1992
1993			
	Validated Sampling Data	Veritech Environmental	JUN-1993
	Removal Action Report, Post Farm Landfill -Drum Burial Area, Picatinny Arsenal, Rockaway Township, New Jersey	Roy F. Weston, Inc.	JUN-1993
	Part B, Field Sampling Plan	Dames and Moore	JUL-1993
	Part A, Work plan	Dames and Moore	JUL-1993
	Phase I Remedial Investigation/Feasibility Study (RI/FS) Picatinny Arsenal, New Jersey	Dames and Moore	AUG-1993
	Part A, Work Plan	Dames and Moore	AUG-1993
	Part C, Quality Assurance Project Plan	Dames and Moore	AUG-1993
	Part D, Health and Safety Plan	Dames and Moore	AUG-1993

IRP Previous Studies

	Title	Author	Date
1993			
	Phase I Remedial Investigation/Feasibility Study (RI/FS) Picatinny Arsenal, New Jersey	Dames and Moore	AUG-1993
	Part B, Field Sampling Plan	Dames and Moore	AUG-1993
	Part C, Quality Assurance Project Plan	Dames and Moore	AUG-1993
	Part D, Health and Safety Plan	Dames and Moore	AUG-1993
	Environmental Remedial Actions, Building 519, at Picatinny Arsenal, Final Closure Plan	Roy F. Weston	SEP-1993
	Environmental Remedial Actions Post Farm Landfill, Borrow Area at Picatinny Arsenal, Final Work Plan	Roy F. Weston	OCT-1993
	Non-Time Critical Removal Action Preliminary Assessment for Unexploded Ordnance Area of the DRMO Yard (Site 31),	Roy F. Weston	NOV-1993
1994			
	Hydrology of and Water Quality In The Open Burning Area and Vicinity, Picatinny Arsenal, NJ, 1989-90, Water Resources Investigation Report 92-4134	US Geological Survey	JAN-1994
	RCRA Groundwater Monitoring Plan Building 95 Surface Impoundments	Carpenter Environmental Associates Inc.	JAN-1994
	Water Allocation Permit Equivalency No. 2450E (formerly 2403P), New Jersey	Department of Environmental Protection	FEB-1994
	Environmental Remedial Actions Post Farm Landfill, Borrow Area at Picatinny Arsenal, Preliminary Subsurface Investigation	Roy F. Weston, Inc.	FEB-1994
	Non-Time Critical Removal Action Site Investigation Report of the DRMO (RI-Concept Site No. 31	Roy F. Weston	JUL-1994
	NJ Pollutant Discharge Elimination System/Discharge to Groundwater (NJPDES/DGW) Permit Equivalency (PEQ) for Surfactant Injection Study	Jersey Department of Environmental Protection	OCT-1994
	Burning Ground Remedial Investigation Report (RI Concept Plan Site No.34 and Area A), Volumes I and II)	Dames and Moore	DEC-1994
	Picatinny Arsenal, Phase II Remedial Investigation/ Feasibility Study Work Plan, Final Report	USAEC	DEC-1994
	Picatinny Arsenal, Phase II Sampling and Analysis Plan and Quality Assurance Project Plan, Volume 1 and Volume II, Final Report	USAEC	DEC-1994
	Picatinny Arsenal, Phase II RI/FS, Final Health and Safety Plan	USAEC	DEC-1994
	Evaluation of the Effect of Extraction Well Withdrawals on a Trichloroethylene Plume in Ground Water Near Building 24, Picatinny Arsenal	US Geological Survey	DEC-1994
1995			
	Particle-Tracking Analyses to Determine locations for a New Extraction Well in the Trichloroethylene Plume in Groundwater Near Building 24, Picatinny Arsenal, NJ	US Geological Survey	JAN-1995
	Final Report and Appendices CERCLA Site Clearances, Pistol Range	Carpenter Environmental Assoc.	FEB-1995
	RCRA Building 95 Impoundments Groundwater Monitoring Results Sampling of June 25, 1993	Northeastern Analytical Corporation	APR-1995
	Evaluation of the Effect of Extraction Well Withdrawals on a Trichloroethylene Plume in Groundwater Near Building 24, Picatinny Arsenal	U.S. Geological Survey	APR-1995
	Picatinny Arsenal, Appendix A, Volume II, CERCLA Site	Carpenter Environmental	JUN-1995

IRP Previous Studies

	Title	Author	Date
1995			
	Clearances for Building 537	Associates, Inc.	
	Non-Time Critical Removal Action Site Investigation Report and Engineering Evaluation/Cost Analysis at Building 1363A and 1373, RI Concept Area L, Picatinny Arsenal, New Jersey	Carpenter Environmental Associates, Inc.	JUN-1995
	Appendix D, Volume II and EE/CA at Buildings 1363A and 1373	Carpenter Environmental Associates, Inc	JUN-1995
	Engineering Evaluation/Cost Analysis for a Non-Time Critical Removal Action for Radium, Strontium and Depleted Uranium Contaminated Soils at Picatinny Arsenal Health Physics Office and the Installation	Army Materiel Command, Rock Island, IL with Allied Technology Group	JUN-1995
	Final Report and CERCLA Site Clearances for Building 537	Carpenter Environmental Associates, Inc.	JUN-1995
	Final Engineering Evaluation/Cost Analysis Report for Buildings 1363A and 1373	Carpenter Environmental Associates, Inc.	JUN-1995
	Final Report and Appendices for CERCLA Site Clearances for Building 537	Carpenter Environmental Associates, Inc.	JUN-1995
	Appendix B and C, Volume I, SI Report and EE/CA at Buildings 1363A and 1373,	Carpenter Environmental Associates, Inc.	JUN-1995
	Appendix A, Volume II, SI (Site Investigation) Report and EE/CA (Engineering Evaluation/Cost Analysis) at Buildings 1363A and 1373	Carpenter Environmental Associates, Inc.	JUN-1995
	Final Report and Appendix A, Volume I, CERCLA Site Clearances for Building 537	Carpenter Environmental Associates, Inc.	JUN-1995
	Appendix C, Volume II and EE/CA at Buildings 1363A and 1373	Carpenter Environmental Associates, Inc.	JUN-1995
	Final Summary Removal Report for Non-Time Critical Removal Actions at Buildings 1363A and 1373, RI Concept Area L, Picatinny Arsenal, NJ	Carpenter Environmental Associates, Inc.	SEP-1995
	Quality Assurance Project Plan, Interim Groundwater Treatment System	Dow Environmental Inc.	NOV-1995
1996			
	Hydrogeology of and Simulation of Ground-Water Flow at Picatinny Arsenal Water Resources Investigation, 96-4061	U.S. Geological Survey	JAN-1996
	Picatinny Arsenal Restoration Advisory Board (PAERAB) Charter	PAERAB	AUG-1996
	Evaluation of Structures Built Prior to 1946 at Picatinny Arsenal	WCH Industries	OCT-1996
1997			
	Analysis of Groundwater Flowpaths Near Water Supply Wells, Picatinny Arsenal, NJ	US Geological Survey Water-Resources Investigations Report 96-4228	JAN-1997
	Picatinny Arsenal Area D Groundwater Feasibility Study Data Gap Work plan, Delivery Order 007, Volume 1B Data gap Work plan Sections 4, 5, 6 and 7	ICF Kaiser Engineers	OCT-1997
	Picatinny Arsenal Area D Groundwater Feasibility Study, Volume 1A - Data Gap Work, Volume 1B Data Gap Work plan	ICF Kaiser Engineers	OCT-1997
	Picatinny Arsenal Area D Groundwater Feasibility Study, Volume 1A Data Gap Work, Volume 1B Data Gap Work Plan	ICF Kaiser Engineers	OCT-1997

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	Title	Author	Date
1997			
	Phase 1 Remedial Investigation Report Volume 6A, Section 15, Conclusions and Recommendations	Dames and Moore	NOV-1997
	Site 23 - Post Farm Landfill Additional Investigation Data Report -Volume 1- DATA and Volume II Appendices	ICF Kaiser Engineers	NOV-1997
	Ecological Field Sampling Work Plan Phase II Remedial Investigation/Feasibility Study, Picatinny Arsenal, New Jersey	ICF Kaiser Engineers	DEC-1997
	Relative Risk Site Evaluation No. 38-EH-5690-97, Picatinny Arsenal, NJ	USACHPPM	DEC-1997
1998			
	Preliminary Assessment/Site Inspection Report for Non-Evaluated Phase III RI Concept Plan Sites and Additional Sites within RI concept Plan Area L, Volume I, Sites with Recommendations For No Further	ICF Kaiser Engineers	JAN-1998
	Work Plan for Additional RI Investigation at Phase II, Group 1, Sites 40, 93, 156 & 157	ICF Kaiser Engineers	FEB-1998
	Picatinny Arsenal Facility-Wide Health and Safety Plan, Volumes I and II	ICF Kaiser Engineers	FEB-1998
	Work plan for Additional RI Investigation at Phase II, Group 3, Sites 1, 2, 4D & 4E	ICF Kaiser Engineers	FEB-1998
	Phase 1, Site 20/24 Data Report and Additional Investigation Work plan - Picatinny Arsenal, Phase I	ICF Kaiser Engineers	MAR-1998
	Community Involvement Response Plan Picatinny Arsenal	Picatinny	APR-1998
	Field Inspection of 53 Areas Sensitive for Cultural Resources and Phase IB Archaeological Surveys of Eight Sensitive Areas at Picatinny Arsenal, Morris County, NJ	Panamerican Consultants, Inc.	APR-1998
	Response to NJ Historic Preservation Office Review of Architectural Assessment of Historic Structures at Picatinny Arsenal, Morris County, NJ and Definition of Historic Districts for Picatinny Arsenal	Panamerican Consultants, Inc.	AUG-1998
	Site 23 -Post Farm Landfill Fracture Trace Analysis Report	ICF Kaiser Engineers	AUG-1998
	Picatinny Arsenal Facility-Wide Field Sampling Plan	ICF Kaiser Engineers	SEP-1998
	Workplan Summary Investigation Tables for Phase III 1A Study Sites, Delivery Order 0017	ICF Kaiser Engineers	SEP-1998
	Trenching and Sampling Work plan Site 180 -Waste Burial Area, Task Order 19	ICF Kaiser Engineers	SEP-1998
	Work plan for Areas F and G Groundwater Remedial Investigation, Task Order 0017	ICF Kaiser Engineers	DEC-1998
1999			
	Final Remedial Investigation Work plan Buildings 31 and 33 Picatinny Arsenal, New Jersey Contract Number DAAE30-96-D-1026, Delivery Order Three	Environmental Compliance, Inc.	FEB-1999
	Phase II Remedial Investigation Report, Round 1, Volume 1	ICF Kaiser Engineers	MAR-1999
	Phase 1 Remedial Investigation Report, Volume 1, Introduction and Area B	Dames and Moore	APR-1999
	Area B Data Report, Groundwater Feasibility Study Data Gap Investigation, Volume 2, Appendices A-R	ICF Kaiser Engineers	APR-1999
	Phase II Remedial Investigation Report, Round 1, Volume 2, Area H Sites	ICF Kaiser Engineers	APR-1999

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Title	Author	Date
Phase II Remedial Investigation Report, Round 1, Volume 3, Area I, No Further Action Sites	ICF Kaiser Engineers	APR-1999
Phase II Remedial Investigation Report, Round 1, Volume 3 Area I lA Sites Recommended for Additional Investigation	ICF Kaiser Engineers	APR-1999
Phase II Remedial Investigation Report, Round 1, Volume 3, Area I 2A/3A Sites Recommended for Additional Investigation	ICF Kaiser Engineers	APR-1999
Phase II Remedial Investigation Report, Round 1, Volume 4, Area J Sites	ICF Kaiser Engineers	APR-1999
Public Health Assessment for Picatinny Arsenal (US Army) Dover, Morris County, NJ, CERCLIS NO NJ3210020704	ATSDR	APR-1999
Health Consultation, Review of Picatinny Arsenal PCB Health Risk Assessment Assumptions, Picatinny Arsenal, Dover, Morris County, NJ CERCLIS NO NJ3210020704	ATSDR	APR-1999
Proposed Plan No Response Action with Existing Institutional Controls and Land Use Control Assurance Plan for Sites 19, 22, 28, 44, 49, 86, 1043, 106, 124, 135, 141, 143, 145 163, 182 and 183	ICF Kaiser Engineers	APR-1999
Phase I Remedial Investigation Report, Volume 7, Ecological Assessment	Dames and Moore	APR-1999
Phase l, Remedial Investigation Report, Volume 14, Appendix D Data Validation Appendix E Physical Properties of Contaminants of Concern	Dames and Moore	APR-1999
Appendix E Physical Properties of Contaminants of Concern	Dames and Moore	APR-1999
Phase I Remedial Investigation Report, Volume 1, Introduction and Area B	Dames and Moore	APR-1999
Phase I Remedial Investigation Report, Volume 8, Human Health Assessment	Dames and Moore	APR-1999
Phase I Remedial Investigation Report, Volume 2, Study Area C	ICF Kaiser Engineers	APR-1999
Phase l Remedial Investigation Report Volume 3, Study Area D and E	Dames and Moore	APR-1999
Phase l RI Report, Volume 5, Section 10 Study Area G	Dames and Moore	APR-1999
Phase l RI Report, Volume 6, Sections 11 & 12, Study Area G Green Pond Brook and Fate and Transport	Dames and Moore	APR-1999
Compilation of Background Information and Existing Institutional Controls for Reference During Regulatory Review Proposed Plan - No Response Action with Existing Institutional Controls and LUCAP for S	ICF Kaiser Engineers	MAY-1999
Picatinny Arsenal Facility-Wide Quality Assurance Project Plan	IT Group	MAY-1999
Picatinny Arsenal Task Order 17, Phase l 2A/3A Sites Additional Investigation Work Plan	IT Group	JUL-1999
Area E Groundwater Feasibility Study Data Gap Investigation Work Plan	ICF Kaiser Engineers	JUL-1999
Area E Groundwater Feasibility Study Data Gap Investigation Work Plan	ICF Kaiser Engineers	JUL-1999
Phase I Additional RI Sites 22, 44, 61, 104, 122, 135, 141 and 145, Volumes 1 & 2	IT Corporation	SEP-1999
Picatinny Arsenal Task Order 19, Engineering	IT Corporation	SEP-1999

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	Title	Author	Date
1999			
	Evaluation/Cost Analysis (EE/CA) Site 122, PCB Soils at Building 60/60A Area		
	Area B Data Report/Groundwater Feasibility Study Data Gap Investigation, Volumes 1, Data Report Workplan	IT Group	OCT-1999
	Picatinny Arsenal Facility-Wide Background Investigation Work Plan	IT Corporation	OCT-1999
	Picatinny Arsenal Additional Site Investigations Sites 3, 31, 192, and 199 (Workplan	IT Corporation	NOV-1999
2000			
	Picatinny Arsenal Task Order 19 Site 122 PCB Soil and Sediment Removal Action Work plan	IT Corporation	JAN-2000
	Picatinny Arsenal Task Order 17, Site 34, Proposed Plan	IT Corporation	MAR-2000
	Feasibility Study for Site 20/24 Picatinny Arsenal, NJ	IT Corporation	MAR-2000
	Picatinny Arsenal Task Order 19, Site 16 Guncotton Line Investigation Work plan	IT Corporation	MAR-2000
	Phase I & II Remedial Investigation Report, Buildings 31 and 33, Picatinny Arsenal, NJ Contract No. DAAE30-96-D-1026, D.O. 3	Environmental Compliance, Inc.	APR-2000
	Picatinny Arsenal Task Order 17 Phase III 2A/3A Sites Additional Investigation Workplan	IT Corporation	JUN-2000
	Screening-Level Ecological Risk Assessment Site 54 - Lake Denmark Remedial Investigation/Feasibility Study, Picatinny Arsenal, NJ	IT Corporation	JUL-2000
	Area E Groundwater Feasibility Study	IT Corporation	JUL-2000
	Risk Management Plan for 9 Sites in the Phase I Area, Picatinny Arsenal, NJ	IT Corporation	AUG-2000
	Picatinny Arsenal, Task Order 19, Site 180, Exploratory Trench Investigation Data Report	IT Corporation	OCT-2000
	Picatinny Arsenal Task Order 19, Site 122 (DSERTS #PICA011) PCB Soil & Sediment Removal Action Report	IT Corporation	OCT-2000
2001			
	Picatinny Arsenal RCRA Subpart X Permit Monitoring Summary of Groundwater Sampling Results from February 1999 to October 2000, Task Order 0027	IT Group	JAN-2001
	Mid-Valley Groundwater Investigation Work plan Picatinny Arsenal, NJ	IT Corporation	JAN-2001
	Iron Powder Demonstration Study: REO: Interim Status Report PTA Landfill Morris County, NJ	ARS Technologies Inc.	JAN-2001
	Picatinny Arsenal Task Order 19, Engineering Evaluation/Cost Analysis - Remedial Action to Treat Tetryl in Soil from the Northern Tetryl Pits at Site 17	IT Corporation	FEB-2001
	Picatinny Arsenal Phase III-1A Human Health Risk Assessment Approach	IT Corporation	MAR-2001
	Picatinny Arsenal Green Pond Brook & Bear Swamp Brook Focused Feasibility Study, Task Order 17	IT Corporation	APR-2001
	Indiana Bat Prey Tissue Sampling Work plan, Picatinny Arsenal New Jersey, Task Order 5	IT Corporation	APR-2001
	Picatinny Arsenal Task Order 17, Fish Collection and Human Health Risk Assessment Work plan	IT Corporation	APR-2001
	Institutional Control Proposed Plan For Soils at Sites: 19, 28, 44, 49, 86, 106, 124, 135, 141, 143, 163, 182	IT Group, Inc.	JUN-2001

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	Title	Author	Date
2001			
	and 183 at Picatinny Arsenal		
	Proposed Plan for Site 20/24 Picatinny Arsenal, New Jersey	IT Group Inc.	JUN-2001
	Feasibility Study for Site 23, Picatinny Arsenal, NJ	IT Corporation	JUN-2001
	Picatinny Arsenal Task Order 17, Area C Groundwater Data Report	IT Corporation	JUN-2001
	Area D Groundwater Feasibility Study, Report of Model Re-Calibration and Cost Analysis	IT Corporation	JUN-2001
	Picatinny Arsenal Task Order 17, Fish Collection and Human Health Risk Assessment Workplan; also listed under Risk Assessment Reports	IT Corporation	JUL-2001
	Picatinny Arsenal Task Order 19, Site 16, Guncotton Line Investigation and Removal Action Report	IT Corporation	JUL-2001
	Picatinny Arsenal Task Order 17, Area C Groundwater Data Report	IT Corporation	JUL-2001
	Institutional Control Record of Decision for Soils at Sites 19, 28, 44, 49, 86, 106, 124, 135, 141, 143, 163, 182 and 183	IT Corporation	JUL-2001
	Picatinny Arsenal Task Order 17, Site 34, Feasibility Study Report	IT Corporation	AUG-2001
	Picatinny Arsenal Task Order 19, Site 17, (DSERTS #PICA 001) Northern Tetryl Pits, Explosive Soil Removal and Treatment Action Work Plan	IT Corporation	SEP-2001
	Proposed Plan for Site 23, Post Farm Landfill, Picatinny Arsenal, NJ Task Order 17, prepared by IT Corporation, Draft Final	IT Corporation	OCT-2001
	Picatinny Arsenal, Delivery Order No.17, Phase II Group 3 Sites Remedial Investigation Report Sites 1, 2 & 4, Volumes 1 - 6	IT Corporation	OCT-2001
	Picatinny Arsenal Phase II Sites Surface Water & Sediment Supplemental Human Health Risk Assessment	IT Corporation	NOV-2001
	Picatinny Arsenal Phase II Sites Surface Water & Sediment Supplemental Human Health Risk Assessment	IT Corporation	NOV-2001
	Picatinny Arsenal Phase II Sites Surface Water & Sediment Supplemental Human Health Risk Assessment (see also in GW documents),	IT Corporation	NOV-2001
	Proposed Plan for Green Pond and Bear Swamp Brooks, Picatinny Arsenal, NJ	IT Corporation	DEC-2001
2002			
	Picatinny Arsenal Task Order 19 Remedial Action Work plan for the Construction of a Soil Cap at Site 20/24 Pyrotechnic Testing Range	IT Group	FEB-2002
	Draft Technical Report, Bench Scale Study for Innovative Technology Demonstration, Picatinny Arsenal/Range Safe	BEM Systems, Inc.	MAR-2002
	Picatinny Arsenal Task Order 17 Phase III - 1A Sites Remedial Investigation Report Area O - Site 54 Volume 4, Binder 5		APR-2002
	Area B Groundwater Feasibility Study, Volume 1 Report, Volume 2 Appendices	IT Corporation	APR-2002
	Picatinny Arsenal Task Order 17, Phase III 1A Sites,		APR-2002

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Title	Author	Date
Remedial Investigation Report, Area P, Volume 5, Binder 6		
Proposed Plan for Area B Groundwater Picatinny Arsenal NJ	Shaw Environmental & Infrastructure, Inc.	APR-2002
Picatinny Arsenal Task Order 17 Phase III 1A Sites, Remedial Investigation Report, Area N Site 10 Volume 3, Binder 4		APR-2002
Picatinny Arsenal Task Order 17 Phase III - 1A Sites Remedial Investigation Report General Sections Volume 1, Binder 1		APR-2002
Picatinny Arsenal Facility-Wide Background Investigation	IT Corporation	MAY-2002
Environmental & Infrastructure, Inc. (formerly IT Corporation), May-02.	IT Corporation	MAY-2002
Picatinny Arsenal Task Order 17, Fish Consumption Human Health Risk Assessment Report	IT Corporation	MAY-2002
Picatinny Arsenal Task Order 19 Work plan for the Investigation of Sumps and Dry Wells with Previously Identified COCs at Various Sites	IT Corporation	MAY-2002
Engineering Evaluation/Cost Analysis (EE/CA) for the Removal and Disposal of the Sediment from the Retention Basins of Bear Swamp Brook, Picatinny Arsenal, NJ	Picatinny Installation Restoration Office	JUN-2002
Picatinny Arsenal Task Order 5, Phase II Group 1 Sites, Remedial Investigation Report Sites 40, 93, 156 & 157 Volumes 1 through 7	IT Corporation	JUN-2002
Trichloroethylene Treatability Study Work Plan	Environmental Restoration	JUL-2002
Additional Site Investigations (Orchard) Sites 3, 31, 192 & 199 Remedial Investigation Report Volume 3, Human Health Risk Assessment Appendix M	IT Corporation	JUL-2002
Proposed Plan for Area D Groundwater Picatinny Arsenal, New Jersey	Shaw Environmental & Infrastructure Inc.	AUG-2002
Revised Work Plan for Lead Isotope Analysis For Area C Groundwater, Picatinny Arsenal, NJ	Shaw Environmental & Infrastructure, Inc.	AUG-2002
Sampling Work Plan Site 193 Bear Swamp Brook Sediment Retention Ponds Task Order 17	Shaw Environmental & Infrastructure Inc.	AUG-2002
Revised Work Plan for Lead Isotope Analysis For Area C Groundwater, Picatinny Arsenal, NJ	Shaw Environmental & Infrastructure, Inc.	AUG-2002
Submittal of Response to EPA's Evaluations of Picatinny's responses to USEPA comments on the Phase III-1A RI Report, Picatinny Arsenal, Oct-02.	Shaw Environmental & Infrastructure Inc.	OCT-2002
Sampling Work Plan Site 193 -Bear Swamp Brook Sediment Retention Ponds Task Order 17p	IT Corporation	OCT-2002
Picatinny Arsenal Task Order 17 Phase III -1A Sites, Remedial Investigation Report, Area L, Volume 2, Binder 3 (Sites 43, 91, 103, 161, 168 Groundwater Assessment)		OCT-2002
Picatinny Arsenal Task Order 17, Additional Site Investigations Remedial Investigation Report, Sites 3, 31, 192, and 199 Volume I	IT Corporation	NOV-2002
Draft Classification Exception Area (CEA), New Jersey	Department of Environmental Protection	NOV-2002
Picatinny Arsenal Task Order 17 Phase III -1A Remedial Investigation Report, Area L, Volume 2,	IT Corporation	NOV-2002

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	Title	Author	Date
2002			
	Binder 2 (Sites 5, 6, 18, 35, 167), Oct-02.		
2003			
	Application for a Stream Encroachment Permit (equivalent) & Statewide General Permit (equivalent) No. 4 for sediment Removal from Bear Swamp Brook Sedimentation Ponds	New Jersey Department of Environmental Protection	JAN-2003
	Transcript of Proceedings, Public Meeting, Hilton Garden Inn, Rockaway, NJ 07885	A.R.T. Agency, Inc.	JAN-2003
	Task Order 17 Southern Boundary Fall 2002 Quarterly Groundwater Monitoring Report	IT Corporation	JAN-2003
	Remedial Investigation Work plan for LNAPL Area at Well 31-6, Building 31, Picatinny Arsenal, NJ Contract No. DAAE30-01-D-1004, D.O.5	Environmental Compliance, Inc.	JAN-2003
	Picatinny Arsenal Task Order 19, Site 16, Guncotton Line Investigation and Removal Action Report	Shaw Environmental, Inc.	FEB-2003
	Correspondence and Comments to USEPA Response top Comments on Site 34 Proposed Plan	Picatinny Arsenal	MAR-2003
	Correspondence and Comments to NJ Department of Environmental Protection: Modification to DEP of Environmental Protection Land Use Regulation Element Permit-Equivalent No. 4 (Hazardous Site Investigation)	Picatinny Arsenal	MAR-2003
	Correspondence and Comments to NJ Department of Environmental Protection: Submittal of the Discharge Monitoring Report (DMR),	Picatinny Arsenal	MAR-2003
	Correspondence and Comments to EPA: Minutes from Final March 4th and 5th Partnering meeting	Picatinny Arsenal	MAR-2003
	Correspondence and Comments from EPA: Additional Sites Remedial Investigation Report, Sites 3, 31, 192 and 199	US Environmental Protection Agency	MAR-2003
	Feasibility Study for Site 25/26, Delivery Order 0017	US Army Corps of Engineers Baltimore District	MAR-2003
	Correspondence and Comments from USEPA: File Correspondence Phase III 1A Sites Remedial Investigation Report,	US Environmental Protection Agency	MAR-2003
	Phase II Group 1 and Group 3 Sites, Groundwater summaries, Picatinny Arsenal, NJ, Task Order 17	Shaw Environmental, Inc.	MAR-2003
	Phase I 2A/3A Sites Remedial Investigation Report Volume 2, Area D Sites	Shaw Environmental, Inc.	MAR-2003
	Phase I 2A/3A Sites Remedial Investigation Report, Volume 3, Area F Sites	Shaw Environmental, Inc.	MAR-2003
	Phase I 2A/3A Sites Remedial Investigation Report, Volume 3, Area F Sites	Shaw Environmental, Inc.	MAR-2003
	Picatinny Arsenal Task Order 17, Phase I 2A/3A Remedial Investigation Report, Volume 6 - Human Health Risk Assessment (site 60, 142, 185, 187, 209, and 210) Appendix Q	Shaw Environmental, Inc.	MAR-2003
	Picatinny Arsenal Task Order 17, Phase I 2A/3A Remedial Investigation , Volume 7 - Human Health Risk Assessment (Site 101, 118, 126, 136, 139, 146) Appendix R	Shaw Environmental, Inc.	MAR-2003
	Phase I 2A/3A Sites Remedial Investigation Report Volume 1	Shaw Environmental, Inc.	MAR-2003
	1. Site 16, Report, July 2002: No formal approval letter except IAG schedule - ongoing work in Phase II	Picatinny Arsenal	APR-2003

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Title	Author	Date
Additional Investigations. 2) Site 122 Removal Action Request		
Submittal of Data from Green Pond Brook in front of Site 78,	Picatinny Arsenal	APR-2003
Correspondence and Comments from NJ Department of Environmental Protection: Area D and Area C Reporting Change Request	New Jersey Department of Environmental Protection	APR-2003
U.S. Environmental Protection Agency	Shaw Environmental, Inc.	APR-2003
Site 193, Bear Swamp Brook, Sediment Removal Action, Delivery Order 17,	Shaw Environmental, Inc.	APR-2003
Correspondence and Comments to USEPA: comments on Phase III IA Remedial Investigation Report		MAY-2003
Proposed Plan for Site 23, Post Farm Landfill, Picatinny Arsenal	Shaw Environmental, Inc.	MAY-2003
Submittal of the Final Area D Groundwater Feasibility Study, Delivery Order 17,	Shaw Environmental, Inc.	MAY-2003
Proposed Plan for Green Pond and Bear Swamp Brooks, Picatinny Arsenal, NJ,	Shaw Environmental, Inc.	MAY-2003
Picatinny Arsenal Task Order 19 Addendum to the Remedial Action Work Plan for the Construction of a Soil Cap at Site 20/24 Pyrotechnic Testing Range	Shaw Environmental, Inc.	JUN-2003
Picatinny Arsenal Task Order 19, Site 122 (DSERTS #PICA011) PCB Soil & Sediment Removal Action Report, Shaw Environmental, Inc., Jun-03.	Shaw Environmental, Inc.	JUN-2003
Response to comments Final Fish Consumption Human Health Risk Assessment Report base on June 7th Meeting	Consumption Human Health Risk Assessment Report base on June 7th Meeting, Picatinny	JUN-2003
Lead Engineering Evaluation/Cost Analysis (EE/CA) for Soil Removal at Sites 139, 142, 209 (Building 430), 209 (Former Building 303), 161, and 171 at Picatinny Arsenal	USEPA	JUN-2003
NJ Pollutant Discharge Elimination System/Discharge to Groundwater (NJPDES/DGW) Permit Equivalency (PEQ),	New Jersey Department of Environmental Protection	AUG-2003
Submittal of Response to EPA Comments on the Phase I 2A/3A Remedial Investigation Report (RI Report),	Picatinny Arsenal	SEP-2003
Final Site 34 Proposed Plan	Shaw Environmental, Inc	SEP-2003
Mid-Valley Groundwater Investigation Data Gap Work Plan Picatinny Arsenal, NJ,	Shaw Environmental, Inc	SEP-2003
Picatinny Arsenal Task Order 19 Work Plan for the Investigation of Sumps and Dry Wells with Previously Identified COCs at Various Sites	Shaw Environmental, Inc	SEP-2003
Picatinny Arsenal Task Order 17 Phase III - 2A/3A Sites, Remedial Investigation Report, Volume 2 - Area L Sites	Shaw Environmental, Inc.	SEP-2003
Picatinny Arsenal Task Order 17 Phase III 2A/3A Sites Remedial Investigation Report, Volume 5 - Appendices A-K (Binder 1), Appendix L, Human Health Risk Assessment (Binder 2), Appendices M-O (Binder 3)	Shaw Environmental, Inc.	SEP-2003
Picatinny Arsenal Task Order 17 Phase III 2A/3A Sites Remedial Investigation Report, Volume 1, Volume 2 - Area L Sites, Volume 3 - Area M Sites,, Volume 4 - Area P Site	Shaw Environmental, Inc.	SEP-2003

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2003			
	Proposed Plan for Area E Groundwater, Picatinny Arsenal, NJ.	Shaw Environmental, Inc.,	OCT-2003
2004			
	Proposed Plan for Site 34	Shaw Environmental, Inc	JAN-2004
	Task Order 17 Southern Boundary Fall 2002 Quarterly Groundwater Monitoring Report	IT Corporation	JAN-2004
	Site 22 Feasibility Study, Picatinny Arsenal, New Jersey. Delivery Order 0017	Shaw Environmental, Inc.	FEB-2004
	Picatinny Arsenal Task Order 19, Lead Site Removal Action Work Plan	Shaw Environmental, Inc.	FEB-2004
	Phase II Group 1 and Group 3 Sites, Groundwater summaries, Picatinny Arsenal, NJ, Task Order 17	Shaw Environmental, Inc.	MAR-2004
	Picatinny Arsenal Area D Groundwater Record of Decision	Shaw Environmental, Inc.	APR-2004
	Picatinny Arsenal Task Order 17, 600 area Groundwater Remedial Investigation Workplan.		APR-2004
	600 Area Groundwater Remedial Investigation, Picatinny, Dover, NJ. (results of Downhole Geophysical Logging Surveys).	Mid-Atlantic Geosciences, LLC	MAY-2004
	Long Term Monitoring Plan and Land Use Control Remedial Design for the Post Farm Landfill, Picatinny Arsenal, NJ	Shaw Environmental, Inc.	JUN-2004
	Group 1 Sites Feasibility Study, Picatinny Arsenal, New Jersey	Shaw Environmental, Inc	JUN-2004
	Record of Decision Site 23 -The Post Farm Landfill, Picatinny Arsenal, NJ	Shaw Environmental, Inc	JUN-2004
	Proposed Plan for Area E Groundwater, Picatinny Arsenal, NJ.	Shaw Environmental Inc	JUL-2004
	Proposed Plan for Site 22, Picatinny New Jersey.	Shaw Environmental, Inc	AUG-2004
	Record of Decision Site 23 - The Post Farm Landfill, Picatinny Arsenal, NJ	Shaw Environmental, Inc	AUG-2004
	Picatinny Arsenal Task Order 17 Phase III & Phase I 2A/3A Sites Ecological Risk Assessment Work Plan.		OCT-2004
	Proposed Plan for Site 25/26 Soil, Picatinny New Jersey.	Shaw Environmental Inc.	NOV-2004
	Proposed Plan for Site 22, Picatinny New Jersey.	Shaw Environmental, Inc.	NOV-2004
	Proposed Plan for Area E Groundwater, Picatinny New Jersey.	Shaw Environmental Inc	NOV-2004
	Land Use Control Record of Decision for Soils at Sites: 19,28,44,49,86,106,124,135,141,143,163,182 and 183.	Shaw Environmental, Inc.	DEC-2004
	Record of Decision Green Pond	Shaw Environmental, Inc.	DEC-2004
	Quarterly Checklist to Ensure Integrity of Vegetative Cap, Section 2.2 of the Land Use Control Plan for Site 20/24, Quarterly Inspection #5		DEC-2004
	Site 20/24 Wetland Mitigation Report.	Shaw Environmental, Inc.	DEC-2004
2005			
	Record of Decision Site 34 The Burning Grounds	Shaw Environmental, Inc.	JAN-2005
	Picatinny Arsenal Task Order 19, Site 20/24 Pyrotechnic Testing Range Annual Landuse Certification	Shaw Environmental, Inc.	JAN-2005
	Picatinny Arsenal Task Order 17 Phase III 2A/3A Sites		JAN-2005

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Title	Author	Date
Remedial Investigation Report, Volume 6 Appendix L, Human Health Risk Assessment.		
Phase 1 2A/3A Sites Remedial Investigation Report Volume 1, Volume 2 - Area D Sites, Volume 3 - Area F Sites, Volume 4 - Area G sites and References, Volume 5 - Appendices, Volume 6 - Human Health	Shaw Environmental, Inc.	JAN-2005
Picatinny Arsenal Task Order 17 Phase III 2A/3A Sites Remedial Investigation Report, Volume 1, Volume 2 - Area L sites, Volume 3 - Area M Sites, Volume 4 - Area P Sites.		FEB-2005
Site 193, Bear Swamp Brook, Sediment Removal Action As-Built reports	Shaw Environmental, Inc.	MAR-2005
Picatinny Arsenal Task Order 17 Phase III & Phase I 2A/3A Sites Screening Level Ecological Risk Assessment		MAR-2005
Picatinny Task Order 17 Site 78, Remedial Investigation Report and Groundwater Pilot Study Work Plan	Shaw Environmental, Inc	MAR-2005
Record of Decision Area E Groundwater and Site 22	Shaw Environmental, Inc.	APR-2005
Proposed Plan for Area B Groundwater Picatinny Arsenal New Jersey	Shaw Environmental & Infrastructure, Inc	APR-2005
Revised Phase I & II Remedial Investigation Report, Buildings 31 and 33 Remedial Investigation Concept Sites 29 & 85/PICA 71, Picatinny Arsenal, New Jersey	Environmental Compliance, Inc	APR-2005
Picatinny Arsenal Task Order 17, Supplemental Investigation of the Apple Trees Recreational Area, Site 192	Shaw Environmental, Inc	APR-2005
Phase III -1A Sites Remedial Investigation Report General Sections Volume 1, Binder 1, Area L; Volume 2, Binder 2 (Sites 5,6,18,35,167) Area N - Site 10; Volume 3, Binder 4 Area O - Site 54; Volume		APR-2005
Area C Groundwater Feasibility Study, Picatinny, NJ	IT Corporation	MAY-2005
Final Feasibility Study for Site 61 and 104, Picatinny, NJ	Shaw Environmental Inc.	JUN-2005
Record of Decision Site 25/26 Soil Draft	Shaw Environmental, Inc	JUN-2005
Feasibility Study for Site(s) 61 and 104, Picatinny Arsenal	Shaw Environmental, Inc.	JUN-2005
Picatinny Arsenal Task Order 19, Report on the Investigation of Sumps and Dry Wells with previously identified COCs at various Sites Volume 1 Section 1 through 7, Figures and appendices A & B, Volume	Shaw Environmental, Inc	JUN-2005
Picatinny Arsenal Task Order 17 Phase III & Phase I 2A/3A Sites Screening Level Ecological Risk Assessment	Shaw Environmental, Inc.	JUN-2005
Correspondence and Comments from New Jersey Department of Environmental Protection: NJDEP Approval of the Record of Decision (ROD) for Site 34-Burning Grounds, Picatinny NJ	New Jersey Department of Environmental Protection	JUL-2005
Site 79 Sodium Lactate Groundwater Pilot Study Report, Picatinny, NJ	Shaw Environmental, Inc.	JUL-2005
Area B (Site 20/24) HRC and ORC Groundwater Pilot Study; Picatinny Arsenal New Jersey	Shaw Environmental & Infrastructure, Inc.	JUL-2005
Army Submission of Revised Pages Regarding the Phase II RI Report, Rounds 1 and 2, Volume 1; Phase II	Picatinny Arsenal	AUG-2005

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RI Report Rounds 1 and 2, Volume 2 Area H; Phase II RI Report, Rounds 1 and 2 Volume 4 Area J,		
Final 25 Site Feasibility Study	Shaw Environmental, Inc.	AUG-2005
Response to Comments regarding Area E Groundwater and Site 22 ROD	USEPA	AUG-2005
Submission of Revised Pages for Phase I & II Remedial Investigation Report, Buildings 31 and 33 Remedial Investigation Concept Sites 29 & 85/PICA 71, Picatinny Arsenal, New Jersey	Environmental Compliance, Inc.	AUG-2005
Site 2 (Phase II/Group 3) Nanoscale ZVI Pilot Groundwater Study Work Plan (Dated July 2004) Picatinny Arsenal, NJ	Shaw Environmental, Inc.	AUG-2005
Draft Site 2 (Phase II/Group 3) Nanoscale ZVI Pilot Study Report (Dated August 2005) Picatinny Arsenal, NJ	Shaw Environmental, Inc.	AUG-2005
Army response to the Letter request to complete investigation related to Area C Groundwater on behalf of Pondview Estates	Picatinny Arsenal	AUG-2005
Comments from US Environmental Protection Agency: Approval of Revisions to Group 3 Feasibility Study (Dated August 2005).	USEPA	AUG-2005
Comments from US Environmental Protection Agency: Area E Groundwater and Site 22 (PICA 077) ROD (Dated April 2005)	USEPA	AUG-2005
Comments from US Environmental Protection Agency: Comments regarding Record of Decision (ROD) for Site 25/26 Soil (Dated June,	USEPA	AUG-2005
Comments from US Environmental Protection Agency: Approval of changes to Phase III 1A RI Report (Dated April, 2005	USEPA	AUG-2005
Comments from US Environmental Protection Agency: Response to comments for Phase II RI Report, Volume 3-Area I Sites (Dated March 25, 2005).	USEPA	AUG-2005
Draft Final Lead Removal Action Data Report	Shaw Enviromental Inc.	SEP-2005
Approval of Group 1 Sites FS (Phase II Sites 40, 93, 156 and 157)	USEPA	SEP-2005
Letter request from Scarinci & Hollenbeck, LLC to review documents in the Picatinny Administrative Record on behalf of Pondview Estates	Scarinci & Hollenbeck, LLC	SEP-2005
Army response to letter request from Scarinci & Hollenbeck, LLC to review documents in the Picatinny Administrative Record on behalf of Pondview Estates	Scarinci & Hollenbeck, LLC	SEP-2005
Approval of Buildings 31/33 RI Report	USEPA	SEP-2005
Approval of Decision (ROD) for the Burning Grounds (Comments from USEPA)	USEPA	SEP-2005
Army Submission of Page Drops for the Final Area C Groundwater Feasibility Study	Picatinny Arsenal	OCT-2005
Army Electronic Submission of Proposed Supplemental Groundwater Investigationof 600 Area	Picatinny Arsenal	OCT-2005
Approval of Site 78 Remedial Investigation Report (Comments from EPA)	USEPA	OCT-2005
Approval of Sites 3, 31, 192 and 199 Remedial Investigation Report (Comments from USEPA)	USEPA	OCT-2005

IRP Previous Studies

	Title	Author	Date
2005			
	Approval of FS for Sites 31 and 101 (Comments from USEPA)	USEPA	NOV-2005
	Army Submission of IAG Meeting Minutes for November 1, 2005	Picatinny Arsenal	NOV-2005
	Mid-Valley Groundwater Feasibility Study Picatinny Arsenal, New Jersey	Shaw Environmental, Inc.	NOV-2005
	Feasibility Study for Sites 31` and 101	Shaw Environmental, Inc.	NOV-2005
	Mid-Valley Groundwater Feasibility Study	Shaw Environmental, Inc.	NOV-2005
	Submittal of Comments regarding Proposed Plan for Remediation of Area B Groundwater	Subsurface Solutions, LLC	NOV-2005
	Approval of Site Closure Report for Site 20/24 (Comments from USEPA)	USEPA	NOV-2005
2006			
	Correspondence and Comments from New Jersey Department of Environmental Protection: Complete Profile Sampling Results From Bureau of Safe Drinking Water, Picatinny NJ	New Jersey Department of Environmental Protection	JAN-2006
	Comments Regarding Phase III & Phase I 2A/3A Sites Baseline Ecological Risk Assessment	USEPA	JAN-2006
	Response to Comments Regarding Mid-Valley Groundwater Feasibility Study	USEPA	JAN-2006
	Request for Meeting to Resolve Language in Picatinny's Decision Document	Picatinny Arsenal	JAN-2006
	Submission of Final ESTCP Technology Demonstration Plan	Picatinny Arsenal	JAN-2006
	Comments from USEPA: USEPA's Comments EBS and Finding of Suitability to Lease Report for Buildings 350, 352, 353, 354	USEPA	MAR-2006
	Comments from USEPA: USEPA approval to Army's Response to Comments Regarding Mid-Valley Groundwater FS	USEPA	MAR-2006
	Picatinny Task Order 17: Phase III and Phase I 2A/3A Sites Baseline Ecological Risk Assessment	Shaw Environmental, Inc.	MAR-2006
	216468- Morris County Municipal Utilities Authority Rockaway Basin Well Drilling and Testing-Contract No. 32B	Hatch Mott MacDonald	MAR-2006
	Focused Feasibility Study for Buildings 31 and 33 Remedial Investigation Concept Sites 29 & 85/PICA 71	Environmental Compliance, Inc.	MAR-2006
	Remedial Design for Record of Decision for Green Pond Brook/Bear Swamp Brook (PICA-192)	Shaw Environmental, Inc.	APR-2006
	Bear Swamp Brook Oil/Water Separator and Tributary Stream Sediment Removal Action Work Plan	Shaw Environmental, Inc.	APR-2006
	Phase II Remedial Investigation Report, Rounds 1, and 2, Area I Volume 3 500 Sites; 900 and 3000 Area Sites; Area I Remaining Sites; and Area I Specific Appendices	Shaw Environmental, Inc.	MAY-2006
	Record of Decision for Soil at Site 25, Sanitary Landfill, and Site 26, Dredge Disposal Pile	Shaw Environmental, Inc.	JUL-2006
	Proposed Plan for Site 180	Shaw Environmental Inc.	JUL-2006
	Characterization Survey and Additional Sampling Plan for the Former Dog Pound Site	Shaw Environmental, Inc.	AUG-2006
	Action Memorandum, Munitions and Explosives of Concern Time Critical Removal Action for Tilcon Quarry, Picatinny, New Jersey	Picatinny Environmental Affairs Office	SEP-2006

IRP Previous Studies

2006

Title	Author	Date
Performance Based Contract Facility-Wide Field Sampling Plan	ARCADIS, Inc.	SEP-2006
Historical Records Review, Picatinny Arsenal, New Jersey: Stakeholder Draft	Malcolm Pirnie, Inc.	SEP-2006
Third Five-Year Review Report	Shaw Environmental, Inc.	OCT-2006
Performance Based Contract Quality Assurance Project Plan	ARCADIS, Inc.	OCT-2006
Groundwater Sampling and Temporary Well Installation, Picatinny Arsenal, Area D Golf Course	CPT Testing	NOV-2006
Draft Remedial Action Workplan, PICA 067 (Sites 25 and 26)	ARCADIS, Inc.	DEC-2006

2007

Record of Decision For Site 25/26 Soil	Picatinny Arsenal	JAN-2007
Draft Final Record of Decision, PICA 205, Area B Groundwater	ARCADIS, Inc.	JAN-2007
Final Proposed Plan for Site 180 (PICA 093), Waste Burial Area	ARCADIS, Inc.	FEB-2007
Final Time Critical Removal Action Work plan, Mount Hope Quarry, Morris County, New Jersey	Malcolm Pirnie, Inc.	FEB-2007
Site Inspection Work plan, Picatinny Arsenal, New Jersey	Malcolm Pirnie, Inc.	FEB-2007
Draft Final Remedial Action Work plan, Sites 25/26 (PICA 067), Sanitary Landfill and Dredge Pile	ARCADIS, Inc.	FEB-2007
Draft Remedial Design, PICA 205, Area B Groundwater	ARCADIS, Inc.	MAR-2007
Final Remedial Design, Area D	ARCADIS, Inc.	MAR-2007
Task Order 17- Bear Swamp Brook Oil/Water Separator and Tributary Stream Sediment Removal Action Work plan	Shaw Environmental, Inc.	MAR-2007
February 2007 Area E Groundwater Monitoring Data	ARCADIS, Inc.	JUN-2007
2nd Half 2006 and 1st Half 2007 Semiannual Groundwater / Surface Water Monitoring, Area D/Building 24 RCRA Units	ARCADIS, Inc.	JUN-2007
Draft Final Remedial Action Work plan, Site 180 (PICA 093) Waste Burial Area	ARCADIS, Inc.	JUN-2007
Record of Decision For PICA 020 Group of Sites	ARCADIS, Inc.	JUL-2007
Final Remedial Action Work plan, Site 25/26 (PICA 067), Sanitary Landfill and Dredge Pile	ARCADIS, Inc.	JUL-2007
Draft Final Land Use Control Plan, Remedial Design Addendum 01, Area D (PICA-76)	ARCADIS, Inc.	AUG-2007
Draft Remedial Design Area E (PICA-77) & Site 22 (PICA-010)	ARCADIS, Inc.	AUG-2007
1st and 2nd Quarter 2007 Groundwater Monitoring One-time Surface Soil Sampling Report	ARCADIS, Inc.	AUG-2007
Final Quality Assurance Project Plan	ARCADIS, Inc.	AUG-2007
Vapor Intrusion Investigation Report for the Child Development Center	ARCADIS, Inc.	AUG-2007
Draft Final Remedial Action Work plan, PICA 020 Group of Sites	ARCADIS, Inc.	AUG-2007
Record of Decision for Area E Groundwater and Site 22 (Building 95 Impoundment Area)	ARCADIS, Inc.	SEP-2007

IRP Previous Studies

	Title	Author	Date
2007			
	Record of Decision, Site 180 (PICA 093) Waste Burial Area	ARCADIS, Inc.	SEP-2007
	Proposed Plan for Area C Groundwater	Shaw Environmental, Inc.	SEP-2007
	Remedial Action Report, Site 23 (PICA 065) The Post Farm Landfill	ARCADIS, Inc.	SEP-2007
	Final Proposed Plan, Sites 31 and 101 (PICA 072), Former DRMO Yard and Former Gas Station	ARCADIS, Inc.	SEP-2007
	Draft Final Time Critical Removal Action Report, Mount Hope Quarry, Morris County, New Jersey	Malcolm Pirnie, Inc.	SEP-2007
	Remedial Action Report, Site 180 (PICA 093) Waste Burial Area	ARCADIS, Inc.	OCT-2007
	Picatinny Arsenal Army Defense Environmental Restoration Program Installation Action Plan FY 2007	Picatinny Arsenal	OCT-2007
	Picatinny Arsenal Compliance-Related Cleanup Installation Action Plan FY 2007	Picatinny Arsenal	OCT-2007
	Final Feasibility Study, Mid-Valley Groundwater	ARCADIS, Inc.	NOV-2007
	Stakeholder Draft, Site Inspection Report, Picatinny Arsenal, New Jersey	Malcolm Pirnie, Inc.	NOV-2007
	Site Inspection Report Picatinny Arsenal Relating to the MMRP	Malcolm Pirnie, Inc.	NOV-2007
	Feasibility Study for Sites 109, 125, 142, 144, 146 & PICA-203	Shaw Environmental Inc.	DEC-2007
	Engineering Evaluation / Cost Analysis Investigative Work Plan Residential Community Initiative Military Housing Project Area (Part of PICA-003-R-01)	PIKA- MP JV, LLC	DEC-2007
	Draft Final Time Critical Removal Action Report, Mount Hope Quarry, Morris County, New Jersey	Malcolm Pirnie, Inc.	DEC-2007
2008			
	Picatinny Arsenal Sampling Summary Report Former Dog Pound Site	Shaw Environmental, Inc.	JAN-2008
	Picatinny Arsenal Classification Exception Area Biennial Certification	Shaw Environmental, Inc.	JAN-2008
	Draft Final Interim Remedial Action Report, Area E Groundwater	ARCADIS, Inc.	FEB-2008
	Draft Final Feasibility Study, Area P Site 78 (PICA 013)	ARCADIS, Inc.	FEB-2008
	Child Development Indoor Air Sampling Report	ARCADIS	MAR-2008
	Remedial Action Report, Site 25/26 (PICA 067), Sanitary Landfill and Dredge Pile	ARCADIS, Inc.	MAR-2008
	Draft Final Proposed Plan, Sites 61 and 104 (PICA 102)	ARCADIS, Inc.	MAR-2008
	Record of Decision For Site 31/101 (PICA 72) Soil	ARCADIS, Inc.	MAR-2008
	2007 Annual Land Use Certification	ARCADIS, Inc.	MAR-2008
	RDX Report for 600 Hill	Shaw	APR-2008
	Remedial design for Area B Groundwater	ARCADIS	NOV-2008
2009			
	Draft Technical Memorandum for Group 3 Sites	ARCADIS	MAR-2009
	Draft Technical Memorandum for Group 1 Sites	ARCADIS	APR-2009

IRP Previous Studies

2009

Title	Author	Date
. "Final' Midvalley Groundwater Feasibility Study	ARCADIS	MAY-2009
Feasibility Study for Site 78 (PICA 13)	ARCADIS	MAY-2009
Remedial Design for LTM for Area C	Shaw Environmental	MAY-2009
Site 25/26 Remedial Action Report	ARCADIS	JUN-2009
Site 180 Remedial Action Report	ARCADIS	JUN-2009
PICA 20 (2007 LUC Group) Remedial Action Report	ARCADIS	JUN-2009
Site 61 and 104 (PICA 102) Remedial Action Report	ARCADIS	JUN-2009
Feasibility Study for PICA 1 LUC Group (PICA 1, 6, 22, 85, 143, 145, 163, 171, 192, and 199) (Arcadis 25 Site FS)	ARCADIS	SEP-2009
The 5 Site FS) (PICA 11, 85, 91, 97, and 108)	ARCADIS	SEP-2009
Wetland Mitigation Plan for PICA 072	ARCADIS	SEP-2009
Proposed Plan for PICA 13 (Site 78)	ARCADIS	OCT-2009
Skeet Range Workplan	Shaw Environmental	DEC-2009
45 Site FS¿:PICA 11, 50, 75, 91, 97, 108, 122, 134, 135, 136, 162, 175, 200, 209	ARCADIS	DEC-2009
Lake FS (PICA 15, 57, 195)	ARCADIS	DEC-2009
Non Lakes Feasibility Study (which includes TECUP Buildings))	ARCADIS	DEC-2009

2010

Proposed Plan for the PICA 1 LUC Group (Arcadis 25 Site FS)	ARCADIS	JAN-2010
Draft Group 1 Record of Decision	ARCADIS	JAN-2010
Draft Proposed Plan for 600 Area	Shaw Environmental	FEB-2010
Area E Annual Report 2009	ARCADIS	FEB-2010
Area B Annual Report	ARCADIS	FEB-2010
Remedial Design for PICA 008 (Group 3)	ARCADIS	APR-2010
Decommissioning Work plan for Pump and Treat Facility for Area D	ARCADIS	APR-2010
GPB/BSB (PICA 193) 2009 Annual Report	ARCADIS	JUN-2010
Revised CEA Biannual Report	ARCADIS	JUN-2010
Proposed Plan for PICA-111	Shaw Environmental	JUN-2010
Area C Semiannual Groundwater Data Report, winter 2010.	Shaw	JUN-2010
Signed Group 3 Record of Decision	Army with ARCADIS	JUL-2010
ROD for PICA 13 or Site 78	ARCADIS	JUL-2010
Annual LUC Certification Report	ARCADIS	JUL-2010
Site 31/101 (PICA 72) Remedial Action Report	ARCADIS	AUG-2010

IRP Previous Studies

	Title	Author	Date
2010			
	. Area C Groundwater Interim Remedial Action Report	Shaw	AUG-2010
	600 Area MTBE Groundwater Investigation Data Report	Shaw	AUG-2010
	Skeet Range SI Data Report	Shaw	SEP-2010
	Building 91, Site 78 Vapor Intrusion Evaluation, 2010, Picatinny Arsenal, NJ	ARCADIS	OCT-2010
	Site 34 Burning Grounds Sampling Results	ARCAIDS	OCT-2010
	Final Remedial Design for Groundwater and Surface Water Group 3 Site 1, 2, and 4 (PICA 008	ARACADIS	DEC-2010
	2009 Annual Monitoring Report Area D	ARCADIS	DEC-2010
	600 Area Source and Vapor Intrusion Work plan	Shaw	DEC-2010
2011			
	Area B GW Annual Report 2010	ARCADIS	FEB-2011
	Group 3 (PICA 008) Interim Remedial Action Report	ARCADIS	FEB-2011
	Revised CEA Biannual Report	ARCADIS	FEB-2011
	Hydrasleeve SOP	ARCADIS	FEB-2011
	ROD for PICA 13 or Site 78 signed by Army	Army	MAR-2011
	Final ICM Removal Action Report	ARCADIS	MAR-2011
	Group 1 (PICA 79) Interim Remedial Action Report	ARCADIS	MAR-2011
	Area E Annual Report 2009	ARCADIS	MAR-2011
	Former Skeet Range Remedial Investigation Work plan	Shaw	MAR-2011
	GPB/BSB (PICA 193 Annual Report) Annual Report 2010	ARCADIS	APR-2011
	Group 3 (PICA 008)Groundwater Annual Report 2010	ARCADIS	APR-2011
	PICA-111 Sites (Site 109, 125, 142, 144, 146 & PICA-203) Proposed Plan, May 2010	Shaw	MAY-2011
	Summary Table and Associated Figures 25 Site Group, PICA 001	ARCADIS	DEC-2011

PICATINNY ARSENAL

Installation Restoration Program

Site Descriptions

Site ID: PBC Picatinny
Site Name: PBC
Alias: PBC

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Phases	Start	End
PA	200009	200109
RA(C)	200604	200909
RA(O)	200705	201410

RIP Date: 200909

RC Date: 201612

SITE DESCRIPTION

This site was created to address funding information for the PBC for PTA.

The PBC site represents all the cost associated with all active Installation Restoration Program (IRP) sites at PTA into fiscal year (FY)15 (the PBC expires in December of 2014) except PICA-206, -111, and -058 and does not include RA costs associated with PICA-015, -057, -145, -155, -184, and -195. The scope of the current PBC only includes actions through the final ROD associated with these sites.

The current contract line item numbers (CLINs) are designated for LTM even though the AEDB-R shows RAO. This has been selected since a number of the sites are for RAO (i.e. MNA, cover maintenance etc.) and not solely LTM.

The current contract CLINs are designated for LTM even though the AEDB-R show RAO. This has been selected since a number of the sites are for RAO (i.e. MNA, cover maintenance etc.) and not solely LTM.

CLEANUP/EXIT STRATEGY

Please see the individual site descriptions for cleanup strategies.

Site ID: PICA-001
Site Name: INACTIVE TETRYL WASTE PITS (SITES 17/18)
Alias: 17/18

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Explosives, Metals, Polycyclic Aromatic Hydrocarbons (PAH), Volatiles (VOC)

Media of Concern: Sediment, Soil

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199606	201310
IRA	200010	200503

RIP Date: N/A

RC Date: 201310

SITE DESCRIPTION

The Northern Tetryl Pits (PICA-017) formerly consisted of four unlined, bermed pits, located at the intersection of 18th Avenue and 13th Street. The Southern Tetryl Pit (PICA-018) received waste from Building 1052, a nitrating building, and may have operated from 1938 to 1945. The northern and southern tetryl pits are currently inactive. Materials that may have been associated with the tetryl pits included: tetryl, acid (possibly nitric acid), and water. Lead is not a constituent of the final product.

Surface soil samples were collected as part of a preliminary assessment (PA)/SI conducted in 1996, and soil, sediment, and groundwater samples were collected during RI activities conducted from 1998 to 2000. Soil analysis indicated the presence of explosives (tetryl), metals (lead), and PAHs in excess of levels of concern (LOCs). Sediment in the on-site ditch, at the northern tetryl pit, contains PAHs above LOCs.

An engineering evaluation (EE)/cost analysis (CA) for the removal of soil co-contaminated with explosives and lead was completed in 2001. Soil contaminated with explosives [about 300 cubic yards (cy)] was treated in a bioreactor to address explosives. A rotted catch basin and 25 cy of soil were removed at the southern tetryl pits as part of a facility-wide sump and catch basin investigation in 2004.

An RI submitted in 2003 included the results of the tetryl removal action. Human health risk assessment (HHRA) results indicate the non-cancer hazard index (HI) is less than one for target populations and estimated total cancer risks are 1E-4 for industrial research workers and within target risk range of 1E-4 to 1E-6 for the on-site youth visitor scenario. A baseline ecological risk assessment (BERA) was conducted in 2005. It determined that although the food web models indicated that adverse effects on reproduction in small mammals or birds could occur given sufficient exposure to site contaminants of potential ecological concern (COPECs) in northeastern Area L, the field investigations and rodent sperm analysis (RSA) results indicated that effects, if any, were not impacting the local populations of small mammals or birds.

An FS with PICA-001 was approved by the USEPA in August 2009. The original PP was submitted in January 2010. The USEPA provided comments during the review process in FY10 and FY11 that indicated that they would not be satisfied with only ICs and would require ECs.

The USEPA requested and Army submitted the "25 Site Table" that provided summaries of the sites so the USEPA and the NJDEP could determine if the LUCs proposed for the sites comply with the USEPA policy.

Groundwater contamination is being addressed on an area-wide basis as part of the Mid-Valley groundwater investigation currently in the RI/FS stage. Details of this investigation are supported in PICA-204 and funding is supported under the PBC.

In a letter dated Nov. 27, 2012, the USEPA had technically approved the NFA with monitoring of land use PP for the 25 PTA sites within PICA 001, 006, 022, 085, 143, 146, 163, 171, 192, and 199. In this letter the USEPA agrees with the Army position that sites with acceptable risk should be considered as a NFA as existing LUCs prevent a different land use. The Army has agreed to notification and certification; however, because it is a NFA, no action is required to perform an RD or the implementation of LUCs.

This PP is expected to be publicly advertised in March of 2013 and the ROD signed by the USEPA and Army by the end of the

FY13. It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

CLEANUP/EXIT STRATEGY

It is expected that an NFA document with monitoring of land use ROD for the 25 PTA sites within PICA 001, 006, 022, 085, 143, 146, 163, 171, 192, and 199 will be signed this FY.

There will be no requirement for a RD or a LUC plan since USEPA has agreed that existing LUCS are considered adequate.

The monitoring and certification required by USEPA to ensure the current land use and exposure scenarios for this site are maintained will be funded under program management funding.

Site ID: PICA-002
Site Name: LOWER BURNING GROUND (SITE 34)
Alias: 34

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Dioxins/Dibenzofurans, Metals, Pesticides, Polychlorinated Biphenyls (PCB), Semi-volatiles (SVOC)

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

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199011	200508
RD	200604	201308
RA(C)	200604	201312
LTM	201312	204309

RIP Date: N/A

RC Date: 201312

SITE DESCRIPTION

The Lower Burning Ground encompasses an area of approximately seven acres. The site is broken into four areas: the landfill area, the waste pile area, the open burning area, and the burn pan area. The landfilled area sustained landfill operations from 1960 to 1980 to fill in low-lying ground. Direct burning of explosives-contaminated wastes on the ground surface was conducted in the open burning area until the practice was discontinued in 1985. From 1985 to 2011 explosives-contaminated wastes have been burned in nine burning pans located in the burn pan area.

In the 1980s, a geophysical survey was conducted and groundwater wells were installed. A SI was completed in 1989 that included collection of surface soil, groundwater, surface water/sediment samples and analysis for VOCs, base neutral acids (BNAs), cyanide, and total phenols. Metals and PAHs were detected above LOCs in soil and sediment. In 1990, USAEHA soil sampling found dioxins. In a 1990 groundwater assessment, wells and minipiezometers were installed and sampled for VOCs, BNAs, pesticides dioxins/furans, and PCBs. VOCs and metals were detected above LOCs and the HHRA found risk was above 5 by 10(-4). A contamination assessment in 1991 included surface soil sampling for VOCs, BNAs, total petroleum hydrocarbons (TPHs), PCBs, and PP metals.

The 1993 RI included sampling soil, surface water, sediment, and groundwater for VOCs, metals, BNAs, dioxins/furans, PCBs, and pesticides. In the soil there were exceedances of BNAs, metals, PCBs, and detections of explosives and dioxins/furans. There were exceedances of metals and VOCs in surface water and metals, pesticides, and cyanide in sediment. Metals were detected in above LOC in groundwater. The 1993 HHRA indicated that risk was above 1 by 10(-4) from metals, PAHs, PCBs, and dioxins. The ecological risk assessment (ERA) determined that there was elevated risk from metals, pesticides, PCBs, and dioxins. A limited groundwater sampling event in 1999 indicated that sampling via low-flow techniques returned exceedances of published standards for only two metals (arsenic and lead). UXO has been found in close proximity to the site.

The FS was prepared and approved by the regulatory agencies in the fall of 2001. Surface soil sampling, in order to complete the contamination delineation, was initiated in August 2002. These results will be used to finalize the design of the cap. A public meeting for the site was completed on Feb. 19, 2004. The ROD was signed by the PTA Garrison Commander and the USEPA.

The ROD included provisions that allowed the delay of the implementation of the cleanup (closure) until the incinerator is operational that would replace the burning. The incinerator was proven out and functional in May 2011. The burning pans and other equipment at the burning ground at PICA-002 were moved to the "new burning grounds." ARCADIS did perform both tree-clearing and surface-UXO clearance in the spring of 2012.

A change to the design of the cover required by he ROD has been agreed to by Army and regulators. The change is from a MATCON cover to a hybrid. A contract MOD was required in FY13 to include implementation of ARARs promulgated since the ROD was signed.

A full RD for a hybrid is expected to be approved by September of 2013. An explanation of difference is also required. The covering of the site will require wetland remediation on another part of PTA.

Site ID: PICA-002
Site Name: LOWER BURNING GROUND (SITE 34)
Alias: 34

The RD work plan was completed and approved in FY12 and is expected to be implemented within FY12.

The site will be remediated since the incinerator and new burning grounds are both fully operational since June 2011.

The cleanup, which must be consistent with RCRA, includes a capping system followed by cap maintenance and LTM of the cap and groundwater. The cap will be extended to cover the burning ground contamination extending into site 180.
The cleanup must be completed besides the LTM before September 2012.

The wells were sampled in 2010 based on the lag between implementation and ROD signature.

CLEANUP/EXIT STRATEGY

The LTM costs are included in the IRP PBC through December 2014.

LTM will continue in FY14 for the next 30 years as is required, to include groundwater monitoring and cap maintenance.

Site ID: PICA-006
Site Name: GUNCOTTON LINE (SITE 16)
Alias: 16

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Explosives, Metals

Media of Concern: Sediment, Soil

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199604	201310

RIP Date: N/A

RC Date: 201310

SITE DESCRIPTION

The Guncotton Line (GCL) is located near the southern end of Picatinny Lake, and is believed to be either an abandoned sanitary sewer line or a storm drain that inadvertently received nitrocellulose (NC), referred to as guncotton. The pipeline was formerly used to discharge liquid waste from a trinitrotoluene (TNT) facility, in Building 520, into Picatinny Lake. The line included a portion of open trench and a buried pipeline. Reportedly, the pipeline was about 2,500 ft long and ran from an underground catch basin near Building 554, past Building 506, under the location of a former coal pile, and ended in the vicinity of Building 424-E.

During the Phase II RI, a geophysical survey was conducted to identify the underground portion of the line. A long linear anomaly was identified northwest of Building 514; however, whether the anomalous area represents the GCL or another utility line was unclear. In addition, soil samples were collected from the open trench portion of the line. Explosives and metals have been detected in the soil from the open trench at concentrations in excess of LOCs. Bioassays conducted on soil from the open trench did detect explosives, pesticides, and metals in the test organisms but the levels of these chemicals did not result in increased toxicity to the earthworms. The undefined portion of the line, under the former coal pile, near Building 506, was identified in spring 2000 through the use of video cameras, smoke testing and test pitting. Approximately 270 linear ft of a 12-inch pipeline, and 200 linear ft of an eight-inch pipeline, were excavated and removed with NC-contaminated soil, in order that a sanitary sewer line could safely be installed.

Additional sampling in 2001 delineated the horizontal and vertical extent of contamination in the open trench. The risk from sediment and subsurface soil exposures are within the USEPA target risk range of 1 by 10(-4) to 1 by 10(-6). The non-cancer hazard from exposure to subsurface soil is below the USEPA target threshold of one, while the hazard from sediment exposure exceeds one. For the on-site youth visitors, this exposure pathway is not reasonably anticipated as the majority of the GCL is within an enclosure.

The lead concentrations identified in the sediment are not considered a health concern. Metals and explosives contamination is present along the entire length of the open trench and drainage ditch (2,200 ft). Additional ecological investigations of the open trench planned for spring 2005 found the trench to be completely dry. Alterations to its origin due to remediation and/or construction have rendered the trench unsuitable as a significant aquatic habitat or significant transport pathway.

An FS was approved by the USEPA for the site in August 2009. The original PP was submitted in January 2010.

A facility [the BRAC facility called Packaging, Handling, Storage and Transportation Center (PHS&T)] was built directly on a segment of the open part of the GCL. The Army proposed and the NJDEP and the USEPA agreed that the soils from underneath the footprint will be placed under an asphalt cover.

The USEPA had technically approved the NFA with monitoring of land use PP for 25 PTA sites within PICA 001, 006, 022, 085, 143, 146, 163, 171, 192, and 199 in a letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as a NFA as existing LUC prevent a different land use. The Army has agreed to notification and certification; however, because it is a NFA, no action is required including an RD or the implementation of LUCs.

This PP is expected to be publicly advertised in March of 2013 and the ROD signed by USEPA and Army by the end of the FY13. It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

Site ID: PICA-006
Site Name: GUNCOTTON LINE (SITE 16)
Alias: 16

An FS was submitted and approved by the regulators. The USEPA commented on the submitted PP requesting a risk table summary and other aspects.

The site is included in the PP for the PICA 1 LUC group (ARCADIS 25 site FS) and detailed in the summary table and associated figures.

CLEANUP/EXIT STRATEGY

It is expected that an NFA with monitoring of land use ROD for 25 PTA sites within PICA 001, 006, 022, 085, 143, 146, 163, 171, 192, and 199 will be signed this FY. There will be no requirement for a RD or a LUC plan since USEPA has agreed that existing LUCS are considered adequate.

The monitoring and certification required by USEPA to ensure the current land use and exposure scenarios for this site are maintained will be funded under program managment funding (PBC Picatinny)

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

Site ID: PICA-008
Site Name: INACT. ROCKET FUEL TEST Areas
Alias: 2, Group 3

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

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

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

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199502	201008
RD	201008	201012
RA(C)	200609	201401
RA(O)	201405	204009

RIP Date: 201405

RC Date: 204009

SITE DESCRIPTION

PICA-007 (RI site 1) and PICA-157 (RI site 4) have consolidated into PICA-008 (RI site 2). These sites are now known as Group 3. PICA-008 now represents funding associated with former PICA-007 and PICA-157 sites.

This 31-acre site includes Rocket Test Areas A, B, and C, that were leased to the Naval Air Rockets Test Station (NARTS) division of the Navy. The Navy entered into a sublease agreement with the Reaction Motors Division (RMD) of Thiokol Chemical Co. in 1947. Activities at this site discontinued in 1962. The sublease with RMD expired in 1968. RMD tested and evaluated rocket engines and their related components at the site. Other operations known to have occurred in these test areas include new and alternative rocket fuel development and engine redesign. The majority of the buildings have been decontaminated and demolished, and Test Areas B and C remain inactive and unimproved.

As part of the Phase II RI conducted in 1996, the following activities were performed: a geophysical survey, a soil-gas survey, installation of monitoring wells, excavation and sampling of test pits, and collection of soil, groundwater, surface water, and sediment samples. VOC groundwater contamination has been identified in the two aquifers beneath the site. The extent of the groundwater contamination in the shallow aquifer was defined during the Group 3 RI completed in 1998. The HHRA indicates that the risk and hazard to impacted site media are below the target risk level of 1 by 10(-4), but above the target hazard level of one. The primary pathway contributing to risk and hazard was dermal contact with groundwater. The primary chemical driving the cancer risk and non-cancer hazard was carbon tetrachloride. The shallow groundwater discharges to several ecologically sensitive ponds, brooks, and associated wetlands at the site. Surface water and sediment results have indicated levels of VOCs, ammonia, and metals above LOCs in these surface water bodies. Additional groundwater investigation and monitored natural attenuation (MNA) evaluation was completed in 2002, to fill specific data gaps to effectively evaluate remedial alternatives for the surface and groundwater contamination.

The FS addresses all media at RI sites 1, 2, and 4. At RI site 2, carbon tetrachloride, tetrachloroethylene (PCE), and corresponding breakdown products were contaminants of concern (COCs) in the groundwater. In surface water ammonia and metals were identified as COCs. In sediment several metals were identified as COCs. In surface soil, AOCs were developed for lead [4,410 milligrams per kilogram (mg/kg)] and zinc (1,550 mg/kg). Additional surface soil sampling was completed for the former location of Buildings 3513 and 3517 to investigate PCB-contaminated surface soil. After compliance averaging, it was determined that no RA was needed for the PCBs in this area. A pilot study, to test zero-valence iron, was completed in FY05 and a report was submitted to the regulators.

In 2003, PICA-007 and -157 were listed as RC in AEDB-R and will be addressed as part of PICA-008. As of summer 2006, site 2 is being used as a homeland defense training center.

The PP was publicly advertised in October 2009. The ROD was signed by both the USEPA and the Army and concurred on by the NJDEP. The soils were not addressed by this ROD which was a decision made by the IRP Team. Soils are now captured in the site 45 FS that proposes NFA and will close out. The soils will have no cost but the groundwater cleanup will continue under RAO.

Site ID: PICA-008
Site Name: INACT. ROCKET FUEL TEST Areas
Alias: 2, Group 3

The interim ROD addresses only groundwater and surface water at this consolidated site which includes bioremediation from emulsified oil, MNA and LUCs.

The IRAR, documenting RIP, was submitted in February 2010 and approved by the USEPA.

The USEPA agreed with the Army's five-year review completed in FY11 with protectiveness determinations for this site.

The risk from soils from the site is included in FS for PICA 11 LUC group of sites (45 site FS) PICA-11, -50, -75,-91, -97, -108, -122, -134, -135, -136, -162, -175, -200, -209).

CLEANUP/EXIT STRATEGY

Groundwater contaminated with VOCs was treated via injection of emulsified vegetable oil. MNA is being used after treatment. After remediation is complete, LUCs will be necessary to preclude residential land use. Surface water is also addressed by this ROD. Surface water sampling is included as a component of this remedy. Soil is addressed in the 45 site FS, which was submitted in October 2009.

A separate PP and ROD for soils will be required.

It is expected that the FS will be approved in FY13 or early-FY14, a PP will be publicly advertised and a ROD signed by January 2014.

The ROD is expected to be an NFA with monitoring of land use ROD as the site has acceptable risk and, therefore, would be consistent with the basis of the USEPA letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as a NFA as existing LUCs prevent a different land use.

The Army has agreed to the notification and certification as required by USEPA; however, because it is an NFA, no action is required to perform a RD or the implementation of LUCs.

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

Site ID: PICA-011
Site Name: BLDG 60 SATELITE WSTE ACCOM AREA(SITE122
Alias: 122

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

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

Media of Concern: Groundwater, Sediment, Soil

Phases	Start	End
PA	198707	198906
SI	198910	199103
RI/FS	199309	201401
RD	200604	201403
IRA	199906	200008
RA(C)	200604	201406

RIP Date: N/A

RC Date: 201406

SITE DESCRIPTION

In 1942, Building 60 was constructed adjacent to Bear Swamp Brook (BSB) as an environmental testing laboratory. Various types of testing conducted in the building include: ballistic air gun launch testing, drop testing, solar radiation testing, mechanical stress, shock, vibration, and jolt testing, and static load testing. The various testing equipment and machines at Building 60 use lubricating, hydraulic, and heating oils. Heating oils were formerly stored in Building 60-A which was located on the west side of Building 60. The recirculation water/steam is discharged into BSB via various pipes projecting out of the eastern wall of the building. These discharges were permitted through a NJPDES permit.

An RI was performed in 1994 that included a radiological survey, surface soil, subsurface soil, surface water, and sediment sampling as well as HHRA and ERAs. The radiological survey did not identify any AOCs. The HHRA determined that carcinogenic risk was between or above 1 by 10(-4) to 1 by 10(-6). The ERA determined that contaminants were detected but the communities were not affected and the habitat was highly altered by human activity. The RI recommended that additional sampling be completed to delineate areas of metals, PCB, and SVOC contamination above LOCs. Based on these recommendations and regulatory comment, a follow-on investigation was completed in 1997. This RI identified soil contaminated with SVOCs, PCBs, and metals and sediments contaminated with PCBs. In 1999, an EE/CA was written and in 2000 an IRA was performed for PCBs. A total of 387 cy of soil and sediment was removed from the site. Other areas of the site still contain soils contaminated with SVOCs and metals at moderate levels and PCBs above the residential standard. Groundwater at the site is addressed in the Area D area-wide groundwater FS.

The site is addressed by the ARCADIS PBC. An FS that included a small excavation was submitted in September 2009. The FS is on hold pending an informal dispute with USEPA if all NJ cleanup levels are all considered ARARs when the risk assessment indicates there is an unacceptable risk.

The issue should be resolved by the end of FY13 and a ROD is expected in January 2014.

The site is included in the five sites FS and includes PICA-149, PICA-011, PICA-131, PICA-097, PICA-107.

CLEANUP/EXIT STRATEGY

A ROD and an RD will be completed in FY14. A soils RA will be completed in FY14 and an NFA is anticipated.

This site is included in the IRP PBC (PBC Picatinny) through December 2014.

Site ID: PICA-013
Site Name: OPTS PROTO PROC FAC SITE BLDG 91(SITE78)
Alias: 78

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals, Polycyclic Aromatic Hydrocarbons (PAH), Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199606	201401
IRA	200604	201109
RA(C)	200604	201403
RA(O)	201402	202409

RIP Date: 201403

RC Date: 202409

SITE DESCRIPTION

Building 91 is located at the intersection of Fourth Avenue and South Sixth Street, in the southern portion of PTA. The building was built in 1942 as a storehouse and supply building. An optics laboratory was constructed in the north end of Building 91 in 1980, and since then has lost its mission. Operations carried out in the optics laboratory included a glass machine shop. A hazardous waste inventory lists Building 91 as containing a hazardous waste satellite area, where cleaning material and oily rags were stored in 1993 in a 55-gallon drum. Currently, the central portion of Building 91 is used as office space. The southern end is used for receiving and storage of many materials received at the arsenal.

Soil samples were taken in 1996. Based upon the results, RI activities were initiated in 1998 for VOCs, SVOCs, and metals in soil, surface water, and sediment. Three groundwater monitoring wells were installed as part of a closure report in 1999 upon removal of two heating oil underground storage tanks (USTs) (3,000 and 7,500 gallons each) on the eastern side of the building. Soil analysis indicates the presence of PAHs in exceedance of the LOCs. Surface water metals concentrations are in excess of the LOCs and sediment contains metals and PAHs at concentrations greater than LOC. Groundwater contamination includes VOC concentrations (two plumes) in excess of LOCs. In the RI submitted in 2003, the HHRA results worker scenario is 1 by 10(-4) and within the 1 by 10(-4) to 1 by 10(-6) range for an on-site youth visitor scenario. A pilot study (sodium lactate injection) was funded in FY03 to address VOCs in groundwater. The pilot study was completed in 2005. A screening level ERA (SLERA) conducted in 2004 determined that due to the limited habitat and the relatively low hazard quotients (HQs) (i.e., HQs less than 10), further ecological investigation was not required.

The principal causes for concern at this site are: (1) the discharge of VOCs from groundwater to GPB and levels in the groundwater above the established standards in groundwater and (2) low level contamination in soils.

The FS was approved by the USEPA and the NJDEP. The groundwater PP was publicly advertised in April 2010. The soils at the site will be addressed in a separate PP and ROD due to the NJ standards/ARAR issue. The soils portion of this site will be addressed in the 45 site FS.

The draft groundwater ROD was submitted in July 2010. Based on comments from the USEPA and the NJDEP a vapor intrusion evaluation was conducted at Building 91 in October 2010 and findings submitted in December 2010. In January 2011 both the USEPA and the NJDEP approved NFA with respect to vapor intrusion for this site. The final groundwater ROD was signed by the Army in March 2011 and includes MNA and LTM. The RD was approved in 2011 technically before ROD signature. The interim action ROD only adddressed groundwater at the site.

The 45 site FS for the soils at the site will be approved in FY13 and a ROD for NFA is expected by January 2014. The ROD is expected to be for NFA.

The risk from soils from the site is included in 45 site FS for PICA 11 LUC group(PICA-11, -50, -75, -91, -97, -108, -122, -134, -135, -136, -162, -175, -200, -209).

Site ID: PICA-013
Site Name: OPTS PROTO PROC FAC SITE BLDG 91(SITE78)
Alias: 78

The LTM costs are included in the IRP PBC.

CLEANUP/EXIT STRATEGY

This site is included in the IRP PBC (PBC Picatinny).

The remedy for the groundwater is MNA. Soil and sediment are included in the 45 site FS which was submitted October 2009.

LUCs and maintenance of existing cover are expected to be the remedy for the PAH-contaminated soil. LTM costs are included in the IRP PBC (PBC Picatinny).

Site ID: PICA-015
Site Name: LAKE DENMARK (SITE 54)
Alias: 54

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

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

Media of Concern: Sediment, Surface Water

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199606	201406
RD	201408	201412
RA(C)	201501	201506
LTM	201507	204409

RIP Date: N/A

RC Date: 201506

SITE DESCRIPTION

Lake Denmark, an artificial lake located in the northeastern portion of PTA, has a surface area of approximately 174 acres and an average depth of six to seven ft. It is part of PTA's service water source with the outfall from the lake flowing into Picatinny Lake. Surface water at Picatinny is not used as raw water for the potable system. Storage magazines, in the 1200 Area, are the only development around Lake Denmark. ANL reported Lake Denmark has a long history as a repository of munitions and their associated wastes. After the 1926 Lake Denmark explosion, munitions were reportedly dumped into the lake. ANL also discussed the possibility of Radiation Technology dumping waste into Lake Denmark. Lake Denmark has been used as an impact area for experimental mortar rounds and other explosive or pyrotechnic munitions. This site is currently inactive. In 1976 and 1981, chloroform was detected at a concentration above the surface water LOC in samples of the water from the outfall of Lake Denmark. In 1985, one water sample was collected from the Lake Denmark outfall and analyzed for pesticides/PCBs. No analytes of concern were detected in the sample.

Explosives, VOCs, SVOCs, pesticides/PCBs, anions, and metals analysis of soil was conducted as part of the 1996 PA/SI. Based upon results of the PA/SI, RI activities were conducted from 1998 to 1999 including VOCs, SVOCs, explosives, and metals analysis of surface water and sediment; targeted metals analysis of soils; and geophysical surveys.

Surface water and sediment analysis indicate the presence of metals in exceedance of LOC. A geophysical survey conducted as part of RI activities indicates three areas may contain metal deposits. HHRA results indicate risks and hazards are within the target levels. Based upon results of the RI, a SLERA was conducted in 2000. Results of the SLERA indicate the level of ecological risk present at Lake Denmark does not warrant a full ERA.

The FS was submitted in October 2009. This site is under the ARCADIS PBC until ROD.

A revised FS that included Lake Denmark was submitted in spring of 2012. A PP is expected to be submitted early in calendar year 2013.

CLEANUP/EXIT STRATEGY

The site is included in IRP PBC (PBC Picatinny) to completion of the ROD. A contract will need to be awarded in FY14 to implement the ROD.

This site is proposed for LUCs based on restrictions on fishing per the requirements from the USEPA.

Site ID: PICA-020
Site Name: PYROTECHNIC DEMO AREA (SITE 19)
Alias: 19

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals, Pesticides, Polychlorinated Biphenyls (PCB)

Media of Concern: Soil

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199309	200810
RD	200604	200811
RA(C)	200604	200811
LTM	200812	201609

RIP Date: N/A

RC Date: 200811

SITE DESCRIPTION

This site had been RC, but was reopened to incorporate all 13 sites in the IC ROD. The costs for the IC for all sites will be in this site.

These sites include: PICA-036, -070, -083, -088, -092, -095, -099, -100, -105, -110, -112, and -118.

The PP had been put out for public review in 2001, but the LUC issue held up the ROD until September 2008 when the ROD was signed.

The RD work plan regarding the LUCs was submitted and approved by the USEPA in November 2008. LUCs were implemented in 2008 and currently remain in place.

The RA report (RAR) was approved by the USEPA in December 2008. Certification reports have been submitted in 2009 through 2011.

The LTM of the LUCs will continue.

CLEANUP/EXIT STRATEGY

The LUCs will continue in FY14 in accordance with the approved RD plan.

The LTM costs will be included in the IRP PBC (PBC Picatinny) through December 2014. A follow-on contract will need to be awarded in FY14 to continue LTM through the five-year review scheduled in 2016.

Site ID: PICA-022
Site Name: POWER PLNT/HAZ WST TNKS/PROPELL PRD
Alias: 50

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals, Volatiles (VOC)

Media of Concern: Groundwater, Sediment

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199502	201310

RIP Date: N/A

RC Date: 201310

SITE DESCRIPTION

PICA-047 and -145 (Sites 63/65) have been consolidated into PICA-022. PICA-022 now represents funding associated with former sites PICA-047 and PICA-145.

The site is covered under the ARCADIS PBC.

Site 50 consists of Building 519, a former still house for storage of ether and alcohol, and Building 519-A, which formerly housed an inactive 3,800-gallon aboveground storage tank that was used to store spent alcohol. Building 519 and associated buildings were a single-base propellant manufacturing area. Operations at Building 519 also included the manufacture of ether. Three ASTs, with an approximate capacity of 3,800 gallons each, were used to store virgin ethyl alcohol, process wastes from explosives manufacturing, ether, and spent alcohol. Building 519 was deactivated in 1975; the ASTs and all associated piping were removed from Building 519-A at approximately the same time. Both buildings were subsequently demolished in 1995 as part of the Toxic and Energetics Cleanup Program (TECUP).

Analytical results of soil samples collected during the RCRA closure of Building 519-A detected levels of lead above its comparison criterion. Phase II RI activities were conducted at this site in 1996. Analytical results from the RI identified explosives and metals in the soil at concentrations above LOCs. Elevated concentrations of SVOCs and metals were also detected in sediment collected from a sump at Building 519. In addition, TCE was reported in one monitoring well in excess of its LOC.

Additional samples collected in 2001 have delineated the extent of the lead contamination in soil, and TCE contamination in groundwater. Results of the HHRA indicated risks and hazards from exposure to surface and subsurface soil are within or below the target levels. Results of the adult lead model indicate lead concentrations in subsurface soil may be a concern for the excavation worker. Based on the calculated environmental effects quotients (EEQs), there is little potential for adverse effects to occur to terrestrial receptors from soil exposure at the site. The suspected location of the former sump is currently a boulder field. As part of a facility-wide sump investigation initiated in 2003, the boulders at site 50 were removed and a test pit excavated in the area to locate any visual evidence of the sump. Neither stained soil nor odors were noted in the excavation. Post-excavation analytical results of soil samples collected from the excavation did not detect any LOC exceedances and the boulders were returned to the location.

An FS with PICA-001 was approved by the USEPA in August 2009. The original PP was submitted in January 2010. The USEPA provided comments during the review process in FY10 and FY11 that indicated that they would not be satisfied with only ICs and would require ECs.

The USEPA requested and Army submitted the "25 Site Table" that provided summaries of the sites so the USEPA and the NJDEP could determine if the LUCs proposed for the sites comply with the USEPA policy.

The USEPA had technically approved the NFA with monitoring of land use PP for 25 PTA sites within PICA 001, 006, 022, 085, 143, 146, 163, 171, 192, and 199 in a letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as an NFA as existing LUCs prevent a different land use. The Army has agreed to notification and certification; however, because it is an NFA, no action is required including a RD or the implementation of LUCs.

Site ID: PICA-022
Site Name: POWER PLNT/HAZ WST TNKS/PROPELL PRD
Alias: 50

This PP is expected to be publicly advertised in March of 2013 and the ROD signed by the USEPA and Army by the end of the FY13. It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

The site is included in the PP for the PICA 1 LUC group (ARCADIS 25 site FS) and detailed in the summary table and associated figures.

CLEANUP/EXIT STRATEGY

It is expected that an NFA with monitoring of land use ROD for 25 PTA sites within PICA 001, 006, 022, 085, 143, 146, 163, 171, 192, and 199 will be signed this FY. There will be no requirement for a RD or a LUC plan since USEPA has agreed that existing LUCS are considered adequate.

The monitoring and certification required by USEPA to ensure the current land use and exposure scenarios for this site are maintained will be funded under program management funding.

Site ID: PICA-050
Site Name: FORMER REACT MTRS/RCKT FUEL TST A 1500
Alias: 3, Group 3

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

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

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

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199502	201401
IRA	200102	200203

RIP Date: N/A

RC Date: 201401

SITE DESCRIPTION

This 20-acre site consists of the 1500 series buildings and is divided into the western explosives area and the eastern pyrotechnics area. From the early-1950s up until 1958, liquid fuel missiles were tested in the eastern pyrotechnics area. After 1958 additional buildings were constructed for mixing, pressing, and filling of various pyrotechnic compounds into flares, fuses, and primers. The western explosives area was constructed in the late-1940s and was used for the large-scale storage, production, conditioning, loading, and testing of pyrotechnics, explosives, and solid rocket propellants from 1947 through the early-1960s. The eastern and western explosives areas are currently used for storage, assembly, research, development, and testing of HEs, propellants, and projectiles.

The 1996 Phase II RI involved the performance of a radiological survey, installation of monitoring wells, and collection of soil, groundwater, surface water, and sediment samples at the site. The RI identified explosives in groundwater downgradient of the Building 1505 test range; including RDX in excess of its LOC. Lead was detected above its LOC in a sediment sample associated with a dry well. SVOCs and metals have been detected at elevated levels in surface water and sediment samples collected from the swamp behind Building 1515 resulting in ecological concerns for the area. Additional RI activities performed in 2000 included the installation of an additional well and collection of additional soil, groundwater, and sediment samples. Results of this investigation successfully delineated the extent of RDX in the groundwater and characterized the lead contamination. The UST was removed in FY01. Estimated cancer risks are below or within the USEPA's target range of 1 by 10(-4) to 1 by 10(-6) for all exposures scenarios. The estimated non-cancer hazards are all below the USEPA's target threshold of one. A suspected dry well and associated lead-contaminated soil were removed in 2003. An additional two cy of lead contaminated soil were removed in 2004 as part of a facility-wide lead removal action.

The site is addressed by the ARCADIS PBC contract. An FS was submitted in October 2009 that included this site.

The site is included in FS for PICA 11 LUC group of sites, 45 site FS, (PICA-11, -50, -75, -91, -97, -108, -122, -134, -135, -136, -162, -175, -200, -209).

A PP and a ROD will be completed under the Arcadis PBC. The ROD is expected to be a NFA with monitoring of land use ROD as the site has acceptable risk and would therefore be consistent with the basis of the USEPA letter dated Nov. 27, 2012.

In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as a NFA as existing LUCs prevent a different land use.

The Army has agreed to the notification and certification as required by USEPA; however, because it is an NFA, no action is required for performing an RD or the implementation of LUCs.

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

CLEANUP/EXIT STRATEGY

A PP and an NFA ROD will be completed in FY14.

Site ID: PICA-050

Site Name: FORMER REACT MTRS/RCKT FUEL TST A 1500

Alias: 3, Group 3

Site ID: PICA-057
Site Name: PICATINNY LAKE (SITE 53)
Alias: PICA-057

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals

Media of Concern: Sediment, Soil, Surface Water

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199502	201406
RD	201408	201412
RA(C)	201501	201506
LTM	201507	204409

RIP Date: N/A

RC Date: 201506

SITE DESCRIPTION

Picatinny Lake, located at the geographic center of PTA, was formed in the 1880s by damming GPB. PTA Lake is approximately 118 acres and approximately 5,200 ft long by 1,000 ft wide. The lake has a maximum depth of 20 ft and contains approximately 165 million gallons of water. Picatinny Lake is a source of non-potable water used for production-related purposes and firefighting.

From 1985 until 1988 PTA discharged treated process wastewater and cooling water to Picatinny Lake under a NJPDES permit. Since 1989, only non-contact cooling water has been discharged to the lake. Many active, inactive, and demolished buildings surround the lake. Surrounding land use includes propellant and munitions R&D, production, and storage; steam and electric power generation; chemical laboratories, and a betatron and x-ray laboratory. Previous land use includes smokeless powder production and testing.

Numerous potential sources of contamination have been documented around the lake, including its use as an impact area for experimental mortar rounds; storage of smokeless powder and explosives underwater; discharge or disposal of explosives and debris into the lake; pyrotechnic testing on Flare Island; explosive-related accidents at the surrounding buildings; oil spills, wastewater discharges or sewage overflows.

Phase II RI and ERA activities included the performance of geophysical surveys, the collection of 23 surface water and sediment samples, the performance of surface water and sediment bioassays, the completion of benthic macroinvertebrate and fish surveys, and the chemical analysis of fish tissue samples. Surface water and sediment contamination was identified throughout the lake. The HHRA conducted with the RI evaluated an industrial research worker's exposure to surface water. The estimated chemical and radiological risks are below the USEPA's target cancer risk range, and the hazards are below the target threshold of one. The available ecological evidence suggests that surface water does not pose a risk to ecological receptors; however, the sediment data indicated that there is potential for ecological contaminants of potential concern (COPCs) to adversely affect benthic receptors.

Results from a fish consumption HHRA for the PTA fishable water bodies indicated hazards above the USEPA's target threshold of one for Picatinny Lake. Thus, PTA instituted fish consumption advisories, as recommended by the NJDEP, for anglers using Picatinny Lake and other bodies of water at PTA.

The FS was submitted in October 2009. The site is addressed by the ARCADIS PBC only to the ROD.

Sediment removal near RI concept site 40 (PICA-079) that was proposed in the site 40 RI process will not be completed based on 2011 sediment samples that show no result higher than LOCs. NJDEP had requested additional sampling and the sampling took place in early-FY12. Additional sampling may be required and NFA may not be required.

A revised FS that included Lake PTA was submitted to regulators in spring of 2012. The regulators have requested additional

work relating to this which is anticipated to begin in spring 2013.

The UXO at this site will be addressed by the MMRP program.

CLEANUP/EXIT STRATEGY

An FS, PP and a ROD will be completed in FY14. The site is included in the IRP PBC through December 2014. A contract will need to be awarded in FY14 to initiate the ROD's chosen remedy.

IC's will be the chosen remedy because of fishing restrictions required by USEPA.

Site ID: PICA-058
Site Name: 600 HILL GROUNDWATER PLUME
Alias: MunitiPit

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Explosives, Metals, Munitions and explosives of concern (MEC), Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199606	201410
RD	201502	201504
RA(C)	201504	201510
LTM	201511	204510

RIP Date: N/A

RC Date: 201511

SITE DESCRIPTION

This site is now defined as the contaminated groundwater beneath PICA-058 and adjacent sites

The Munitions Waste Pit, Site 12, is located in the northwestern portion of PTA, near former Building 656. The site was operated for evaluating munitions from approximately 1955 until the mid-1980s. Historical practices consisted of testing munitions. Many ammunition fragments were projected out from the site and were never recovered. According to PTA personnel, from 1965 to the present no munitions were disposed of at the site.

In the late-1990s, a large amount of rock and fill dirt was placed from a nearby construction site.

This site is now defined as the contaminated groundwater beneath PICA-058 and adjacent sites. In the early-1990s, a production well was installed to serve the advanced warhead development facility, Building 660. Analysis of groundwater from this well indicated contamination with TCE and low levels of methyl tertbutyl ether (MTBE), freon, and toluene. Surface water and groundwater sampling of monitoring wells in the 600 Area identified levels of RDX in surface water and groundwater. An additional investigation was performed to determine the source of the RDX contamination in the surface water and groundwater in the Building 650 area. The investigation delineated the contamination and the regulators concurred that no further investigation or action was needed for RDX.

A groundwater RI was initiated for this site in 2004. This investigation revealed higher concentrations of TCE [170 parts per billion (ppb)] beneath PICA-058. Additional investigations have identified RDX contamination in surface water and have delineated the extent of the TCE contamination in the groundwater. A risk assessment for groundwater exposure at the site has been completed.

Risk assessment results indicate acceptable levels of risk cancer risk within the target risk range. The HHRA evaluated the following hypothetical risk scenarios to include industrial research workers and construction excavation workers. These hypothetical scenarios evaluated groundwater, surface water, and indoor air. Maximum potential risk from all pathways was 0.0051.1 by 10(-5) in the industrial research worker scenario. Maximum hazard from all pathways was 0.0057 in the industrial worker scenario.

This site is not covered under the PBC.

The FS was approved by the USEPA in March 2010 and the PP was submitted in spring 2010.

Upon review of the PP, USEPA requested both an investigation to determine if a burial area represents a continuing source of groundwater contamination and a vapor intrusion investigation for building 660.

The results of the trenching did reveal a burial area. the burial area contained not only on MEC and MEC related, item but drums labeled TCE and soils down 25 ft from the surface were contaminated with ppms levels of TCE. This was determined to be the

source area for the TCE plume.

A revised FS, with the results of the vapor intrusion study, the trenching investigation and additional groundwater monitoring results, was submitted to the regulators in spring of 2013 and expected to be approved by the regulators by the end of the FY. The FS included two additional alternatives to address the source of the TCE in the landfill.

Based on its review of the PP, the USEPA requested both an investigation to determine if a burial area represents a continuing source of groundwater contamination despite earlier investigations in the same area and a vapor intrusion investigation at the building in the 600 area. The results of these investigations are to be included in an FS addendum and the PP modified and ROD developed accordingly. The investigation work plan was approved but the trenching investigation to find the source was delayed in FY11 because of safety issues. The work occurred in spring of 2012.

CLEANUP/EXIT STRATEGY

A ROD and RD will be completed after the PP is publicly advertised. A new PBC contract is required to implement the ROD.

The preferred remedial alternative involves TCE source removal, 10 years of MNA polishing, and ICs. LTM will include 20 years of monitoring.

Site ID: PICA-065
Site Name: POST FARM LANDFILL (SITE 23)
Alias: PICA-065

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

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

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199105	200505
RD	200506	200610
IRA	199112	199301
RA(C)	200604	200708
LTM	200710	201609

RIP Date: N/A

RC Date: 200709

SITE DESCRIPTION

The Post Farm Landfill consists of 10.3 acres located along the top of the unnamed hill that forms the southeastern boundary of PTA. It contains a borrow pit near the central portion of the site, and two landfilled areas where drums and other materials were buried. During the 1950s, the site was used mostly as a source of borrow materials. In the 1960s, landfilling activities began in the southern and northern area of the site. These areas are referred to as the northern Drum Burial Area (DBA) and southern DBA. The DBAs reportedly received fly ash from coal burning operations, paint stripping wastes, phenols, and spent explosive-laden hydraulic oils in containers or as free liquid.

A PA was performed in 1991 that recommended an SI and NTCRA. In 1992, an NTCRA was performed to remove buried containers at the site. During the removal action, small containers, garbage cans, batteries, and drums were removed and disposed of off-site. Post excavation sampling and exploratory trench sampling were also completed as part of the action. The trench investigation determined that all buried containers had likely been removed from the site. The last phase of the action included placing at least six to 18 inches of native soil over the former burial areas.

An RI was completed in 1994 with additional sampling in 1996-1997. The 1994 HHRA indicated that carcinogenic risk was in the range of 1 by 10(-4) to 1 by 10(-6) from PAHs, PCBs, and dioxins/furans. This HHRA was based on a limited number of samples. The 1996/1997 RI included completing soil borings, installing monitoring wells, collecting surface soil, sediment, surface water, and groundwater samples, and completing a fracture trace analysis. Results indicate moderate criteria exceedances in surface soil for metals and SVOCs, in subsurface soil and sediment for metals, and in groundwater for VOCs, dioxins/furans, metals, and radionuclides. The detections of dioxins/furans were not reproduced in the later 1997 sampling event.

In 2000, an FS was completed which evaluated excavation and disposal, on-site fixation, capping, and ICs. The FS recommendation was for ICs and long-term groundwater monitoring. The USEPA and the NJDEP approved the FS. A PP was finalized and a public meeting was held in December 2003. A ROD was signed by the PTA Garrison Commander in September 2004 and by the USEPA in December 2004. The USEPA and the NJDEP approved the RD in December 2006.

Surface soil sampling conducted in May 2007 confirmed that previously detected concentrations of metals and SVOCs in soil were isolated in nature and the existing vegetative cover is sufficient. Quarterly groundwater monitoring for target analyte list (TAL) metals, VOCs, and radiological parameters was performed as part of the long-term monitoring program in 2007. In 2008, groundwater monitoring was reduced to annual sampling per the approved exit strategy in the RD. Annual reports continue based on sampling results.

CLEANUP/EXIT STRATEGY

The LUCs and groundwater monitoring will continue in FY14 in accordance with the approved RD plan.

Site ID: PICA-065
Site Name: POST FARM LANDFILL (SITE 23)
Alias: PICA-065

The LTM costs will be included in the IRP PBC (PBC Picatinny) through December 2014. A follow-on contract will need to be awarded in FY14 to continue LTM through the five-year review scheduled in 2016.

Site ID: PICA-066
Site Name: SANITARY LANDFILL(NEAR SITE 20)SITE 24
Alias: PICA-066

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals, Pesticides, Polychlorinated Biphenyls (PCB)

Media of Concern: Soil

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199309	200206
RD	200307	200308
RA(C)	200308	200309
LTM	200309	203309

RIP Date: N/A

RC Date: 200309

SITE DESCRIPTION

Site 24 occupies approximately 28 acres adjacent to the southern boundary in the southwestern corner of the arsenal. Records indicate that sanitary waste, fly ash, ordnance, industrial wastes and wastewater treatment plant sludge were dumped on a portion of the site. PICA-066 covers all environmental media at this site with the exception of groundwater. Site groundwater is being addressed in PICA-205.

A 1994 RI included geophysical, radiological, and soil gas surveys in addition to surface soil, subsurface soil, surface water/sediment, and groundwater samples analyzed for VOCs, BNAs, metals, cyanide, explosives, pesticides, PCBs, dioxins/furans, and radiologicals. Metals, PCBs, and pesticides were detected above surface soil LOCs. VOCs and metals were detected above surface water LOCs. Metals, cyanide, and pesticides were detected above sediment LOCs. The HHRA determined that the carcinogenic risk fell between or exceeded the 1 by 10(-4) to 1 by 10(-6) risk range from arsenic, beryllium, PCBs, and dioxins/furans. The HI did not exceed one. Additional RI activity was completed in 1997 including soil gas survey, geoprobe groundwater sampling, surface soil sampling, subsurface soil sampling, and surface water sediment sampling. Samples were analyzed for VOCs, SVOCs, pesticides, PCBs, and metals. Surface soil LOCs were exceeded for pesticides, PCBs, and metals. This sampling event included a large sampling grid to completely delineate PCB contamination of surface soil.

In 2000, an FS was conducted that included a BERA that determined that exposure to lead and dichloro-diphenyl-trichloroethane (DDT) in soil could lead to elevated hazards for avian species. The FS also selected PCBs as a COC based on risk to human health. Site-specific remediation goals (RGs) were developed for these compounds. The FS examined a vegetative soil cover, an asphalt cover, and excavation and disposal of soils contaminated with PCBs above NJDEP criteria and lead and DDT above a site-specific ecological action level. A PP was completed for this site and public notice was completed in July 2001. A ROD was prepared in summer 2001 and signed in spring 2002. In order to complete the design of the soil cover, additional delineation sampling was completed in summer 2001. Some of these samples contained PCBs at much greater concentrations (3,500 mg/kg) than were seen in the 1997 soil grid sampling (297 mg/kg). Soils containing PCBs at concentrations over 297 mg/kg were excavated and disposed of off-site. The vegetated soil cover was completed in 2003. The wetlands that were destroyed by the capping were replaced with an enhanced wetland pursuant to the wetland permit-equivalent for the action.

LUC certification reports have been submitted annually. The site is covered under the ARCADIS PBC.

CLEANUP/EXIT STRATEGY

This site is included in the Arcadis PBC through December 2014. A follow-on contract will need to be awarded in FY14 to continue LTM through the five-year review scheduled in 2016.

Cap maintenance and ICs will be maintained in accordance with the RD.

Site ID: PICA-067
Site Name: SANITIARY LANDFILL(NEAR SITE 26)SITE 25
Alias: PICA-067

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals, Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern: Soil

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199309	200708
RD	200604	200708
RA(C)	200604	200709
LTM	200709	203709

RIP Date: N/A

RC Date: 200709

SITE DESCRIPTION

Site 25 consists of about eight acres and is located within the central valley of PTA. The area has been divided into four sections; the southern borrow area, the landfill area, the Dredge Pile (RI site 26, PICA-068) and the northeast area. PICA-068, the Dredge Pile, has been combined with this site (PICA-067). All issues associated with the Dredge Pile will be addressed under this site. Therefore, PICA-068 is considered RC. The southern borrow area consists of a two-acre grass-covered clearing formerly used for landfilling. The Dredge Pile encompasses about 2000 square ft, near the center of the site and is about 15 to 20 ft high. A variety of wastes were disposed of at site 25 from the 1940s through the 1970s. These wastes included rubbish, industrial wastes, shells, and sewage treatment plant sludge. The landfill was closed and covered in 1972. The site is currently inactive.

An RI was completed for the site in 1994. The field portion of this RI consisted of a geophysical survey, radiological survey, soil gas survey, soil sampling, test pitting, monitor well installation, and groundwater sampling. An HHRA and ERA were also conducted a part of the RI. The HHRA determined that the cancer risk was between 1 by 10(-4) and 1 by 10(-6) mainly associated with PAHs. The RI report concluded that the site should proceed to FS to address human health risk associated with SVOCs, dioxins/furans, metals, and PCBs. Ecological risk modeling indicated the potential for impact to terrestrial species from metals.

An FS was initiated to address these issues, but was stopped due to inadequate delineation of soil contamination and marginal risk associated with the site. In order to facilitate the performance of the FS, additional delineation of PAH contaminated soil was performed in 1997 to delineate PAH contamination in the northeast corner of the site. To determine the best course of action in light of all data and the level of risk associated with the site, a risk management plan was drafted in 2000. The risk management plan determined that human health risk resulting from PAH contaminated soils was within the risk range 1 by 10(-4) to 1 by 10(-6). It also determined that metals and pesticide-contaminated soils could potentially drive ecological risk. Based on these concerns, the risk management plan recommended that an FS be performed.

The FS, which was finalized in 2003, recommended extending a parking lot to cover the PAH-contaminated soil. The PP and public meeting for the site were completed in December 2004. The ROD for the site was submitted to the regulators in June 2005 and resubmitted after comments from the USEPA; the preferred remedy in the revised ROD was revised to a vegetative soil cover in lieu of an asphalt cover. The revised ROD was approved by the USEPA and was signed in July 2007. In September 2007 a soil cover was constructed at the site. The RAR report and certification reports have been provided annually and have been approved.

CLEANUP/EXIT STRATEGY

The LTM at the site will be continued through 2037. Costs are captured under the IRP PBC (PBC Picatinny) through 2014. A follow-on contract will need to be awarded in FY14.

Site ID: PICA-071
Site Name: DRUM STRG AREA(B31 YARD) SITE 29
Alias: PICA-071

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals, Petroleum, Oil and Lubricants (POL), Polychlorinated Biphenyls (PCB)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199309	201401

RIP Date: N/A

RC Date: 201401

SITE DESCRIPTION

Site 29 is a former drum storage area located in an outside courtyard between wings 1 and 2 near the northwest corner of Building 31. Building 31 has two stories, a concrete foundation, and consists of five wings with three courtyards. Building 31 was a metal workshop containing various types of equipment including lathes, milling machines, and drill presses. Operation of these machines generated cutting oils and machine oils, which were collected in 55-gallon drums that were stored outside the building.

In 1989, an SI was conducted. State criteria were exceeded for metals, VOCs, BNAs, and TPH. An RI was conducted in 1994. No petroleum related contaminants were detected in the RI sampling. Under the RCRA program, a tank was removed and confirmatory sampling conducted. The confirmatory sampling consisted of sampling in the tank excavation and advancing soil borings in the area of contamination identified in the 1989 site investigation. In the late-1990s, follow-up investigation took place to further address issues discovered in the 1989 site investigation. All tanks associated with this site have been removed. All of the courtyards at Building 31 are contaminated with PCBs, petroleum, and SVOCs. Some wells at the site are also contaminated with petroleum.

Building 31 has been transformed into an armament software center. Regulators have been notified of the situation; institutional and engineering controls will be integrated with the new facility.

Approximately 500 tons of petroleum contaminated soil [six to 10 ft below ground surface (bgs)] located off the northwest corner of Building 31 was removed in early-FY04. Soil in the courtyards has been covered over with concrete, asphalt, or coarse gravel.

The RI was completed in 2005 and approved by the regulators. The FS was submitted to the regulators in spring 2006. The USEPA and the NJDEP have provided comments; however, the continuation of the FS will be integrated into a site-wide FS ARCADIS will be submitting.

In 2003, PICA-084 was listed as RC in the AEDB-R and will be addressed under PICA-071.

An FS that included this site was submitted to the regulators in October 2009.

The site is included in FS for PICA 11 LUC group of sites, 45 Site FS (PICA-11, -50, -75, -91, -97, -108, -122, -134, -135, -136, -162, -175, -200, -209).

It is expected that the FS will be approved in FY13 or early-FY14, a PP will be publicly advertised and a ROD signed by January 2014.

The ROD is expected to be an NFA with monitoring of land use ROD as the site has acceptable risk and would, therefore, be consistent with the basis of the USEPA letter dated Nov. 27, 2012.

In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as an NFA as existing LUCs prevent a different land use.

The Army has agreed to the notification and certification as required by USEPA; however, because it is an NFA, no action is

required to perform an RD or the implementation of LUCs.

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

CLEANUP/EXIT STRATEGY

A PP and an NFA ROD will be completed by the PBC contractor (PBC Picatinny) in FY14.

Site ID: PICA-072
Site Name: FORMER GAS STATION/ DRMO(SITE 31)
Alias: PICA-072

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

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

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

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199309	200907
RD	200907	200909
IRA	199304	199305
RA(C)	200909	200910
LTM	200911	201609

RIP Date: N/A

RC Date: 200910

SITE DESCRIPTION

This site includes five buildings located on six acres of land. The site has been used as a storage yard for disposal, salvage, and sale of excess materials. A variety of items including materials used in the manufacturing and testing of explosives, pyrotechnics, and munitions, potential PCB-containing transformers, scrap metal, used batteries, and motor vehicles were stored in the area. PICA-072 includes all environmental media at RI sites 31 and 101 (formerly PICA-116).

A 1989 site investigation indicated that surface soils were contaminated with oil, grease, PCBs, metals, and BNAs above LOC. Sediments were contaminated with oil, grease, BNAs, and metals.

In 1991, a RCRA closure investigation was performed on an asphalt area adjacent to Building 314 formerly used to store batteries. Closure verification samples (surface soil samples and chip samples) were collected and analyzed for VOCs and PP metals. Analytical results indicted the storage of batteries may have been a source of metals contamination in surface soil. In 1991 a RCRA closure investigation was conducted on a room inside the building formerly used to store photographic film. Also in 1991, a RCRA closure verification sampling event was conducted at Building 314-E to evaluate an area used for storage of discarded lead batteries and equipment. Two of the three areas were pressure washed and rinsed and chip samples were collected. The RCRA closure report for all three investigated areas was approved by the NJDEP.

In 1993, an investigation was conducted to evaluate the potential for contamination of soil and groundwater from metals, TPH, benzene, toluene, ethylbenzene, xylene (BTEX), and PCBs. PAHs, metals, and PCBs were detected above LOC in soil, and metals were detected above LOC in groundwater.

A follow-up investigation was conducted in 2000. Surface soil grid samples were collected for VOCs, SVOCs, metals, PCBs, dioxins, and explosives. Six AOCs were found based on exceedance levels of metals, PCBs, and PAHs. Soil contamination at this site is widespread and contains "hot-spots" of metals and PCBs. Maximum levels of contamination in surface soil include Aroclor 1260 5,100 mg/kg, copper 68,500 mg/kg, lead 35,900 mg/kg, and zinc at 53,800 mg/kg. Maximum levels of metals in site sediment include copper at 6,580 mg/kg and lead at 3,330 mg/kg. Additional sampling was conducted in 2001 to delineate PCB contamination adjacent to Building 314-D. Extensive PCB-contaminated soil was detected in the area. The estimated risk and hazards for the industrial research worker exceed the target levels. The primary risk and hazard drivers are PCBs. In addition, lead is deemed a concern at the site.

In 2003, PICA-116 was listed as RC in AEDB-R and will be addressed under PICA-072.

A final FS has been completed and a PP was submitted to the regulators in December 2006.

Public notice of the PP was released in October 2007. The ROD was signed in June 2009 and the RD work plan at the same time period. Completed in 2009, the selected action included excavation and off-site disposal of lead and PCB contaminated soil, on-site consolidation of PAH, As, PCB, and metal contaminated soil (RCRA nonhazardous), installation of an asphalt cap, soil cover,

and implementation of LUCs. Simultaneously, a TCRA of improved conventional weapons was completed on a portion of this site under the associated MMRP site.

At PICA-072 and PICA-116, the remedy includes continued maintenance of the asphalt cap, soil cover and LUCs.

To address surface water and sediment contamination, long-term chemical and biological monitoring has been implemented as part of PICA 193 and groundwater monitoring will be incorporated into the Mid-Valley groundwater study (site PICA 204).

CLEANUP/EXIT STRATEGY

The LTM costs are included in the IRP PBC (PBC Picatinny) through December 2014. A follow-on contract will need to be awarded in FY14 to continue LTM through the five-year review scheduled in 2016.

Site ID: PICA-075
Site Name: EQPMT & WASTE STORAGE IN 3000-AREA
Alias: PICA-075

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

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

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199606	201401

RIP Date: N/A

RC Date: 201401

SITE DESCRIPTION

Building 3100 was constructed as a storage facility in 1942. From 1942 until the early-1950s Building 3100 was used for explosives storage, and was serviced by a rail line on the west side of the building. From the early-1950s until 1975, the building was utilized as an environmental test building. Materials tested in the environmental lab included: fully loaded rocket components and ordnance items, such as solid propellant boosters and sustainers, prepackaged liquid rocket engines, and gas generators; however, no exposed explosives were tested.

Use of the building, as a waste storage facility, began in 1981 under interim status until March 1991, when PTA was granted a hazardous waste facility permit. Building 3100 is currently the only RCRA-permitted hazardous waste storage facility at PTA. In February 2000 a flammable storage locker was added to the building. Operations in the building include sorting and overpacking of waste materials that are picked up from various organizations throughout the post. The storage of oxidizers, poisons, corrosives and flammables are permitted in the building. There are no floor drains in the building.

In 1996, a PA/SI was conducted for Building 3100. Soil samples were analyzed for explosives, VOCs, SVOCs, pesticides/PCBs, anions, and metals. One soil sample contained beryllium at a concentration equal to the LOCs. RI activities were initiated in 2000 for the analysis of VOCs, SVOCs, TAL metals, cyanide, anions, explosives, and ethylene glycol. Metals were detected at concentrations marginally above LOC in soil. In 2001, additional subsurface soil samples were collected around Building 3100 as part of the Mid-Valley groundwater investigation. The samples, which were analyzed for VOCs, did not contain any LOC exceedances. No additional sampling is planned for this site. The field investigations and RSA results from the BERA indicated that effects from exposure, if any, were not impacting the local populations of small mammals or birds. All samples collected at this site are associated with the adjacent Shell Burial Area.

In 2003, PICA-086, -141, and -191 were listed in AEDB-R as RC and will be addressed under PICA-075.

The site is addressed by the ARCADIS PBC contract. An FS was submitted in October 2009 that included this site.

The site is included in 45 site FS for PICA 11 LUC group of sites (PICA -11, -50, -75, -91, -97, -108, -122, -134, -135, -136, -162, -175, -200, -209).

CLEANUP/EXIT STRATEGY

The 45 site FS was submitted in October 2009. A PP and a ROD will be completed for PICA-075, -086, -141, and -191. The site is included in the sitewide site, PBC Picatinny. It is expected that the FS will be approved in FY13 or early-FY 14, a PP will be publicly advertised and a ROD signed by January 2014.

The ROD is expected to be an NFA with monitoring of land use ROD as the site has acceptable risk and would, therefore, be consistent with the basis of the USEPA letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as an NFA as existing LUCs prevent a different land use.

Site ID: PICA-075
Site Name: EQPMT & WASTE STORAGE IN 3000-AREA
Alias: PICA-075

The Army has agreed to the notification and certification as required by USEPA; however because it is an NFA, no action is required to perform an RD or the implementation of LUCs.

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

Site ID: PICA-076
Site Name: FORM METL PLATG WSTWTR FAC/LAGOONS B-24
Alias: PICA-076

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Surface Water

Phases	Start	End
PA	197607	198105
SI	198504	199003
RI/FS	199105	200409
RD	200410	200612
IRA	199209	200609
RA(C)	200604	200709
RA(O)	200604	204209

RIP Date: 200709

RC Date: 204209

SITE DESCRIPTION

Site 37 consists of a former wastewater treatment facility and lagoons associated the metal plating activities formerly housed in Building 24. The lagoons were suspected to have leaked, and were closed under interim status in 1981. This closure included excavation of 317 cy of soil. Final closure of the Building 24 surface lagoons occurred in 1991 including demolition of the concrete basins and excavation of additional soils. The action removed 660 cy of soil and 240 cy of concrete. The regulators have accepted this closure. A dry well which never had interim status was constructed in 1961, and was closed in 1991 in accordance with NJ hazardous waste regulations. The closure of the dry well has been accepted by the regulators.

There have been numerous investigations of the TCE plume at this site. Two wells were sampled for metals and anions from 1958 to 1985. From 1981 to 1985, 21 wells were installed and sampled for VOCs, phenol, metals, anions, and cyanide. LOCs were exceeded for metals and VOCs. In 1986, a drive point investigation was completed and indicated high levels of VOCs. In 1987, streambed piezometers and 33 additional wells were sampled for VOCs and metals. VOCs were determined to be discharging to GPB. In 1989, 23 monitoring wells were installed and sampled for VOCs. Between 1990 and 1992, an additional 69 samples were collected from the wells. In 1992 an IRA was initiated when a hydraulic barrier pump-and-treat (P&T) system was installed to impede the flow of TCE to GPB. This plant has been in operation since 1992, and wells have been sampled for VOCs quarterly from 1992 to 2000 and are currently sampled semiannually. In 1994 an RI was completed and a round of samples was collected from existing wells and one new well. The 1994 HHRA found cancer risk between or above the 1 by 10(-4) to 1 by 10(-6) range (assumes direct groundwater use). Pilot scale remedial technology studies have been carried out by the USGS including air sparging, methane sparging, and surfactant treatment.

In 1997, an FS data gap investigation determined the applicability of MNA. An FS and flow and transport model were completed. The FS examined P&T, six phase heating with soil vapor extraction (SVE), accelerated bioremediation, MNA, and reactive barrier wall. The FS determined that MNA would take an extended period (more than 100 years). A revision to the draft FS that examined more aggressive treatment alternatives was submitted in summer 2001. Based on this analysis, the preferred alternative is the reactive barrier wall. Two pilot studies [propane and hydrogen releasing compound (HRC)] have been completed, to investigate potential techniques to address residual accessible source area contamination, thereby reducing overall cleanup times. Additionally, a geotechnical investigation was performed in fall 2002 and will be included in the permeable reactive barrier (PRB) design. The FS for Area D groundwater was finalized in May 2003 and has been accepted by the regulators. The PP was finalized in July 2003 and sent to public notice. A ROD was signed by the USEPA in September 2004. A concept RD was submitted in October 2006. A final RD was submitted in January 2007. A pre-design investigation was implemented in winter 2007.

A permeable reactive wall was installed in spring 2007. The interim action P&T system was stopped and mothballed based on the requirements in the ROD. MNA sampling as a component of this remedy to address groundwater and compliance monitoring of GPB was implemented in September 2007. Indoor air sampling was also completed in accordance with the ROD. In 2010, the P&T system was decommissioned and dismantled.

The RA report and subsequent annual reports have all been submitted.

Site ID: PICA-076

Site Name: FORM METL PLATG WSTWTR FAC/LAGOONS B-24

Alias: PICA-076

The site is included in the PBC. The LTM costs are included in the site-wide costs for the PBC site. Decommissioning of the P&T facility was completed in 2010.

CLEANUP/EXIT STRATEGY

The MNA for the groundwater and compliance sampling of the surface water will continue as well as LUCs. The MNA will be ongoing for over the next 30 years.

Site ID: PICA-077
Site Name: Area E Groundwater (Site 38)
Alias: PICA-077

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA	197607	198105
SI	198504	199005
RI/FS	199105	200709
RD	200604	200709
RA(C)	200604	200809
LTM	200810	204409

RIP Date: N/A

RC Date: 200809

SITE DESCRIPTION

Site 38 consists of the former underground treatment tanks within Building 95 and Area E groundwater. RI sites 38 and 22 have been combined. PICA-077 covers all environmental media at these sites. Building 95 served as a circuit board etching operation from 1961 to 1988. Manufacturing at Building 95 consisted of electroplating operations. The wastewater was discharged into the treatment system where it was stored and treated in nine USTs. These tanks were constructed of concrete, and in some cases lined with brick and/or epoxy lining systems. Integrity testing of the seven tanks was conducted in 1988. All tanks failed and were removed from service. As a result, the nine USTs were filled with concrete as part of RCRA closure activities in 1991. The NJDEP approved these activities.

There have been numerous studies conducted at site 38 as well as on Area E groundwater. Only the significant investigations are summarized here. Site 38 sampling included confirmatory samples collected during the RCRA closure of the tanks and subsurface soil samples collected as part of tank removal. Area-wide previous studies included surface water and sediment samples collected for metals, VOCs, and water quality parameters. Piezometers were sampled for VOCs. In the Phase I RI, sediment samples were collected for VOCs, BNAs, metals, and pesticide/PCBs. Groundwater investigations included installation and sampling of 45 wells before 1989, 32 additional wells in 1989, and three rounds from 26 existing wells in 1994. The results of this sampling indicated that metals and VOCs were above LOCs. The HHRA found the carcinogenic risk between or above the 1 by 10(-4) to 1 by 10(-6) (based on on-site consumption) range based on VOCs, metals, and PCBs. Quarterly sampling was conducted on seven wells from 1990 until 2001. These seven wells are now sampled semiannually. In 1999 an FS data gap investigation sampled 36 wells, surface water, and mini-piezometers for VOCs. A smaller number of wells were sampled for metals and redox parameters.

The levels of chlorinated solvents exceed maximum contaminant levels (MCLs) and NJ groundwater standards. GPB is acting as a barrier to contaminant transport; however, levels detected in the brook are below surface water criteria. The FS evaluated MNA, P&T, chemical oxidation, and air sparging with SVE. Currently, the proposed remedy is MNA. A bench scale evaluation of chemical oxidation was completed in 2002.

The final FS incorporates this new data and proposes MNA as the final remedy. A PP was finalized and a public meeting held in November 2004. The ROD was signed by the Army and the USEPA in July 2007 and September 2007, respectively. MNA sampling will continue, LUCs are also part of the remedy. The RD work plan was approved and the subsequent reports have been submitted.

In 2003 PICA-010 was listed as RC in AEDB-R and will be addressed under PICA-077.

CLEANUP/EXIT STRATEGY

The MNA remedy started in 2008 and consists of sampling approximately 14 wells for VOCs quarterly for two years, then

semiannually for five years, then annually through 2044. The LUCs are also part of this site. The LTM costs are included in the IRP PBC (PBC Picatinny) through December 2014. A follow-on contract will need to be awarded in FY14 to continue LTM.

Site ID: PICA-079
Site Name: ORDNANCE/EXPLOSIVE BLDGS 800 AREA
Alias: PICA-079

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

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

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

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199502	201009
RD	200604	201009
RA(C)	200604	201009
RA(O)	200604	202709

RIP Date: 201009

RC Date: 202709

SITE DESCRIPTION

This site consists of Building 809, a wastewater treatment plant, and Building 810, a melt-pour facility for large projectiles. Building 809 was constructed in 1944 for use as a large caliber projectile washout facility. Washout operations included the steam cleaning of off-specification projectiles. Explosives-contaminated wastewater from shell washout operations was discharged to a nearby leaching pool, which eventually discharged to Picatinny Lake. Building 809 was later converted to its current use, a wastewater treatment plant for treating explosives-contaminated wastewater.

Building 810 was constructed in 1930 for use as an operating facility. The building was renovated in 1940 for its current use as a melt-pour facility. Operations at Building 810 involve melting explosives in kettles and pouring the explosives into projectiles, and transporting the projectiles by conveyor to a cooling bay. Three transformers located on the southwest side of Building 810 reportedly contained PCBs.

Phase II RI activities included the installation of five monitoring wells and the collection of soil, groundwater, surface water, and sediment samples. Explosives and metals were reported at concentrations exceeding LOCs in groundwater and soil, over an extensive area, to the east of Buildings 809 and 810. Elevated levels of explosives and metals were also detected in the surface water and sediment samples collected adjacent to the site, probably due to overland runoff and erosion of contaminated soil discharging to PTA Lake. Soil and sediment bioassays, conducted as part of the Phase II ERA, found 100 percent mortality in the test organisms. In addition, large portions of the site are devoid of vegetation, suggesting that the soil contamination is also toxic to vegetation. The installation of two bedrock monitoring wells, and the collection of additional groundwater samples, during the group 1 RI helped define the extent of the groundwater contamination. Results of the HHRA indicate that the risk and hazard from exposure to impacted site media are above the target levels of 1 by 10(-4) and one, respectively. The risk and/or hazard drivers are RDX and 2,4,6-TNT in soil and 2,4,6-TNT in groundwater. Fieldwork to address data gaps was conducted in summer 2002 and the group 1 FS was completed in late 2004. The group 1 FS addresses all media at PICA-079, -139, -151, and -152.

In situ enhanced bioremediation was originally selected as the preferred alternative to address groundwater; however, subsequent sampling has demonstrated significant attenuation and migration of contaminants. Therefore, MNA is being recommended as the preferred remedy for groundwater. A demonstration project to evaluate the use of recirculating wells for substrate was implemented in 2008. Explosives-contaminated soil will be excavated for on-site treatment through disposal at an approved off-site facility. All other AOCs will be addressed through ICs. The sediment near the site will be addressed per the Lake Picatinny AOC.

The PP was publicly advertised in October 2009 and the ROD was signed and the RD was approved in 2010. The selected remedy which consisted of the excavation and off-site disposal of explosive-contaminated soil, LTM of groundwater, and LUCs was implemented in September 2010. This site is addressed under the ARCADIS PBC.

In 2003 PICA-139, -151, and -152 were listed as RC in the AEDB-R and will be addressed under PICA-079.

Site ID: PICA-079
Site Name: ORDNANCE/EXPLOSIVE BLDGS 800 AREA
Alias: PICA-079

CLEANUP/EXIT STRATEGY

An RAR was submitted in spring 2011 documenting the implementation of the remedy. LTM of groundwater and LUC will continue through 2027.

The LTM costs will be included in the IRP PBC (PBC Picatinny) through December 2014. A follow-on contract will need to be awarded in FY14.

Site ID: PICA-085
Site Name: BLDS IN 500-AREA
Alias: PICA-085

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

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

Media of Concern: Sediment, Soil, Surface Water

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199502	201310

RIP Date: N/A

RC Date: 201310

SITE DESCRIPTION

Building 507 was constructed in 1929 for use as a train engine maintenance facility. From 1987 to the present, Building 507 has been used as a garage facility for utility line maintenance vehicles. Waste materials, such as waste oil and spent cleaning solvents, were reportedly stored in 55-gallon drums in a shed adjacent to the eastern side of the building.

In 1991, a RCRA closure was performed for the shed. Elevated levels of SVOCs and metals were reported in the soil samples around the shed. The Phase II RI, conducted in 1996, included the performance of a geophysical survey, the performance of a soil-gas survey, the installation of one monitoring well, and the collection of soil and groundwater samples. Results of the geophysical survey did not identify any USTs at the site. No soil-gas analytes were detected above the reporting limits. The RI also identified SVOC and arsenic contamination in the soil around Building 507. Additional samples, collected in 2001, could not delineate the extent of the arsenic contamination; additional sampling is not possible due to the presence of underground utilities and overhead power lines. The results of the HHRA indicated that the estimated cancer risk and HI from exposure to surface soil by the site industrial research worker exceed the target levels. The estimated risk from subsurface soil exposure are within the USEPA's target risk range of 1 by 10(-4) to 1 by 10(-06) and the hazard for this exposure is below the target threshold level of one.

An FS was approved by the USEPA in August 2009. The PP was submitted in January. The site is handled within the ARCADIS PBC.

In 2003, PICA-064, -073, -074, -140, -142, -146, -148, -150, and -156 were listed as RC in the AEDB-R and will be addressed under PICA-085.

The USEPA requested and Army submitted the "25 Site Table" that provided summaries of the sites so the USEPA and the NJDEP could determine if the LUCs proposed for the sites comply with the USEPA policy.

The USEPA had technically approved the NFA with monitoring of land use ROD for 25 PTA sites within PICA 001, 006, 022, 085, 143, 146, 163, 171, 192, and 199 in a letter dated Nov. 27, 2012. In this letter the USEPA agrees with the Army position that sites with acceptable risk should be considered as an NFA as existing LUCs prevent a different land use. The Army has agreed to notification and certification; however, because it is an NFA, no action is required including an RD or the implementation of LUCs. This PP is expected to be publicly advertised in March of 2013 and the ROD signed by USEPA and Army by the end of the FY13. It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

The site is included in PP for the PICA 1 LUC group (ARCADIS 25 Site FS) and detailed in the summary table and associated figures.

It is expected that a NFA with monitoring of land use ROD for 25 PTA sites within PICA 001, 006, 022, 085, 143, 146, 163, 171, 192, and 199 will be signed this FY. There will be no requirement for a RD or a LUC plan since USEPA has agreed that existing LUCS are considered adequate.

The monitoring and certification required by USEPA to ensure the current land use and exposure scenarios for this site are maintained will be funded under program management funding.

Site ID: PICA-085
Site Name: BLDS IN 500-AREA
Alias: PICA-085

CLEANUP/EXIT STRATEGY

It is anticipated that this site will be NFA in FY14.

Site ID: PICA-091
Site Name: BLDGS IN 200-AREA
Alias: PICA-091

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

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

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199502	201401

RIP Date: N/A

RC Date: 201401

SITE DESCRIPTION

This site consists of Building 221, an explosives inspection and machining facility; Building 223, a former explosives inspection and machining facility, and Building 225, an explosives machining and light assembly facility. From the 1940s to the 1970s, pilot-scale explosive unit machining and packout operations occurred at Building 221. Other activities conducted at the building include explosive unit testing, inspection, and storage. Materials used at Building 221 are limited to explosives, radioactive materials, and small amounts of solvents and propellants. Former Building 223 is believed to have performed similar operations.

Specific operations conducted at Building 225 include solid explosives or propellant cutting, drilling, and pressing. Wastewater is conveyed by floor drains to a collection tank in Building 225. From the collection tank, the wastewater flowed along a trough to a filter, finally discharging to BSB. The wastewater was managed in this way until 1983. Currently, the wastewater is shipped to Building 809 for treatment and off-site disposal.

An internal investigation, undertaken in 1988, identified elevated levels of explosives in surface soil along the wastewater conveyance trough and near the discharge point to BSB. In 1991 a RCRA closure was performed on a 4,000-gallon AST located in a concrete vault in the basement of Building 225. Sludge and explosives-contaminated wastewater were removed from the tank and disposed of off-site. The concrete vault, tank, and basement area were subsequently decontaminated. Soil samples collected, downgradient of the tank, contained VOCs and metals above LOCs. The NJDEP reported that the subject area requires further action. In 1993 facility-wide testing of over 1,000 machines identified PCBs in a milling machine located in Building 225.

The RI performed in 1996 involved the performance of a radiological survey, installation of monitoring wells, and collection of soil and groundwater samples. No soil samples collected during the radiological survey contained levels of radionuclides in excess of LOCs. Explosives were detected in the groundwater, downgradient of the buildings, at concentrations exceeding LOCs. SVOCs, PCBs, and arsenic concentrations were identified above LOCs in the soil samples.

Additional RI sampling completed in 2000 helped to delineate the extent of the PCBs in soil and RDX in the groundwater. Results of the HHRA indicated that risk and hazard exposure to surface soil are above the target risk levels of 1 by 10(-4) and the target hazard level of one.

In 2003, PICA-123, -124, -125, -126, -127, -128, -129, -130, -131, -132, and -134 were listed as RC in the AEDB-R and will be addressed under PICA-091.

The FS was submitted to the regulators in December 2009. The site is addressed under the ARCADIS PBC.

PICA-091 now represents funding associated with former sites PICA-127, -128, -130, -123, -124, -129, -131, -125, -126, and -132.

The site is included in 45 site FS for PICA 11 LUC group of sites (PICA -11, -50, -75, -91, -97, -108, -122, -134, -135, -136, -162, -175, -200, -209).

A PP and a ROD will be completed.

It is expected that the FS will be approved in FY13 or early-FY14, a PP will be publicly advertised and a ROD signed by January 2014.

The ROD is expected to be an NFA with monitoring of land use ROD as the site has acceptable risk and would, therefore, be consistent with the basis of the USEPA letter dated Nov. 27, 2012.

In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as an NFA as existing LUCs prevent a different land use.

The Army has agreed to the notification and certification as required by USEPA; however, because it is an NFA, no action is required to perform an RD or the implementation of LUCs.

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

CLEANUP/EXIT STRATEGY

A PP and an NFA ROD will be completed in FY14.

Site ID: PICA-093
Site Name: WASTE BURIAL AREA NEAR SITES 19&34(180)
Alias: PICA-093

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Dioxins/Dibenzofurans, Metals, Munitions and explosives of concern (MEC), Other (Base Neutral Acid), Polychlorinated Biphenyls (PCB), Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Sediment, Soil, Surface Water

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199309	200708
RD	200604	200709
RA(C)	200604	200709
LTM	200710	201609

RIP Date: N/A

RC Date: 200709

SITE DESCRIPTION

The waste burial area is situated in a low marshy area formerly containing several debris piles of drums, concrete rubble, scrap, metal, lumber, railroad ties, and trees. A drainage ditch discharges to the southeast corner of the site, causing localized ponding and marshy conditions. Extensive landfilling operations have taken place in this portion of Area C over the years. Materials were disposed of in large burial pits and in surface piles. The proximity of Site 180 to the burning ground made it a convenient location to dispose of and store items that could not be burned or did not require burning. Since this was an unregulated disposal site, the years of operation are unknown. Most disposal activities are believed to have taken place in the 1960s and 1970s.

The site was the subject of an RI in 1994. As part of the RI a geophysical survey was conducted, surface, subsurface soil, surface water, sediment, and groundwater samples were collected. All samples were analyzed for VOCs, SVOCs, metals, explosives, PCBs, dioxins/furans, and gross alpha, gross beta, and gamma radiation. The geophysical survey did not identify any burial areas. Other results indicated that LOCs were exceeded for BNAs in soil and sediment, metals in surface water and sediment and metals and dioxin in groundwater.

The HHRA determined that cancer risk was in the range of 1 by 10(-4) to 1 by 10(-6). As part of an extensive trenching investigation in 1998, additional soil, sediment, and surface water samples were collected and analyzed for VOCs, SVOCs, metals, pesticides, explosives, dioxins/furans, and PCBs. During this investigation, SVOCs, metals, and PCBs were occasionally detected in surface soil above the LOC and carbon tetrachloride was detected above the LOC in one subsurface soil sample. The trenching investigation also removed some debris piles and asbestos found at the site and restored native vegetation to the area. During trenching investigation, live 90 millimeter (mm) grenades were discovered buried at the site. The site was also the subject of a risk management evaluation that recommended an FS for mitigation of human health risk and no action for ecological concerns. HHRA found risk within the 1 by 10(-4) to 1 by 10(-6) risk range and non-cancer HI below one. Impacts to groundwater will be covered under an area-wide action addressed in PICA-206.

On Dec. 17, 2006 a PP that includes ICs and ECs was approved by the USEPA and the NJDEP. A ROD was signed by the Army and the USEPA by September 2007. An RD was approved by the USEPA in October 2007. The site is addressed by the ARCADIS PBC.

LUCs have been implemented. Certifications have been submitted annually.

CLEANUP/EXIT STRATEGY

LUCs will be maintained as described in the approved RD.

The LTM costs will be included in the IRP PBC (PBC Picatinny) through December 2014. A follow-on contract will need to be awarded in FY14 to continue LTM through the five-year review scheduled in 2016.

Site ID: PICA-096
Site Name: BLDG 22,PRECISION MACHINE SHOP(SITE 117)
Alias: PICA-096

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals, Pesticides, Polychlorinated Biphenyls (PCB), Volatiles (VOC)

Media of Concern: Sediment, Soil

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199309	201401

RIP Date: N/A

RC Date: 201406

SITE DESCRIPTION

This is the consolidated site that includes all the sites in the 25 site FS.

Building 22 is a one-story, 4,220 square-foot structure, which was constructed in 1918 as a precision machine shop. Over the years, various activities conducted at Building 22 included machining of depleted uranium (DU) and machining of other metals (e.g., aluminum and copper) to manufacture appurtenances for anti-tank weapons, rocket launchers, and explosive anti-tank shells. Precision machining activities were conducted at Building 22 until 1988. Since 1988, Building 22 has not housed any manufacturing operation or been used for any other purpose. Reportedly, Building 22 was cleaned after precision-machining activities had ceased.

The site underwent an RI in 1994 that included a radiological survey and the collection of surface soil samples for VOCs, SVOCs, metals/cyanide, explosives, pesticide/PCBs, uranium and gross alpha, beta and gamma radiation. The only LOC exceedances were for beryllium in surface soil. The radiological survey did not identify any AOCs. In 2000, a risk management plan was written to evaluate human health and ecological risk and determine the best path forward. The HHRA determined that risks for three modeled receptor populations were between 1 by 10(-4) and 1 by 10(-6). Hazard indices were below one for two populations and exactly one for the third population. ERA work included terrestrial receptor modeling, earthworm studies, plant studies, mammal trapping, mammal community assessments, and tissue analyses. The conclusion was that although the site currently has low habitat value, the site could pose risks that are sufficiently elevated to warrant risk management attention, if impacted portions are allowed to return to more attractive habitat. The risk management evaluation determined that it was not in the best interest of the site to actively remediate the site for ecological concerns; however, the site should proceed to FS for human health concerns.

In 2005, PICA-029, -053, -069, -094, -098, -101, -114, -158, -161, -176, -177, -183, -190, and -207 were listed as RC in the AEDB-R and will be addressed under PICA-096. The draft FS for PICA-029, -053, -069, -161, and -096 was tentatively approved by the regulators; however, the resubmittal of the document is awaiting the submittal to and approval by the regulators of the additional characterization study of PICA-208 (the dog pound area).

Potential groundwater contamination associated with the site is being addressed under PICA-076. The FS was resubmitted to the regulators in spring 2009 and is considered approved by the regulators.

The original FS was developed by Shaw Inc. but the site is part of the PBC with ARCADIS.

The site is included in the Shaw 25 site FS and is represented by the consolidated site PICA 096.

The USEPA and the Army have disagreed on the applicability of NJ state criteria as explained in other parts of this IAP. The original comments provided by the USEPA and any relevant ones from the NJDEP will be addressed. A PP and ROD will be developed and submitted for approval.

CLEANUP/EXIT STRATEGY

A PP and a ROD will be completed PICA-029, -053, -069, -094, -096, -098, -101, -114, -158, -161, -176, -177, -183, -190 and -207.

Site ID: PICA-096
Site Name: BLDG 22,PRECISION MACHINE SHOP(SITE 117)
Alias: PICA-096

It is expected that an NFA with monitoring of land use ROD for the 25 PTA sites Sties within PICA 001, 006, 022, 085, 143, 146, 163, 171, 192, and 199 will be signed this FY. There will be no requirement for a RD or a LUC plan since USEPA has agreed that existing LUCS are considered adequate.

The monitoring and certification required by USEPA to ensure the current land use and exposure scenarios for this site are maintained will be funded under program management funding (PBC Picatinny).

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

Site ID: PICA-097
Site Name: BLD 41,PESTICIDE STR & FORM OIL/W SEP
Alias: PICA-097

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals, Pesticides, Polychlorinated Biphenyls (PCB), Volatiles (VOC)

Media of Concern: Sediment, Soil

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199309	201401
RD	200606	201403
RA(C)	200709	201406

RIP Date: N/A

RC Date: 201406

SITE DESCRIPTION

Building 41 is located in the middle of the golf course. Prior to 1964 it was used for storage. In 1964, this building was reassigned for storage of fertilizer, lime and miscellaneous inert materials. Since then, the building has been predominantly used for storage of pesticides and herbicides that are applied on the golf course and lawn surrounding the site. Until 1988, it was a common occurrence for open bags of pesticides and herbicides, stored at Building 41, to leak onto the wooden floor due to a leaky roof.

Groundwater samples collected from site monitoring wells have consistently contained elevated levels of TCE and PCE. Groundwater at this site is covered under the Area D groundwater operable unit (OU). During the Phase I RI, metals were detected at concentrations in excess of their respective LOCs in surface soil samples. Sediment samples from the oil/water separator pond contained elevated levels of metals, cyanide, DDT, and PCBs. Sediment within the oil water separator pond is covered under the GPB/ROD. The Phase I ERA concluded that this site poses virtually no risk because the contaminant levels are too low, and the area is spatially insignificant; however, earthworm toxicity testing indicated total mortality in one sample, probably due to pesticides. Human health risk falls within or below the target range 1 by 10(-4) to 1 by 10(-6). The HI exceeds the target level of one, primarily due to manganese and thallium. The adult lead model results indicate lead in soil may be a potential health concern. Additional RI sampling conducted in 2000 delineated the extent of most metals in the soil, but the delineation for arsenic, which is believed to be related to pesticide use on the golf course, is not ER,A fundable.

The site is addressed by the ARCADIS PBC. An FS that included a small excavation was submitted in September 2009.

CLEANUP/EXIT STRATEGY

A ROD, RD, and RA will be completed in FY14. A soils RA will be completed in FY14 and NFA is anticipated.

This site is included in the IRP PBC (PBC Picatinny) through December 2014.

Site ID: PICA-102
Site Name: FORMER WASTE DUMP/CHEMICAL LAB
Alias: PICA-102

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals

Media of Concern: Sediment, Soil

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199309	200809
RD	200604	200809
RA(C)	200604	200809
LTM	200810	201609

RIP Date: N/A

RC Date: 200809

SITE DESCRIPTION

Site 61 encompasses approximately three acres and consists of Buildings 171 and 176. Trash, including cars and unknown materials, were reportedly used to fill in the swamp area west of Buildings 171 and 176 sometime prior to 1960. Building 171 was constructed in 1948 on what was originally the site of high explosives magazine No. 2. Since its construction, Building 171 has been used as an administrative building containing a graphics department, which included photo processing units. A RCRA closure plan was prepared for the photographic processing. The facility was to have been closed; however, the closure plan was never implemented because the building was renovated. The NJDEP considers the renovation work to have completed closure of Building 171. Building 176 was constructed in 1944 for storage of laboratory equipment and sampling of ammunition. In 1959, Building 176 was converted to a plastics information center and later converted to an administrative building.

The site underwent an RI in 1994 consisting of a geophysical survey, test pits, radiological survey, surface soil, surface water, sediment sampling for VOCs, BNAs, metals, cyanide, explosives, and pesticide/PCBs. BNAs and metals were detected above LOC in surface soil and sediment. The Phase I RI recommended that this site proceed to FS; however, additional RI work was completed in 1997 based upon regulatory comment. This RI consisted of test pits, the collection of subsurface soil, surface soil, surface water and sediment for VOCs, SVOCs, pesticide/PCBs, and metals. The risk management plan in 2000 determined that human health risk was within the 1 by 10(-4) to 1 by 10(-6) range for all three receptor populations. Two of three hazard indices were greater than one. Elevated hazard indices were largely caused by inhalation of manganese. An ERA was performed, including terrestrial receptor modeling, earthworm bioassays, plan/mammal community assessments, and tissue sample analyses. The risk management decision was that the overall weight of evidence indicated that current conditions potentially posed ecological risk. The recommendation was for risk management attention or monitoring to be decided in an FS. The FS was submitted to regulators in August 2004. The FS evaluated ICs, removal, and capping as remedial alternatives.

The FS for the site was completed in 2004. Metals contaminated soil was found between PICA-102 (site 61) and PICA-103 (site 104). Therefore, to address all contamination at PICA-102, PICA-103 and within the stream between the two sites, an FS was written to address all of the contamination. The FS included all media at these sites with the exception of groundwater. Groundwater is being addressed under PICA-204.

In 2003, PICA-103 was listed as RC in AEDB-R and will be addressed under PICA-102. PICA-102 now represents funding associated with former PICA-103.

The ROD, RD, and implementation were all completed in FY08. The implemented remedy included excavation and off-site disposal of metals-contaminated soils as well as LUCs. The site is part of the ARCADIS PBC. Certification reports are submitted annually.

CLEANUP/EXIT STRATEGY

Site ID: PICA-102
Site Name: FORMER WASTE DUMP/CHEMICAL LAB
Alias: PICA-102

The LTM at the site will be continued and are included in the IRP PBC (PBC Picatinny) through December 2014. A follow-on contract will need to be awarded in FY14 to continue LTM through the five-year review scheduled in 2016.

Site ID: PICA-107
Site Name: BLDGS 404,407,&408,CHMCL LAB&PROP PLANTS
Alias: PICA-107

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals, Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern: Sediment, Soil

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199309	201401
RD	200712	201403
RA(C)	200709	201406

RIP Date: N/A

RC Date: 201406

SITE DESCRIPTION

This site has an area of approximately seven acres and includes Buildings 404, 407 and 408. Building 404 was originally constructed as a storehouse for sodium nitrate. The building was modified in the 1950s for use as a scientific lab. The lab was used for conducting physical research, including bomb testing and pyrometry. A physical-chemical laboratory was located in Building 404 from 1958 to 1975. Currently, Building 404 is used as a machine shop and for test burning propellants. Building 407 was originally used as an experimental chemistry lab, and was subsequently used as an energetics lab for propellant manufacturing. Building 407 is currently used for electronic testing. Building 408 was originally used for the experimental loading and nitrating of cottons, linens, and wood pulp for the production of NC. Building 408 was modified for use as a chemical research facility in the experimental pressing of explosives. In 1974, the building was used as a lead azide production facility. Currently, Building 408 is used for chemical storage.

Well 410, an active drinking water supply well, located near Building 407, has contained elevated levels of VOCs and explosives. An investigation to determine the potential source of the contamination concluded that the most likely source of the VOCs was the former machine shop located near Building 407.

Environmental samples collected during the Phase I RI indicated surface soil exceedances for PAHs, metals, and pesticide, dieldrin. Surface water exceedances detected in samples from the drainage ditches include several metals. Associated sediment samples contained exceedances for PAHs, metals, and cyanide. Groundwater exceedances in the overburden aquifers include TCE and metals. Human health risk falls within the target range 1 by 10(-4) to 1 by 10(-6). The hazard index exceeds the target level of one. Manganese was identified as the primary hazard driver in soil. The adult lead model results indicate lead is not a health concern. The Phase I ERA concluded that this site poses a high risk to certain organisms such as birds and terrestrial invertebrates. Based on the results of the Phase I ERA, an additional ecological investigation was conducted in 2005. Although the food web exposure models indicated that adverse effects to terrestrial receptors could occur given sufficient exposure to site COPECs, the field investigations and RSA results indicated that effects, if any, were not impacting the local populations of small mammals or birds. For aquatic receptors, the results of the lines of investigation (i.e., vegetation and benthic surveys) provided sufficient weight-of-evidence to suggest that the aquatic ecosystems at the site are not adversely affected due to the presence of site-related COPECs in the sediment or surface water. In order to delineate the extent of soil and sediment contamination, additional samples were collected in 2000 and 2001. Based on the results of these samples, the extent of contamination is widespread. The probable source of the PAH and metals contamination is believed to be the fill material used in this area.

In 2003, PICA-104, -107, -109, -138, -147, and -210 were listed as RC in AEDB-R and will be addressed under PICA-108.

PICA-107 was reopened in 2011 and the costs are covered under the ARCADIS PBC contract.

An FS and ROD will be developed and approved. PICA 107 is included in the five sites FS. Removal and off-site disposal of hotspot(s) with LUCs is the expected remedy.

The site is included in five sites FS and includes PICA-149, PICA-011, PICA-131, PICA-097, PICA-107.

Site ID: PICA-107

Site Name: BLDGS 404,407,&408,CHMCL LAB&PROP PLANTS

Alias: PICA-107

CLEANUP/EXIT STRATEGY

An FS and ROD will be developed and approved. PICA 107 is included in the five sites FS. Removal and off-site disposal of hotspot(s) with LUCs is the expected remedy.

Site ID: PICA-108
Site Name: BLDGS in 400/300 AREA
Alias: PICA-108

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Polychlorinated Biphenyls (PCB), Polycyclic Aromatic Hydrocarbons (PAH), Volatiles (VOC)

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

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199309	201401

RIP Date: N/A

RC Date: 201406

SITE DESCRIPTION

This site consists of Building 424 and the surrounding area. Building 424 was constructed in 1903 as a HEs plant. As a HEs plant, operations at Building 424 involved the use of a NC-based slurry. After production of explosives ceased, all production equipment was removed, except for the neutralization and acid tanks. The building was then used as a grains-dimensioning laboratory and as a storage facility. Recently, Building 424 was used for nitration and testing of combustible cartridge cases. The building is currently inactive.

According to a 1964 Directorate of Engineering and Housing (DEH) engineering drawing (DP-141463), a sump was located inside Building 424 and was used for the collection of overflow production water. The sump discharged to the marsh area southwest of the building via an open trough and a small outfall ditch. The ditch, located to the south of Building 423, is associated with the open trench portion of the GCL, which received liquid waste containing NC, referred to as guncotton.

Soil samples collected during the Phase I RI detected concentrations of PAHs, metals, and PCBs in excess of LOCs. Surface water samples collected from the marsh detected LOC exceedances for metals. Corresponding sediment samples contained elevated levels of PAHs and metals. The VOC, methylene chloride, and several metals were detected at concentrations in excess of LOCs in the groundwater samples. Human health risk falls within the target range 1 by 10(-4) to 1 by 10(-6). The HI exceeds the target level of one. Mercury was identified as the primary hazard driver in soil, sediment, and surface water. Results of the adult lead model indicated lead show a potential health risk in the soil. The Phase I ERA concluded that this site poses a high risk to certain avian species and terrestrial invertebrates. Based on the results of the Phase I ERA, an additional ecological investigation was conducted at the site in spring and summer 2005. Although the food web exposure models indicated that adverse effects to terrestrial receptors could occur given sufficient exposure to site COPECs, the field investigations and RSA results indicated that effects, if any, were not impacting the local populations of small mammals or birds. For aquatic receptors, the results of the lines of investigation (i.e., vegetation and benthic surveys) provided sufficient weight-of-evidence to suggest that the aquatic ecosystems at the site are not adversely affected due to the presence of site-related COPECs in the sediment or surface water.

During the Phase II RI, sediment samples from the drainage ditch contained elevated levels of several explosive compounds and metals. In order to delineate the existing contamination, and investigate other potential sources at the site, additional samples were collected in 2000 and 2001.

Based on the results of these samples, and a recommendation from the NJDEP, one monitoring well was installed to determine the impact of lead contamination in the soil on groundwater quality at the site. Lead was not detected in the groundwater sample. In 2006 this same well was sampled to determine the impact of the explosives contamination in the ditch on the groundwater quality downgradient of the ditch. Explosives concentrations in excess of LOCs were not detected.

Between June and September 2004 the neutralization tank and approximately 94 cy of soil were removed from the southern corner of Building 424. Additionally, approximately 1,759 gallons of water within the neutralization tank were drained, sampled, and disposed of off-site as nonhazardous waste. Post-excavation samples indicated lead and SVOC concentrations were below LOCs. NC was identified at a final concentration of 9.3 mg/kg.

Site ID: PICA-108
Site Name: BLDGS in 400/300 AREA
Alias: PICA-108

The site is being addressed by the ARCADIS PBC. The FS with this site was submitted in December 2009.

The site is included in FS for PICA 11 LUC group of sites now called the 45 site FS (PICA -11, -50, -75, -91, -97, -108, -122, -134, -135, -136, -162, -175, -200, -209).

It is expected that the FS will be approved in FY13 or early-FY14, a PP will be publicly advertised and a ROD signed by January 2014.

The ROD is expected to be an NFA with monitoring of land use ROD as the site has acceptable risk and would therefore be consistent with the basis of the USEPA letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as an NFA as existing LUCs prevent a different land use.

The Army has agreed to the notification and certification as required by USEPA; however, because it is an NFA, no action is required to perform an RD or the implementation of LUCs.

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

CLEANUP/EXIT STRATEGY

An FS, PP, and NFA ROD will be completed in FY14. This work is included in the Arcadis PBC through December 2014.

Site ID: PICA-111
Site Name: FORMER BLDG 435,PROPELLANT SOLV MIXING
Alias: PICA-111

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals, Perchlorate

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	197607	198105
SI	198707	198906
RI/FS	199309	201401
IRA	200308	200410

RIP Date: N/A

RC Date: 201401

SITE DESCRIPTION

This site, which is not included in the PBC, consists of former Building 435 and the surrounding area. Building 435 was constructed in 1918. Information regarding the use of Building 435 between 1918 and 1950 was unavailable. In the early-1950s, the building was used for pulverizing operations in the preparation of experimental propellants. Potassium perchlorate was then mixed with the black powder to make a detonating agent. Pulverizing operations at Building 435 ceased in 1976. The building was subsequently used to mix solvents for propellant production. The 1991 ANL RI concept plan indicated that ethyl acetate and acetone were potentially used in Building 435. No information was available on when solvent mixing operations were discontinued. Building 435 was demolished under TECUP in September 2000.

A RCRA closure was performed at Building 435 in 1991. The analytical results indicated that copper was the only compound detected above its LOC. In a December 1992 correspondence to PTA, the NJDEP stated that the closure was incomplete and would require further investigation under CERCLA. In order to delineate the extent of soil contamination at this site, four soil samples were collected in 2000. No LOC exceedances were identified in the soil samples. A very high lead concentration was detected in the sediment sample collected from the seep vat. Metals and perchlorate were detected at concentrations exceeding LOCs in the groundwater sample. Lead and perchlorate (600 ppb) contamination was delineated in 2001. Estimated cancer risks are below or within the USEPA's target range of 1 by 10(-4) to 1 by 10(-6) for all exposure scenarios. The estimated non-cancer hazards are all below the USEPA's target threshold of one; however, results of the site-specific lead exposure assessment indicated lead poses a health risk.

Based on comments from the USEPA, an additional risk assessment was performed in FY08 regarding military residents only. A SLERA was conducted for this site in the spring and summer 2005. With the removal of the lead contamination (as noted below), the only apparent contamination at the site is perchlorate in groundwater. However, samples collected in August 2006 showed the levels of perchlorate at non-detectable levels from the three monitoring wells located at the site. Samples collected in November 2008 showed levels of perchlorate [7.1 micrograms per liter (ug/L)] above the LOC of five ug/L. Sampling in July 2009 showed no exceedances of perchlorate. Coupled with decreasing results in the past, these results indicate that perchlorate is naturally attenuating. Samples from GPB, the potential discharge point for groundwater have not contained detectable levels of perchlorate in the surface water. Thus, there is no complete exposure pathway for ecological receptors from groundwater or GPB, and further ecological investigation is not warranted.

An IRA for lead was conducted between May and June 2004 as part of the facility-wide lead removal investigation. Approximately 15 cy of soil were removed from the site of the former wooden seep vat and trough. Post-excavation results did not identify any lead concentrations above the LOC.

In 2003 PICA-106, -113, -115, -144, and -203 were listed as RC in the AEDB-R and will be addressed under PICA-111.

In December 2007 a FS was submitted and finalized in April 2010 in accordance with the USEPA and the NJDEP comments.

The PP was submitted in spring 2010 and comments were received from the USEPA in December 2010.

The PP is expected to be modified in FY13. It is expected that the PP will be approved in FY13 or early-FY14. The PP will be

publicly advertised and a ROD signed by January 2014 as a NFA with monitoring. A new contract from PP to ROD will be awarded in FY13 as the existing contract ends by Jnne of 2013; however, the contract will not likely be implemented until early-FY14.

It is expected that the FS will be approved in FY13 or early-FY14, a PP will be publicly advertised and a ROD signed by January 2014.

The ROD is expected to be an NFA with monitoring of land use ROD as the site has acceptable risk and would, therefore, be consistent with the basis of the USEPA letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as a NFA as existing LUCs prevent a different land use. The Army has agreed to the notification and certification as required by USEPA; however, because it is an NFA, no action is required for a RD or the implementation of LUCs.

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

CLEANUP/EXIT STRATEGY

An NFA ROD is anticipated in FY14.

Site ID: PICA-122
Site Name: PROPELLANT TESTING (BLDG 197) SITE 126
Alias: PICA-122

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA	197607	198105
SI	198910	199103
RI/FS	199309	201401

RIP Date: N/A

RC Date: 201401

SITE DESCRIPTION

Building 197 is in an area of PTA used for chemistry and other testing laboratories. The building was constructed in 1942 for surveillance testing. The building is now used for propellant testing, which is conducted in a conditioning chamber in the building. The building had an explosives allowance for up to five pounds of explosives.

The Phase I RI conducted in 1994 included the collection of surface soil samples for analysis of VOCs, BNAs, metals, cyanide, explosives, and pesticide/PCBs. Metals were detected in exceedance of LOC. In 2000 and 2001, additional investigation was performed for the Phase I 2A-3A sites RI. This investigation consisted of the collection of surface and subsurface soil for arsenic, copper, and cadmium in soil. The Phase I ERA concluded that neither the small mammal studies, nor the earthworm toxicity studies found any significant impacts in this area.

Estimated risks for the realistic exposure scenarios are within or below the USEPA's target range of 1 by 10(-4) to 1 by 10(-6). The estimated hazards for the construction worker exceed the target threshold of one. The primary risk and hazard drivers are arsenic and cadmium in soil.

The site is addressed by the ARCADIS PBC. An FS (the 45 site FS) with this site was submitted in October 2009.

It is expected that the FS will be approved in FY13 or early-FY14, a PP will be publicly advertised and a ROD signed by January 2014.

The ROD is expected to be an NFA with monitoring of land use ROD as the site has acceptable risk and would, therefore, be consistent with the basis of the USEPA letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as an NFA as existing LUCs prevent a different land use. The Army has agreed to the notification and certification as required by USEPA; however, because it is an NFA, no action is required to perform an RD or the implementation of LUCs.

The site is included in FS for PICA 11 LUC group of sites now called the 45 site FS (PICA -11, -50, -75, -91, -97, -108, -122, -134, -135, -136, -162, -175, -200, -209).

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

CLEANUP/EXIT STRATEGY

A PP and an NFA ROD will be completed in FY14.

Site ID: PICA-131
Site Name: FORMER ORDNANACE MANUFAC. (BLDG 266)
Alias: PICA-131

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

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

Media of Concern: Soil

Phases	Start	End
PA	197607	198105
SI	198910	199103
RI/FS	199502	201401
RD	200709	201403
RA(C)	200709	201406

RIP Date: N/A

RC Date: 201406

SITE DESCRIPTION

Building 266 served as an explosives production facility from the time of its construction in 1903 until the early-1950s. Explosives production ceased here sometime before 1953, when the building was converted to its current use as a wind tunnel research facility. The wind tunnel research facility has been used to simulate and study the flight characteristics of small projectiles. At one time, operation of the wind tunnel resulted in the generation and dispersion of mercury condensate in and around the wind tunnel exhaust area.

An internal investigation conducted in 1991 included the collection of 23 soil samples around Building 266. In general, the results showed elevated levels of PAHs and metals. In response to an accidental mercury release in February 1992, two soil samples were collected from areas that had been excavated following the release. Results of the post-excavation samples did not detect mercury concentrations above the LOC. Phase II RI activities conducted in 1996 included the installation of three monitoring wells and the collection of soil and groundwater samples. Analytical results from the RI identified VOCs in groundwater, and SVOCs and arsenic in the soil at concentrations above LOCs.

Additional RI activities performed in 2000 included the collection of soil and groundwater samples at the site. Additional LOC exceedances were reported for TCE in groundwater and arsenic in the soil. Results of the HHRA indicate the risk and hazard from exposure to surface soil are above the target risk level of 1E-4 and the target hazard level of one (1). Modeled risk and results of a soil bioassay indicate minimal ecological risk to terrestrial species. Further investigation of groundwater concentrations will be conducted as part of the Mid-Valley investigation. FSs are recommended to address the soil contamination and area-wide groundwater contamination.

In 2003, PICA-123 through PICA-132 were listed as RC in AEDB-R and will be addressed under PICA-091.

The site was reopened in FY11 as a no cost site for FY11 since the costs are covered under the ARCADIS PBC contract and any LTM cost will be covered by PICA 091 after the RIP.

The site is covered under the five site FS that was submitted in September 2009.

The site is included in the five sites FS and includes PICA-149, PICA-011, PICA-131, PICA-097, PICA-107.

CLEANUP/EXIT STRATEGY

A PP and a ROD will be completed. Maintenance of existing LUCs and a small RA for this site will be recommended.

The LTM costs are included in the site-wide PBC.

Site ID: PICA-134
Site Name: R&D LAB/Chem Storage 3000-Area
Alias: PICA-134

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Metals, Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern: Soil

Phases	Start	End
PA	197607	198105
SI	198910	199103
RI/FS	199502	201401

RIP Date: N/A

RC Date: 201406

SITE DESCRIPTION

This site consists of Building 3028, an R&D laboratory, and Building 3029, a general purpose warehouse. Building 3028 operated as a supply-storehouse until 1980. Between 1980 and 1982, the building was renovated to be used as laboratories and offices. Use of the R&D laboratories began in 1982. Building 3028 is currently used as an explosive chemistry laboratory. The transformer, located on the western side of Building 3028, had an Aroclor-1260 concentration of 194 ppm. The transformer was removed.

Mercury vapor was discovered in one of the laboratories during air sampling in 1990. The mercury was suspected to have come from damaged test equipment. The mercury contamination was remediated. Small amounts of mercury may have also gone down sink and floor drains, as a result of periodic mercury spills that occurred during routine laboratory activities. Radioactive material and equipment with radioactive sources were periodically used in the building. All radioactive materials have reportedly been removed from the building. In 1991, a RCRA closure was performed for specific laboratory areas inside Building 3028. As part of the closure, the designated areas were cleaned. In 1992, the NJDEP approved the closure. Building 3029 is connected to the north end of Building 3028. The currently vacant building once operated as an unofficial warehouse for storage of chemicals and equipment used in Building 3028. In 1991 a RCRA closure was performed to remove chemicals and equipment from the building. The building was demolished and a surveillance facility was constructed in its place. A clean closure was approved by the NJDEP in 1992.

Phase II RI activities were conducted in 1996. The radiological survey detected two samples with radiological concentrations above LOCs. During the RI, beryllium and PAHs were detected above LOCs in soil. Results of an HHRA indicated that the risks and hazard indices associated with exposure to soil at the site do not exceed the target levels. In response to regulatory comments on the RI report, one soil sample was collected for PAHs during additional RI activities in 2001. No exceedances of PAH LOCs were reported in the sample. No further sampling is proposed.

In 2003 PICA-012 and PICA-018 were listed as RC in the AEDB-R and will be addressed under PICA-134.

PICA-134 now represents funding associated with former sites PICA-012 and PICA-018.

An FS with this site (the 45 site FS) was submitted in October 2009. The ROD is expected to be an NFA with monitoring of land use ROD as the site has acceptable risk and would, therefore, be consistent with the basis of the USEPA letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as NFA as existing LUCs prevent a different land use. The Army has agreed to the notification and certification as required by USEPA; however, because it is an NFA, no action is required to perform an RD or the implementation of LUCs.

The site is included in FS for PICA 11 LUC group of sites, the 45 site FS (PICA-11, -50, -75, -91, -97, -108, -122, -134, -135, -136, -162, -175, -200, -209).

A PP and a ROD will be completed and submitted.

It is expected that the FS will be approved in FY13 or early-FY14, a PP will be publicly advertised and a ROD signed by January 2014.

Site ID: PICA-134
Site Name: R&D LAB/Chem Storage 3000-Area
Alias: PICA-134

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

CLEANUP/EXIT STRATEGY

A PP and a ROD will be completed and submitted in FY14.

Site ID: PICA-135
Site Name: BLDGS IN THE 900-AREA
Alias: PICA-135

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Metals, Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern: Soil

Phases	Start	End
PA	197607	198105
SI	198910	199103
RI/FS	199502	201401

RIP Date: N/A

RC Date: 201401

SITE DESCRIPTION

Building 910 was constructed in 1950 for use as a storage magazine. The building, located on the northwestern shore of Picatinny Lake, was utilized until the 1970s for the environmental testing of munitions, to determine the effect of temperature and humidity on propellants and explosives. As of 1991, the building was empty except for five walk-in ovens used for drying propellants and explosives.

In 1991 RCRA closure activities were performed at Building 910 by washing down the walls and walk-in areas, and removing any remaining debris. The subject area received a clean closure from the NJDEP in 1992. The RI conducted at the site in 1996 included the collection of soil, groundwater, and sediment samples. Analytical results identified PAHs and metals in the surface soil, as well as metals in the sediment at concentrations in excess of their respective LOCs.

In response to regulatory comments on the RI report, additional soil samples were collected in 2001 to delineate the extent of soil contamination. Based on these results, the PAH contamination has been delineated. One additional sample, collected in 2002, completed the arsenic delineation. Results of a HHRA for soil, sediment and surface water exposures at the site indicated that the risks and hazard indices are below the target levels of 1 by 10(-4) and one, respectively. An FS will be necessary to address soil contamination above LOCs. ICs will be considered as a potential remedy. The sediment contamination will be evaluated as part of site PICA-057 (Picatinny Lake).

In 2003 PICA-137, -153, and -154 were listed as RC in the AEDB-R and will be addressed under PICA-135.

PICA-135 now represents funding associated with former sites PICA-137, -153, and -154.

The site is addressed by the ARCADIS PBC. An FS (the 45 site FS) was submitted in October 2009.

The site is included in FS for PICA 11 LUC group of sites, the 45 site FS (PICA-11, -50, -75, -91, -97, -108, -122, -134, -135, -136, -162, -175, -200, -209).

It is expected that the FS will be approved in FY13 or early-FY14, a PP will be publicly advertised and a ROD signed by January 2014.

The ROD is expected to be an NFA with monitoring of land use ROD as the site has acceptable risk and would, therefore, be consistent with the basis of the USEPA letter dated Nov. 27, 2012.

The Army has agreed to the notification and certification as required by USEPA; however, because it is an NFA, no action is required to perform an RD or the implementation of LUCs.

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

CLEANUP/EXIT STRATEGY

Site ID: PICA-135
Site Name: BLDGS IN THE 900-AREA
Alias: PICA-135

A PP and an NFA ROD will be completed and submitted in FY14.

Site ID: PICA-136
Site Name: HIGH PRESSURE BOILER (BLDG 3013) SITE 79
Alias: PICA-136

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals, Petroleum, Oil and Lubricants (POL), Polycyclic Aromatic Hydrocarbons (PAH), Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	197607	198105
SI	198910	199103
RI/FS	199502	201401
IRA	199001	199208

RIP Date: N/A

RC Date: 201401

SITE DESCRIPTION

Built in 1901, Building 3013 was originally used as a main boiler house, but is currently used as an auxiliary boiler house. The building was also used to produce explosives during WWI and WWII, and was expanded in the 1940s to include a water treatment system. In 1967, two 20,000-gallon USTs were installed for storage of fuel oil for the boiler. These USTs were in service until their removal in 1990. Discolored soil was noted after the tanks were removed. Building 3013 is currently inactive.

In 1991 a RCRA closure was performed that included removing waste material from the building, and decontaminating the waste storage area, in the westernmost corner of the building. In 1992, the NJDEP approved the closure area. As a result of the identification of discolored soil during the removal of the two USTs, about 1,500 tons of contaminated soil was removed from a 15-foot deep excavation. Elevated levels of TPH were detected in the soil samples; VOCs and SVOCs were detected in the groundwater. In response to recommendations from the previously mentioned investigation, additional soil and groundwater samples were collected in 1994 to better define the contamination near the former USTs. No contaminant concentrations were reported above LOCs.

Phase II RI activities were conducted at the site in 1996. During the RI, TPHs were detected at high levels in three wells. Lead was reported at concentrations above LOCs in groundwater and soil. SVOCs and arsenic were also detected at concentrations in excess of LOCs in the soil. Additional investigations performed in 2000 delineated the extent of the arsenic and lead contamination in soil; however, additional samples were collected in 2001 to complete the PAH delineation in soil. The results of the HHRA indicated that the estimated cancer risk from exposure to surface soil is above the target risk level of 1 by 10(-4). The estimated hazard from exposure to surface soil is below the target threshold level of one. The estimated risk from exposure to subsurface soil is within the target risk range of 1 by 10(-4) to 1 by 10(-6). The hazard from subsurface soil exposure is below the target level. The adult lead model results indicate lead concentrations in surface soil are not a concern as the average lead concentration (312 mg/kg) does not exceed the lead model-derived preliminary remediation goals (PRGs). In 2004, additional groundwater samples did not have contamination above LOCs.

The site is addressed by the ARCADIS PBC. An FS was submitted in October 2009.

The site is included in FS for PICA 11 LUC group of sites, the 45 site FS (PICA-11, -50, -75, -91, -97, -108, -122, -134, -135, -136, -162, -175, -200, -209).

A PP and a ROD will be completed. It is expected that the FS will be approved in FY13 or early-FY14, a PP will be publicly advertised and a ROD signed by January 2014.

The ROD is expected to be an NFA with monitoring of land use ROD as the site has acceptable risk and would, therefore, be consistent with the basis of the USEPA letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as an NFA as existing LUCs prevent a different land use.

The Army has agreed to the notification and certification as required by EPA; however, because it is an NFA, no action is required to perform an RD or the implementation of LUCs.

Site ID: PICA-136
Site Name: HIGH PRESSURE BOILER (BLDG 3013) SITE 79
Alias: PICA-136

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

CLEANUP/EXIT STRATEGY

A PP and an NFA ROD will be completed and submitted in FY14.

Site ID: PICA-143
Site Name: ORDNANCE FAC (BLDGS 717,722,732)SITE 108
Alias: PICA-143

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

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

Media of Concern: Sediment, Soil

Phases	Start	End
PA	197607	198105
SI	198910	199103
RI/FS	199502	201310

RIP Date: N/A

RC Date: 201310

SITE DESCRIPTION

This large site consists of Building 717, an ordnance facility, former Building 722, a physics and flare-testing laboratory, and former Building 732, a physics laboratory and ordnance facility. All three buildings were located along the southwestern shore of Picatinny Lake. Building 717 was used as a major-caliber loading facility. In the 1980s, the building was converted to the armament research, development and engineering center (ARDEC) electromagnetic and electrothermal/chemical armament research facility. From WWII until the 1970s, flares were tested on a peninsula (Flare Island), approximately 300 feet northeast of Building 717. Several transformers at the site had contained PCBs. Building 722 was originally used as an office and testing laboratory, but was later converted to a flare testing facility. Building 732 was used as a pyrotechnic facility. Wastewater from Building 732 was reportedly discharged to GPB. Building 732 was demolished under TECUP in 2004.

Phase II RI activities included performance of a soil-gas survey, performance of a radiological survey, installation of three monitoring wells, and the collection of soil, groundwater, surface water, sediment and sump samples. RI results have identified several AOCs at the site, including metals contamination at Flare Island, metals and mirex contamination in the catch basins and sumps of Building 732, soil contamination on the south side of Building 722, and PCB contamination near a transformer pad. Results of bioassays conducted on-site samples found significant toxicity to aquatic organisms, but no adverse effects on soil invertebrates. Additional sampling was performed in 2001 to delineate the extent of contamination at the various AOCs. The sumps at Building 732 were removed in 2003. Post-excavation sample results indicate additional soil will have to be removed adjacent to the former sumps.

As part of the Building 722 demolition, the flare tunnel clean-out sump was also removed. Approximately 2.5 cy of the soil contamination on the south side of the building were removed in 2004 prior to its demolition.

The risks and hazards from exposure to Picatinny Lake surface water and sediment adjacent to the site are below the target levels of 1 by 10(-6) and one, respectively. Based on a 2007 re-evaluation of risks using updated dermal exposure assumptions, the risks of surface soil exposure are below the target level of 1 by 10(-4) and now hazard from surface soil exposure also below one.

The site is addressed by the ARCADIS PBC. An FS with this site (the ARCADIS 25 site FS) was approved in September 2009.

The USEPA requested and Army submitted the "25 Site Table" that provided summaries of the sites so the USEPA and the NJDEP could determine if the LUCs proposed for the sites comply with the USEPA policy.

USEPA had technically approved the NFA with monitoring of land use PP for 25 PTA sites within PICA 001, 006, 022, 085, 143, 146, 163, 171, 192, and 199 in a letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as a NFA as existing LUC prevent a different land use. The Army has agreed to the notification and certification; however, because it is a NFA, no action is required to perform an RD or the implementation of LUCs.

This PP is expected to be publicly advertised in March of 2013 and the ROD signed by USEPA and Army by the end of the FY13. It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

Site ID: PICA-143
Site Name: ORDNANCE FAC (BLDGS 717,722,732)SITE 108
Alias: PICA-143

The site is included in the PP for the PICA 1 LUC group (ARCADIS 25 site FS) and detailed in the summary table and associated figures.

CLEANUP/EXIT STRATEGY

It is expected that a NFA with monitoring of land use ROD for 25 PTA sites within PICA 001, 006, 022, 085, 143, 146, 163, 171, 192, and 199 will be signed this FY. There will be no requirement for a RD or a LUC plan since EPA has agreed that existing LUCS are considered adequate.

The monitoring and certification required by USEPA to ensure the current land use and exposure scenarios for this site are maintained will be funded under program management funding.

Site ID: PICA-145
Site Name: 500 AREA BUILDINGS SITE 110
Alias: PICA-145

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Semi-volatiles (SVOC)

Media of Concern: Soil

Phases	Start	End
PA	197607	198105
SI	198910	199103
RI/FS	199502	201401

RIP Date: N/A

RC Date: 201501

SITE DESCRIPTION

PICA-047 and PICA-145 have been consolidated into PICA-22. PICA-22 now represents funding associated with former sites PICA-047 and PICA-145.

PICA-145 is included with the Non-Lakes FS which includes PICA-145, -155, -184 and -195.

It is expected that the FS will be approved in FY13 or early-FY14, a PP will be publicly advertised and a ROD signed by January 2014.

The ROD is expected to be an NFA with monitoring of land use ROD as the site has acceptable risk and would, therefore, be consistent with the basis of the USEPA letter dated Nov. 27, 2012.

In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as an NFA as existing LUCs prevent a different land use.

The Army has agreed to the notification and certification as required by USEPA; however, because it is an NFA, no action is required to perform an RD or the implementation of LUCs.

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

CLEANUP/EXIT STRATEGY

A PP and an NFA ROD will be completed and submitted in FY14.

Site ID: PICA-146
Site Name: PROPELLANT PLANT (BLDG 561) SITE 113
Alias: PICA-146

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Phases	Start	End
PA	197607	198105
SI	198910	199103
RI/FS	199502	201310

RIP Date: N/A

RC Date: 201310

SITE DESCRIPTION

Building 561 was a five-story structure, which was constructed in 1931. The building was located on the eastern shore of Picatinny Lake. It is not known how long Building 561 was in operation, but records indicate that the building was in operation, during 1960, as a blending facility for propellants. The nature of the operations that occurred in the building, and the documented use of spray nozzles in this building, suggest that wastewater was likely to have been generated and probably discharged to the lake. Building 561 was demolished under TECUP prior to 1988.

Phase II RI activities conducted at this site in 1996 included the installation of one monitoring well and the collection of soil, groundwater, surface water and sediment samples. SVOCs, explosives, metals and ammonia were detected at concentrations exceeding their respective LOCs in surface water and sediment samples collected from Picatinny Lake, which borders the site. A deep sediment sample was collected in 2001 to vertically delineate the contamination. These concentrations will be addressed under PICA-057, Picatinny Lake. No exceedances were reported in the soil or groundwater samples. Results of a HHRA for soil exposure did not report any risks or hazards above the target levels of 1 x 10-4 and 1, respectively. However, a HHRA performed for surface water and sediment exposures identified potential hazards from exposure to surface water and sediment within Picatinny Lake adjacent to the site that exceeded the target level. As part of the Phase II ERA, one sediment bioassay exhibited total mortality of the test organisms, while a second bioassay did not detect any significant toxicity, suggesting a toxic hot spot exists in Picatinny Lake, adjacent to the site.

An FS was approved by the USEPA in August 2009. The original PP was submitted in January 2010. The USEPA provided comments during the review process in FY10 and FY11 that indicated that they would not be satisfied with only ICs and would require ECs.

The USEPA requested and Army submitted the "25 Site Table" that provided summaries of the sites so the USEPA and the NJDEP could determine if the LUCs proposed for the sites comply with the USEPA policy.

USEPA had technically approved the NFA with monitoring of land use PP for 25 PTA sites within PICA 001, 006, 022, 085, 143, 146, 163, 171, 192, and 199 in a letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as a NFA as existing LUCs prevent a different land use. The Army has agreed to notification and certification; however, because it is a NFA, no action is required to peform an RD or the implementation of LUCs.

This PP is expected to be publicly advertised in March of 2013 and the ROD signed by USEPA and Army by the end of the FY13. It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

CLEANUP/EXIT STRATEGY

It is expected that an NFA with monitoring of land use ROD for 25 PTA sites within PICA 001, 006, 022, 085, 143, 146, 163, 171, 192, and 199 will be signed this FY. There will be no requirement for a RD or a LUC plan since USEPA has agreed that existing LUCS are considered adequate.

Site ID: PICA-146
Site Name: PROPELLANT PLANT (BLDG 561) SITE 113
Alias: PICA-146

The monitoring and certification required by USEPA to ensure the current land use and exposure scenarios for this site are maintained will be funded under program management funding.

Site ID: PICA-149
Site Name: PROPELLANT PLANT (BLDG541) SITE 149
Alias: PICA-149

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives

Media of Concern: Soil

Phases	Start	End
PA	197607	198105
SI	198910	199103
RI/FS	199502	201401
RD	200709	201403
RA(C)	200709	201406

RIP Date: N/A

RC Date: 201406

SITE DESCRIPTION

Building 541 was constructed in 1943 to perform the water drying process to harden explosive powder grains. Operations ceased in the mid-1950s, and the building was used to house two Plymouth gas locomotives during the 1960s. Building 541 was demolished under TECUP in 1983.

During its use as a water drying process facility, Building 541 received shipments of explosive powder, transported by railroad from Building 533. PTA personnel reported that a vat in Building 541 ruptured, causing liquid containing propellant to leak onto the building floor and to the outside area. The solution was reported to be single-base propellant grains dissolved in solvents. The energetic compounds were nitrocellulose and/or nitroglycerine. The solvents were ether, alcohol, and/or acetone.

Phase II RI activities conducted at this site in 1996 included the installation of two monitoring wells, and the collection of soil and groundwater samples. SVOCs and 2,4-dinitrotoluene (DNT) were detected in the soil at concentrations greater than LOCs during the Phase II RI. Additional RI sampling was conducted in 2001 to complete the delineation of the soil contamination. Results of a HHRA found that the risk from exposure to surface soil at the site exceeds the target level of 1 by 10(-4). The hazard from surface soil exposure is equal to the target threshold level of 1. Risks and hazards from subsurface soil exposure are below the target levels.

In 2003, PICA-064, -073, -074, -140, -142, -146, -148, -149, -150 and -156 were listed as RC in AEDB-R and will be addressed under PICA-085.

PICA-085 now represents the funding associated with former PICA-064, -073, -074, -148, -156, -140, -142, -146, -149 and -150.

The site is included in five sites FS and includes PICA-149, PICA-011, PICA-131, PICA-097, PICA-107.

PICA 149 is included in the five sites FS. Removal and off-site disposal of a small hotspot with LUCs is the expected remedy. This site has been reopened because of that requirement.

CLEANUP/EXIT STRATEGY

A PP and an NFA ROD will be completed in FY14.

Site ID: PICA-155
Site Name: TECUP BUILDINGS SITE 178
Alias: PICA-155

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

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

Media of Concern: Soil

Phases	Start	End
PA	197607	198105
SI	198910	199103
RI/FS	199502	201401

RIP Date: N/A

RC Date: 201406

SITE DESCRIPTION

Site 178 consists of buildings that have been demolished under TECUP which was instituted in the 1980s to safely demolish potentially contaminated buildings. The buildings were used for a variety of purposes ranging from munitions production to inert storage. The majority of the TECUP operations were performed in the 1980s. Prior to 1981, formal records of building demolition operations were not maintained. Between 1981 and 1989, approximately 145 buildings at PTA were demolished under TECUP, after being decontaminated by fire or washing. After the decontamination process, the buildings are demolished and the area graded. In the past, buildings were sometimes demolished and buried-in-place without any preparatory decontamination measures. After 1989 the frequency of TECUP operations dropped off until recently. Since 1998 TECUP operations have resumed and nearly all buildings, along the eastern shore of Picatinny Lake, have been demolished.

During the Phase II RI three former building areas were investigated. Soil samples were collected at Building 269, a former primer loading facility; Building 557, a former propellant plant; and Building 565, a former propellant plant. SVOCs, dioxins and lead were detected above LOCs in the soil at these former buildings. The SVOC and dioxin concentrations may be related to the use of diesel fuel and/or treated wood to burn the buildings. Additional samples were collected at all three former building areas in 2001 to delineate the existing soil contamination. HHRAs were completed for each former building. Results of the HHRAs for each former building indicate risk and hazard levels below the target levels of 1 by 10(-4) and one, respectively. Lead was not identified as a health concern in surface or subsurface soil at any of the former buildings with the exception of subsurface soil at former Building 565. Results of the ERA suggest that there is little potential risk to terrestrial species from soil exposure at the site. Additional soil sampling was conducted in 2008 to investigate 31 additional buildings affected by TECUP as requested by the NJDEP. Risk and hazard were calculated by as acceptable per this sampling. This information was incorporated into the FS (the Non-Lakes FS) that was submitted in September 2009.

The site is being addressed by the ARCADIS PBC until ROD.

The site is included in Non-Lakes FS.

PICA-145 is included with the Non-Lakes FS which includes PICA-145, -155, -184 and -195.

It is expected that the FS will be approved in FY13 or early-FY14, a PP will be publicly advertised and a ROD signed by January 2014. The ROD is expected to be an NFA with monitoring of land use ROD as the site has acceptable risk and would, therefore, be consistent with the basis of the USEPA letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as an NFA as existing LUCs prevent a different land use.

The Army has agreed to the notification and certification as required by USEPA; however, because it is an NFA, no action is required to perform an RD or the implementation of LUCs.

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

CLEANUP/EXIT STRATEGY

A PP and an NFA ROD will be completed in FY14.

Site ID: PICA-155
Site Name: TECUP BUILDINGS SITE 178
Alias: PICA-155

Site ID: PICA-162
Site Name: SHELL BURIAL AREAS NEAR SITE 5
Alias: PICA-162

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

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

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	197607	198105
SI	198910	199103
RI/FS	199603	201401

RIP Date: N/A

RC Date: 201401

SITE DESCRIPTION

The site 5 Shell Burial Area is located northwest of Building 3150, at the intersection of Schrader Road and Gately Road. The area is in the vicinity of a crater caused by the 1926 Lake Denmark explosion. Exploded and UXO, as well as building debris from the explosion, was deposited in the crater. The 1.5 acre area, under the control of the US Naval Ammunition Depot, continued to be used as an ordnance dumping area until 1945. The area was then covered with about 20 feet of fill material, fenced, and marked with warning signs. Approximately 25 tons of debris and ordnance were deposited in both this shell burial area and the shell burial area located near Building 3100. Ordnance in the shell burial areas included: mines, depth charges, fuses, projectiles, explosives, ammunition, propellants, and possibly rocket fuels. A 1981 Installation Assessment addendum stated that the shell burial areas also contained acids, pickling liquors, cyanide, phenol, and metals.

Dames and Moore performed an SI in 1989 to investigate groundwater VOC contamination which was detected in one well installed and sampled in 1981 at Site 5A; an analysis of the groundwater for VOCs, explosives, metals, and components of solid propellants was included as part of the SI. Compounds were not detected at levels greater than LOCs during the 1989 SI. RI activities were conducted from 1998 to 2001, including the installation and sampling of groundwater monitoring wells. Groundwater, surface soil, and subsurface soil samples were analyzed for VOCs, SVOCs, explosives, metals, cyanide, and anions. Three rounds of groundwater sampling have been conducted to date at Site 5, as part of the Phase III-1A RI. Cyanide and VOCs were detected at concentrations exceeding the LOC in groundwater, during the first round of sampling. One VOC (PCE) was present in excess of LOCs during the two subsequent rounds of groundwater sampling. Results of the HHRA indicated the risk and hazards from exposure, at the site, are below the target levels of 1 by 10(-4) and one, respectively. A BERA was performed for this site in spring and summer 2005. Although the food web models indicated that adverse effects on reproduction in small mammals or birds could occur given sufficient exposure to site COPECs in northeastern Area L, the field investigations and RSA results indicated that effects, if any, were not impacting the local populations of small mammals or birds.

In 2003 PICA-052 was listed as RC in the AEDB-R and will be addressed under PICA-162.

The site is addressed by the ARCADIS PBC. An FS (the 45 Site FS) was submitted in October 2009.

The site is included in FS for PICA 11 LUC group of sites, the 45 site FS (PICA-11, -50, -75, -91, -97, -108, -122, -134, -135, -136, -162, -175, -200, -209).

A PP and a ROD will be completed. Groundwater will be addressed by the MidValley Groundwater site (PICA 204) and MEC will be addressed by the MMRP under site PICA-010-R-01 (Shell Burial Grounds).

It is expected that the FS will be approved in FY13 or early-FY14, a PP will be publicly advertised and a ROD signed by January 2014.

The ROD is expected to be an NFA with monitoring of land use ROD as the site has acceptable risk and would, therefore, be consistent with the basis of the USEPA letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as an NFA as existing LUC prevent a different land use.

The Army has agreed to the notification and certification as required by USEPA; however, because it is an NFA, no action is

required to perform an RD or the implementation of LUCs.

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

CLEANUP/EXIT STRATEGY

A PP and an NFA ROD will be completed in FY14.

Site ID: PICA-163
Site Name: PropellInt/Rcket Prod 1300/1400 Area
Alias: PICA-163

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals, Polychlorinated Biphenyls (PCB), Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	197607	198105
SI	198910	199103
RI/FS	199606	201310

RIP Date: N/A

RC Date: 201310

SITE DESCRIPTION

Building 1301, constructed in 1945 and demolished in 2005, consisted of eight separate RI activities which were conducted from 1998 to 2000. Included as parts of the RI were a soil gas survey and VOC, PAH, PCB, explosives, and metals analyses of surface soil, subsurface soil, surface water, sediment, and groundwater. Lead was detected at concentrations in excess of LOC in paint chip samples and numerous soil samples collected in the vicinity of the catch basin discharges, in the woods west of Building 1301. Results of the HHRA indicated the risks and hazards at the site are below the target risks. A BERA was conducted in spring and summer 2005. Although the food web models indicated that adverse effects on reproduction in small mammals or birds could occur given sufficient exposure to site COPECs in southern Area L, the field investigations and RSA results indicated that effects, if any, were not impacting the local populations of small mammals or birds. All lead-lined troughs and catch basins were removed in 2002 and lead-contaminated soil (62 cy) directly adjacent to Building 1301 was removed as part of the facility wide sump and dry well investigation. Metals-contaminated soil remains in the vicinity of the catch basin discharges in the woods west of Building 1301.

In 2003, PICA-021, -168, -169, -172, and -174 were listed as RC in the AEDB-R and will be addressed under PICA-163.

PICA-163 now represents funding associated with former PICA sites PICA-168, -169, -021, -174, and -172.

The site is addressed by the ARCADIS PBC. An FS including this site was approved in September 2009. A PP was submitted in January 2010.

An FS was approved by the USEPA in August 2009. The original PP was submitted in January 2010. The USEPA provided comments during the review process in FY10 and FY11 that indicated that they would not be satisfied with only ICs and would require ECs.

The USEPA requested and Army submitted the "25 Site Table" that provided summaries of the sites so the USEPA and the NJDEP could determine if the LUCs proposed for the sites comply with the USEPA policy.

The USEPA had technically approved the NFA with monitoring of land use PP for 25 PTA sites within PICA 001, 006, 022, 085, 143, 146, 163, 171, 192, and 199 in a letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as a NFA as existing LUCs prevent a different land use. The Army has agreed to notification and certification; however, because it is a NFA, no action is required to peform an RD or the implementation of LUCs.

This PP is expected to be publicly advertised in March of 2013 and the ROD signed by USEPA and Army by the end of the FY13. It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

The site is included in the PP for the PICA 1 LUC group (ARCADIS 25 site FS) and detailed in the summary table and associated figures.

The monitoring and certification required by USEPA to ensure the current land use and exposure scenarios for this site are maintained will be funded under program management funding. The LTM costs are included in the IRP PBC.

Site ID: PICA-163
Site Name: PropelInt/Rcket Prod 1300/1400 Area
Alias: PICA-163

CLEANUP/EXIT STRATEGY

An NFA ROD is expected in FY14.

Site ID: PICA-164
Site Name: RESERVOIR NEAR BLDG 3159 SITE 103
Alias: PICA-164

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals, Volatiles (VOC)

Media of Concern: Sediment, Soil

Phases	Start	End
PA	197607	198105
SI	198910	199103
RI/FS	199606	201406
RD	201408	201412
RA(C)	201501	201506
LTM	201507	204409

RIP Date: N/A

RC Date: 201506

SITE DESCRIPTION

The 16,000,000-gallon reservoir [explosives ordnance disposal (EOD) pond], located near Building 3159, was constructed sometime between 1951 and 1953. Prior to its construction, the reservoir was an undeveloped marsh area. The reservoir is encased by a berm, ranging from one to at least 10 ft in height, and the maximum depth of the reservoir is seven ft. The reservoir has one inlet, from a stream on the southeast side, and one formal outlet to a culvert on the north side that is controlled by an overflow valve. The reservoir also has a second, overflow outlet located on the east side.

Buildings 3137, 3155, 3157, and 3159, along with several foundations remaining from the 1926 Lake Denmark explosion, surround the reservoir. No spills have been documented from the four surrounding buildings into the reservoir. Materials associated with the area surrounding the reservoir may include pesticides (variety), flammable materials (unknown), PCBs, and possible ordnance.

A USAEHA investigation was conducted at the reservoir in 1984, and at nearby Building 3157 in 1988. Elevated levels of chromium and copper were detected in sediment from the reservoir, and mirex was detected in one surface soil sample collected near Building 3157. As part of the 1996 PA/SI, surface soil, surface water, and sediment were analyzed for VOCs, SVOCs, pesticides/PCBs, metals, and anions. Metals were detected in surface soil and surface water at concentrations greater than LOC. Based upon results of the PA/SI and USAEHA investigations, RI activities were conducted between 1998 and 2000. Activities conducted as part of the RI included geophysical surveys and surface water/sediment sampling for VOCs, pesticides/ PCBs, explosives, and metals. The geophysical survey suggested the presence of several areas likely to possess ferrous objects. However, results of the surface water and sediment sampling revealed limited number of metals detections in sediment, slightly above LOC and no exceedences in surface water. Results of the HHRA indicate risks and hazards are below the target levels for the on-site youth visitor. A baseline ERA was conducted for the aquatic ecosystem in spring and summer 2005 as part of the Phase III ERA. The overall weight-of-evidence suggests that the aquatic ecosystem in the reservoir run is not adversely affected by the presence of site-related COPECs in the surface water or sediment. PICA-164 is included in the lakes FS.

The ROD is expected for this site in late-2013 as USEPA has requested additional investigation of Picatinny Lake. The USEPA Project Manager said in an October meeting that: "...his management would not approve a draft document that does not included the fishing restrictions as an CERCLA IC because the site is not available for unrestricted use and unlimited exposure." The Army concurred that fishing restrictions are a state-wide issue and that the ICs be incorporated in CERCLA DDs even though this is a CERCLA-led site.

A revised FS that included this site was submitted in spring of 2012. A PP is expected to be submitted early in calendar year 2013.

CLEANUP/EXIT STRATEGY

Site ID: PICA-164
Site Name: RESERVOIR NEAR BLDG 3159 SITE 103
Alias: PICA-164

A ROD is anticipated in FY14.

The LTM LUCs costs will be included in the IRP PBC (PBC Picatinny) through December 2014. A follow-on contract will need to be awarded in FY14.

Site ID: PICA-171
Site Name: ORDNANCE BLDG/EXPLOSIVES PROD.
Alias: PICA-171

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals, Polychlorinated Biphenyls (PCB), Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern: Soil

Phases	Start	End
PA	197607	198105
SI	198910	199103
RI/FS	199606	201310

RIP Date: N/A

RC Date: 201310

SITE DESCRIPTION

Site 171 consists of Buildings 3106, 3109 and 3111. All three buildings were used as magazines while under naval ownership. Currently, the buildings are used for physical and environmental testing of ordnance items.

Building 3106 was used to store magnesium powder, oxidizers, explosives, and rocket fuels. In 1964 and 1965, Building 3106 was modified for use as an environmental test facility and is still used to evaluate packaging materials etc. Three dry wells are located on the north side of Building 3106. A drop tower (Building 3145) is located northeast of the building. Two dry wells were associated with Building 3109, which only received steam condensate. The Navy constructed Building 3111 in 1943 for use as a smokeless powder storage building. In the 1960s, the building was converted as an air gun facility.

A TPH-contaminated soil removal was conducted in the early-1990s, in an area of an old oil vapor containment drum, at Building 3111.

A PA/SI was conducted in 1996. Metals and PAHs were detected in soil at concentrations exceeding the LOC. Based upon results of the PA/SI, PICA-171 was included as part of the Phase III 2A/3A RI. RI activities included the analysis of surface soil, subsurface soil, and groundwater for VOCs, SVOCs, explosives, PCBs, metals, and perchlorate. Metals, PCBs and PAHs were detected at concentrations greater than LOC in surface soil. Results of a HHRA indicate the risks and hazards from soil exposure are below the target levels of 1 by 10(-4) and one, respectively; however, lead in the soil is a potential concern. The BERA performed in 2005 concluded that although the food web models indicated that adverse effects on reproduction in small mammals or birds could occur given sufficient exposures to site COPECs in northeastern Area L, the field investigations and RSA results indicated that effects, if any, were not impacting the local populations of small mammals or birds.

Groundwater contamination is being addressed on an area-wide basis as part of the Mid-Valley investigation. Approximately 180 cy of metals-contaminated soil were removed in 2004. Post-excavation data indicate that elevated lead levels have been eliminated.

In 2003, PICA-173 was listed as RC in the AEDB-R and will be addressed under PICA-171.

The site is addressed by the ARCADIS PBC. An FS with this site was approved in September 2009.

The USEPA requested and Army submitted the "25 Site Table" that provided summaries of the sites so the USEPA and the NJDEP could determine if the LUCs proposed for the sites comply with the USEPA policy.

The USEPA had technically approved the NFA with monitoring of land use PP for 25 PTA sites within PICA 001, 006, 022, 085, 143, 146, 163, 171, 192, and 199 in a letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as a NFA as existing LUCs prevent a different land use. The Army has agreed to notification and certification; however, because it is a NFA, no action is required to perform an RD or the implementation of LUCs.

This PP is expected to be publicly advertised in March of 2013 and the ROD signed by EPA and Army by the end of the FY13. It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

Site ID: PICA-171
Site Name: ORDNANCE BLDG/EXPLOSIVES PROD.
Alias: PICA-171

The site is included in the PP for the PICA 1 LUC group (ARCADIS 25 site FS) and detailed in the summary table and associated figures.

The monitoring and certification required by USEPA to ensure the current land use and exposure scenarios for this site are maintained will be funded under program management funding.

CLEANUP/EXIT STRATEGY

An NFA ROD is expected in FY14.

Site ID: PICA-175
Site Name: ORDNANCE BLDGS in 600-AREA
Alias: PICA-175

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals

Media of Concern: Soil

Phases	Start	End
PA	197607	198105
SI	198910	199103
RI/FS	199606	201401

RIP Date: N/A

RC Date: 201401

SITE DESCRIPTION

Building 611, constructed in 1965, has been used for the testing of small munitions since its construction. According to an undated transformer inventory, there are three 75-KVA transformers located inside the building. The transformers are considered to be PCB transformers. According to the PTA transformer database compiled in 1988, the transformers were in fair condition at that time and contained 34 gallons of dielectric fluid.

Although little information exists regarding the testing practices at the range area, interpretation of historic maps and aerial photographs indicate that guns were placed in the area southwest of Building 611, and fired into the slug-butt near Building 611-A. The slug-butt is still on the hillside in a deteriorated condition. This range area was used from the late-1920s to the 1940s. Currently, the ground floor of Building 611 is divided into two steel-lined blast chambers and a work area. The southern blast chamber is used only for storage and parking of vehicles, while the northern blast chamber is used to test warheads, fuses, and primers. Building 611 is also equipped with a portable X-ray unit and a darkroom for the development of X-ray films. The darkroom is located on the second floor above the work area at the south end of the building. Building 611 has a RCRA-permitted satellite waste accumulation area located inside the building. Materials stored in the area include used spray paint cans, X-ray developer and fixer.

Dye tests performed in 1991 indicate that all water from Building 611, including the darkroom sink, discharges to the sanitary sewer system (Foster Wheeler, 1991). A PA/SI was conducted in 1996. Contaminants were not detected at concentrations greater than LOC. In 2000, RI sampling was performed to characterize the slug butt area and the DU test area at Building 611B. Elevated levels of metals were reported at the slug-butt; subsequent sampling has delineated the extent of the soil contamination. A monitoring well was installed in 2001, and sampled in 2002 to determine the groundwater quality downgradient of the slug-butt. Analytical results indicate the groundwater has not been impacted by the former testing operations at the site. Results of a HHRA indicate the risks and hazards from soil exposure at the site are below the target levels of 1 by 10(-4) and one, respectively; however, lead in the surface soil is a potential health concern.

Although several contaminants have been identified that could pose a risk to wildlife at the site if there was significant opportunity for exposure, the size of the affected area, the poor habitat (a slope littered with metallic debris and devoid of vegetation), as well as its location far from other contaminated sites within the Installation, suggest that any further ecological investigations beyond the SLERA are not warranted.

In 2003 PICA-133, -178, -179, and -180 were listed as RC in the AEDB-R and will be addressed under PICA-175.

PICA-175 now represents funding associated with former sites PICA-133, -178, -179, and -180. The site is addressed by the ARCADIS PBC. An FS was submitted in October 2009.

The site is included in the FS for PICA 11 LUC group of sites, the 45 site FS (PICA-11, -50, -75, -91, -97, -108, -122, -134, -135, -136, -162, -175, -200, -209).

A PP and a ROD will be completed.

It is expected that the FS will be approved in FY13 or early-FY14, a PP will be publicly advertised and a ROD signed by January 2014.

The ROD is expected to be an NFA with monitoring of land use ROD as the site has acceptable risk and would, therefore, be consistent with the basis of the USEPA letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as an NFA as existing LUCs prevent a different land use.

The Army has agreed to the notification and certification as required by USEPA; however, because it is an NFA, no action is required to perform an RD or the implementation of LUCs.

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

CLEANUP/EXIT STRATEGY

A PP and an NFA ROD will be completed in FY14.

Site ID: PICA-184
Site Name: BUILDINGS(1600,1601,1609,1610) SITE 94
Alias: PICA-184

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA	197607	198105
SI	198910	199103
RI/FS	199606	201401

RIP Date: N/A

RC Date: 201401

SITE DESCRIPTION

Site 94 consists of Buildings 1609 North, 1909 South, and 1610 and former Buildings 1600, 1601, and 1604. Buildings 1601 and 1604 were demolished in 2001. Building 1600 was used for explosives testing since its construction in 1949 as a test chamber until it was demolished in 2005. Until 2001, it was being used for physical testing of HEs. Building 1601 was once used for explosives testing, but since the 1970s it was used as a photographic laboratory. There was a small pit/sump that was about two by two by two feet at the northeast corner of the building.

Building 1604 was built in 1942 as a flare and pyrotechnics assembly plant and was listed as an ordnance facility in 1977; however, an extension to the north in 1949 added a plating facility. The building was inactive except for several rooms that in recent years have been used for storage. Building 1609 South was constructed in 1942 as a machine shop, while Building 1609 North was constructed in 1951 as a physics laboratory. From 1962 until the present, Building 1609 has been used as a powder metallurgy laboratory. The installation personnel also indicated that from approximately 1970 to the mid-1980s, Building 1609 made tungsten cubes for use in the warhead of the Patriot missile. Building 1610 was constructed in 1942 as a change house and office building for workers in the 1600 Area. Change house operations were discontinued at the building around 1973. The entire building has been used as an office building for various government and private agencies.

A PA/SI was conducted in 1996. Metals were detected in soil at concentrations greater than LOC. A soil gas survey, as well as surface soil, subsurface soil, surface water, sediment, and groundwater sampling for VOCs, explosives, and metals was conducted from 1998 to 1999. Metals were detected in soil at concentrations greater than LOC. About 25 cy of metals-contaminated soil were removed from the area of the former sand basin on the south side of Building 1601. HHRA results indicate risks and hazard are within the target levels. A SLERA was conducted in 2004 and a determination was made that no further ERA is warranted due to the small size of the affected area, its location far from other contaminated sites, and the removal of metals-contaminated soil in select areas.

The site is addressed until ROD by the ARCADIS PBC. An FS was submitted in fall 2009.

The site is included in Non-Lakes FS.

A PP and a ROD will be completed.

PICA-145 is included with the Non-Lakes FS which includes PICA-145, -155, -184 and -195.

It is expected that the FS will be approved in FY13 or early-FY14, a PP will be publicly advertised and a ROD signed by January 2014.

The ROD is expected to be an NFA with monitoring of land use ROD as the site has acceptable risk and would, therefore, be consistent with the basis of the USEPA letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as an NFA as existing LUC prevent a different land use.

The Army has agreed to the notification and certification as required by USEPA; however, because it is an NFA, no action is required to perform an RD or the implementation of LUCs.

Site ID: PICA-184
Site Name: BUILDINGS(1600,1601,1609,1610) SITE 94
Alias: PICA-184

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

CLEANUP/EXIT STRATEGY

A PP and a ROD will be completed in FY14.

Site ID: PICA-192
Site Name: APPLE TREES RECREATIONAL AREA
Alias: PICA-192

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals, Pesticides

Media of Concern: Soil

Phases	Start	End
PA	197607	198105
SI	199202	199204
RI/FS	199502	201310

RIP Date: N/A

RC Date: 201310

SITE DESCRIPTION

This site is an apple orchard and recreational area. A 1938 PTA map indicates that the site is an apple orchard.

In 1992, the USAEHA performed a health risk assessment study at the site. As part of the study, surface soil samples were collected from the orchard and analyzed for VOCs, SVOCs, and metals. Arsenic was the only compound that exceeded its LOC. The source of the arsenic is believed to be the application of arsenic-based pesticides to control insect predation on the apples. The USAEHA concluded that arsenic concentrations in surface soil, at the apple orchard, posed a human health risk.

In 2000, an extensive soil sampling program was conducted to determine the extent of arsenic contamination at the orchard. The sampling determined that the arsenic contamination was widespread throughout the orchard; however, the contamination appears to be limited to the top one to two feet of soil, because subsurface soils (two to three feet bgs) did not contain elevated levels of arsenic. As a result, an EE/CA was prepared to provide a recommendation for a removal action at the site. The EE/CA evaluated two alternatives (a multi-layer cap and excavation with off-site disposal). The EE/CA was never implemented. Preliminary results from a phytoremediation treatability study have indicated arsenic levels in the ferns are about four to seven times the levels in the soil. Results of a HHRA for industrial worker exposures indicate risk from surface soil exposure at the site exceeds the target level of 1 by 10(-4). The hazards from surface soil exposure are below the target level of one. Risks and hazards from subsurface soil exposure are below the target levels.

In spring 2004, this site was reclassified by the Army from an apple orchard to a recreational area. In response to regulatory comments on the RI report and the reclassification of the site, additional sampling was conducted at the site in summer of that year. Six surface soil samples were collected and analyzed for pesticides and lead.

Organochlorine pesticides [dichlorodiphenyldichloroethane (DDD), DDT, and dichlorodiphenyldichloroethene (DDE)] were detected in all six samples, but only the samples collected adjacent to the apple trees had LOC exceedances.

Based on the current use of the site as a recreational area, an HHRA was conducted for worker and residential recreational exposures. Results from the recreational HHRA indicate risks and hazards are below the target levels. Based on the results of the recreational exposure HHRAs, an FS was prepared to evaluate remedial alternatives for the contaminated soil.

The FS was approved by the USEPA in September 2009. A PP for the site was submitted in January 2010. The site is addressed by the ARCADIS PBC.

The USEPA requested and Army submitted the "25 Site Table" that provided summaries of the sites so the USEPA and the NJDEP could determine if the LUCs proposed for the sites comply with the USEPA policy.

The USEPA had technically approved the NFA with monitoring of land use PP for 25 PTA sites within PICA 001, 006, 022, 085, 143, 146, 163, 171, 192, and 199 in a letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as a NFA as existing LUCs prevent a different land use. The Army has agreed to the notification and certification; however, because it is a NFA, no action is required to peform an RD or the implementation of LUCs.

This PP is expected to be publicly advertised in March of 2013 and the ROD signed by USEPA and Army by the end of the FY13.

Site ID: PICA-192
Site Name: APPLE TREES RECREATIONAL AREA
Alias: PICA-192

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

The site is included in PP for the PICA 1 LUC group (ARCADIS 25 site FS) and detailed in the summary table and associated figures.

The monitoring and certification required by USEPA to ensure the current land use and exposure scenarios for this site are maintained will be funded under program management funding.

The site is included in the ARCADIS PBC. The LTM costs are included in the IRP PBC.

CLEANUP/EXIT STRATEGY

An NFA determination is anticipated in FY14.

Site ID: PICA-193
Site Name: GREEN POND AND BEAR SWAMP BROOK SITE 190
Alias: PICA-193

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals, Pesticides, Polychlorinated Biphenyls (PCB), Polycyclic Aromatic Hydrocarbons (PAH), Semi-volatiles (SVOC)

Media of Concern: Sediment, Surface Water

Phases	Start	End
PA	197607	198105
SI	198910	199103
RI/FS	199309	200507
RD	200108	200702
IRA	200308	200410
RA(C)	200604	200709
LTM	200710	202109

RIP Date: N/A

RC Date: 200709

SITE DESCRIPTION

The GPB Study area begins at the outfall of Picatinny Lake and extends to the southern installation boundary. The BSB area begins on Green Pond Mountain and extends until BSB's confluence with GPB. These two brooks are the main drainage way for the watershed on the southern portion of Picatinny. These two brooks flowed past several industrial areas that previously had surface water discharges. PICA-193 includes both study areas.

There have been numerous investigations of GPB/BSB since 1983. Investigations were carried out by the USGS (1988, 1990, and 1991), Metcalf and Eddy (1991), the USAEHA (1991), and Dames and Moore (1989). These investigations cumulatively collected over 100 surface water and sediment samples. The site underwent an RI in 1994 and 34 additional surface water/sediment samples were collected and analyzed for VOCs, BNAs, metals, cyanide, explosives, pesticides, PCBs, and TPH. A subset of these samples was analyzed for dioxins and radionuclides. The HHRA calculated a risk of 8 by 10(-6) for trespasser swimmers (PCBs and dioxins/furans), 2 by 10(-4) for fish consumers (arsenic and PCBs). The ERA determined that there did not appear to be any grossly evident contaminant related impacts, but the contaminant food chain model suggested a potential for impacts.

In 1999, an FS data gap investigation took place and an additional 13 surface water/sediment samples and 42 sediment samples were collected and analyzed for VOCs, SVOCs, pesticides, PCBs, explosives, metals, anions, and radiologicals with a smaller number of samples analyzed for dioxins. There were exceedances of VOCs, SVOCs, pesticides, PCBs, explosives, anions, and metals criteria in surface water, and VOCs, SVOCs, pesticides, PCBs, and metals criteria in sediment. Potential effect levels were calculated and based upon the number and severity of the effect level exceedances AOCs were identified and an FS was performed. The AOCs in three regions are: Region 2 - Site 52, 95, and 96 impacted with SVOCs, PCBs, and pesticides; Site 101 with copper; Region 3 - Area H containing mercury and pesticides and Area D basins containing metals, SVOCs, pesticides and PCBs; Region 4 - containing copper. The FS recommends chemical and biological monitoring for Regions 2 and 4, and excavation and off-site disposal for Region 3. The FS has been approved by the regulators. PICA-193 includes all three regions.

A PP and public meeting were completed in December 2003.

PICA-194 has been combined with PICA-193, BSB, and both are being addressed concurrently under PICA-193. Thus, PICA-194 is considered RC. Remediation of the sediment basins (as an IRA) was completed in late 2003.

The ROD for this site was signed in July 2005. An RD was submitted to the regulators in April 2006. The RD was approved in March 2007. In September 2007, 900 tons of imported sediment was removed from the oil/water separator and 13 tons of impacted sediments was excavated near RI site 34 in Region 3. The chemical and biological monitoring was also conducted in each year from 2007 through 2012 and expected for 2013. Data reports and LUC certifications have been submitted annually since 2007.

Site ID: PICA-193

Site Name: GREEN POND AND BEAR SWAMP BROOK SITE 190

Alias: PICA-193

CLEANUP/EXIT STRATEGY

The sampling will continue until 2021 and LUCs maintained as specified in the RD.

Site ID: PICA-195
Site Name: BLDGS IN 1400/1300/3100/1000 AREAS
Alias: PICA-195

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	197607	198105
SI	198910	199103
RI/FS	199606	201401

RIP Date: N/A

RC Date: 201401

SITE DESCRIPTION

Building 3150 is on the southeastern PTA boundary. Building 3150 was constructed in 1942 as a storage building. Currently it houses a precision machine shop (85,592 square ft) and a gymnasium (8,285 square ft). The metal fabrication machine shop, which also has a waste storage area, is at the north corner of the basement of the building.

A document review has been completed for this site to investigate the potential for impact to groundwater from the site. The document review indicated materials handled in the building included lubricating oils, metal cuttings and degreasers. This site is adjacent to site 5 (Shell Burial Area). Chlorinated solvent contamination has been detected at site 5, and site 77 could be a potential upgradient source. No RI has taken place at the building.

In 2003, PICA-037, -080, -081, -082, -164, -165, -166, -167, and -170 were listed as RC in the AEDB-R and will be addressed under PICA-195.

PICA-195 now represents funding associated with former sites PICA-170, -037, -167, -081, -082, -164, -080, -165, and -166.

The site is addressed by the ARCADIS PBC until ROD. An FS was submitted in September 2009.

PICA-145 is included with the Non-Lakes FS which includes PICA-145, -155, -184 and -195.

It is expected that the FS will be approved in FY13 or early-FY14, a PP will be publicly advertised and a ROD signed by January 2014.

The ROD is expected to be an NFA with monitoring of land use ROD as the site has acceptable risk and would, therefore, be consistent with the basis of the USEPA letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as an NFA as existing LUCs prevent a different land use.

The Army has agreed to the notification and certification as required by USEPA; however, because it is an NFA, no action is required to perform an RD or the implementation of LUCs.

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

CLEANUP/EXIT STRATEGY

An NFA determination is anticipated in FY14.

Site ID: PICA-199

Site Name: FORMER PISTOL RANGE DUMP&NAVY MANURE PIT

Alias: PICA-199

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals, Pesticides, Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern: Soil

Phases	Start	End
PA	199312	199404
SI	199408	199509
RI/FS	199703	201310

RIP Date: N/A

RC Date: 201310

SITE DESCRIPTION

Site 199 consists of an abandoned pistol range and a former dumping area. The pistol range was active from approximately 1936 to 1980. This range was approved for pistol, shot gun, and tear gas rounds. The range is presently in poor condition. Building 3054 and an unnumbered building are the only two structures located at the site. Both of these shacks are wooden and presently store debris.

The area to the north of the pistol range was used as a dumping area. The former dumping area is about one acre. The former dumping area contains construction and demolition debris, as well as domestic trash. The debris consists of crushed metal drums, car parts (e.g., batteries, an engine block), glass, ceramics, terra cotta pipe, shingles, coal, construction buckets, soda cans, and solidified paint wastes. No information was available regarding the dates in which wastes were placed at the former dumping area; however, the type of trash present at the former dumping area suggests that the site was active from the 1920s to the mid-1930s, with sporadic activity as late as 1970. A 1940 naval ammunition depot map indicated that a manure pit occupied the southeastern half of site 199.

As part of the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) relative risk site evaluation (RRSE), antimony and lead were detected at concentrations greater than their respective LOCs. In order to further characterize the site, soil and groundwater samples were collected at the site in 2000. Elevated lead levels were reported in soil samples collected from the pistol range portion of the site. Elevated levels of arsenic, zinc, and PAHs were detected in the soil samples collected from the former dumping area in association with buried debris. The HHRA indicates that the risk from exposure to impacted site media is above the target risk levels, but below the target hazard level. Lead was also determined to be a health concern at the site. A reevaluation performed in 2007 for HHRA found risk to be within the USEPA target of 1 by 10(-4) to 1 by 10(-6) and non-carcinogenic hazards below one for the current and reasonably anticipated future use. The adult lead blood model was also updated to reflect current guidance and determined that lead is not a health concern at this site.

This site is addressed by the ARCADIS PBC. The FS was approved in August 2009 by the USEPA.

The USEPA requested and Army submitted the "25 Site Table" that provided summaries of the sites so the USEPA and the NJDEP could determine if the LUCs proposed for the sites comply with the USEPA policy.

The USEPA had technically approved the NFA with monitoring of land use PP for 25 PTA sites within PICA 001, 006, 022, 085, 143, 146, 163, 171, 192, and 199 in a letter dated No. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as a NFA as existing LUC prevent a different land use. The Army has agreed to notification and certification; however, because it is a NFA, no action is required to perform an RD or the implementation of LUCs.

This PP is expected to be publicly advertised in March of 2013 and the ROD signed by USEPA and Army by the end of the FY13. It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

The site is included in PP for the PICA 1 LUC group (ARCADIS 25 site FS) and detailed in the summary table and associated figures.

The monitoring and certification required by USEPA to ensure the current land use and exposure scenarios for this site are

maintained will be funded under program management funding. The LTM costs are included in the IRP PBC.

CLEANUP/EXIT STRATEGY

An NFA determination is anticipated in FY14.

Site ID: PICA-200
Site Name: AREA (L) OTHER BUILDINGS
Alias: PICA-200

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Polycyclic Aromatic Hydrocarbons (PAH), Volatiles (VOC)

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

Phases	Start	End
PA	199312	199404
SI	199408	199504
RI/FS	199512	201401

RIP Date: N/A

RC Date: 201401

SITE DESCRIPTION

Thirteen additional buildings in Area L are included as part of PICA-200. The following is a brief description of each building. Building 1030 was constructed in 1949 as an acid tank farm. Building 1037 was constructed in 1957 as a wastewater incinerator. Building 1038 was constructed in 1956 as a solvent storage/flammable material storehouse. Building 1090 was constructed in 1948 as an assembly and packing building. Building 1355 consists of three 4,000-gallon steel ASTs for the storage of spent nitric and sulfuric acid used in the production of nitroglycerine (NG). Building 1369 was constructed in 1948 as a glycerin heater. Building 1372 was constructed in 1948 as a change house and office for NG production operations. Building 1373-A was demolished sometime after 1987 under TECUP. The only chemical known to have been associated with Building 1373-A was acetone. Building 1414 was constructed in 1948 as a propellant dry house. Building 1414-A was constructed in 1942 as a fan house to serve the propellant dry houses (Buildings 1414 and 1415). Building 1415 was constructed in 1948 as a propellant dry house. Buildings 1414, 1414-A, and 1415 have been demolished. Building 1418 was constructed in 1942 as a storage and shipping building. Building 1437 was constructed in 1956 as a cast propellant plant.

The 7,500-gallon UST, formerly located at Building 1037, was sampled in 1988 and removed in 1990. Post excavation soils analysis for TPH indicated all concentrations were below LOC. An internal tank investigation was performed in 1993 at Buildings 1030 and 1038, in which tanks at Building 1038 were sampled and analyzed for toluene and toxicity characteristics leaching procedure (TCLP) metals. Detections were not above LOC. The tanks at Building 1030 were empty so samples were not collected.

The PICA-200 buildings were included as part of the 1996 PA/SI for VOCs, SVOCs, pesticides/PCBs, explosives, metals, and anions analysis in soil. Metals were detected above LOC at Buildings 1030, 1414, 1415, and 1437. PAHs were detected at concentrations greater than LOC at Building 1414-A. Based upon results of the PA/SI, Buildings 1030, 1037, 1038, 1090, 1414, 1414-A, 1415, and 1437 were included as part of the Phase III 2A/3A RI. Field activities performed in 2000 and 2001 identified metals exceedances in soil at Building 1030 and elevated levels of NC in the soil at Building 1415. The extent of this contamination has been delineated, and no further sampling is proposed.

In 2004 the stainless steel catch tank at Building 1437 was removed from the building and disposed of off-site as scrap metal.

Potential groundwater contamination is being addressed on an area-wide basis as part of the Mid-Valley investigation. HHRAs were completed for the individual buildings. Risk and hazards were below the target levels of 1 by 10(-4) and one for all buildings. Due to the small size of these buildings and the lack of surface soil contamination associated with these buildings, a SLERA concluded that no further ecological investigation is warranted for this site with the exception of former Building 1030. A BERA performed for former Building 1030 in 2005 included a benthic macroinvertebrate survey of Robinson Run. The results of the survey suggest that the benthic community of Robinson Run does not appear to be at any significant risk from the potential presence of contaminants from Area L sites in the surface water or sediment.

The site is addressed by the ARCADIS PBC. An FS was submitted in October 2009.

The site is included in the FS for PICA 11 LUC group of sites, the 45 Site FS (PICA 11, 50, 75, 91, 97, 108, 122, 134, 135, 136, 162, 175, 200, 209).

Site ID: PICA-200
Site Name: AREA (L) OTHER BUILDINGS
Alias: PICA-200

A PP and a ROD will be completed.

It is expected that the FS will be approved in FY13 or early-FY14, a PP will be publicly advertised and a ROD signed by January 2014.

The ROD is expected to be na NFA with monitoring of land use ROD as the site has acceptable risk and would, therefore, be consistent with the basis of the USEPA letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as a NFA as existing LUCs prevent a different land use.

The Army has agreed to the notification and certification as required by USEPA; however because it is an NFA, no action is required to perform an RD or the implementation of LUCs.

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

CLEANUP/EXIT STRATEGY

An NFA determination is anticipated in FY14.

Site ID: PICA-204
Site Name: MID-VALLEY GROUNDWATER
Alias: PICA-204

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Explosives, Metals, Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA	199309	199604
SI	199608	199806
RI/FS	199809	201209
RD	200604	201304
RA(C)	200604	201312
LTM	201402	204409

RIP Date: N/A

RC Date: 201402

SITE DESCRIPTION

The Mid-Valley region at PTA consists of study Areas F, G, H, and the northwestern part of Area L. A Phase I RI was completed in 1998 for Areas F and G at PTA. During that investigation, several COCs were identified in the groundwater at sites within the F and G study areas. These COCs included TCE, PCE, RDX, and metals. Calculations for the hypothetical future use of groundwater by future residents and workers exceeded the carcinogenic risk criteria of 1 by 10(-06), and the non-carcinogenic hazard criteria of one. The Phase I RI concluded that these COCs might have upgradient sources in Areas H (to the west) and L (to the east), which are impacting the groundwater in Areas F and G. Subsequent investigations have focused on the Area H and L study sites (Phase II and Phase III RIs, respectively); and on further characterizing the extent of contamination at the Area F and G study sites (Phase I Additional RI and Areas F and G groundwater investigation). During the Phase II and Phase III RIs, TCE, PCE, RDX, and metals were detected at concentrations greater than LOC in groundwater in Areas H and L.

A groundwater RI was started in late 2001 to delineate the plumes. A data gap investigation was started in 2003 and completed in 2004. The TCE plume is long and narrow and has moderate TCE exceedance conditions [TCE about 100 ug/L]. The TCE plume is over 5,000 feet long. The RDX plume covers a smaller area and has concentrations of about 80 ug/L.

Although an FS was approved in 2009; additional investigation revealed higher levels of TCE contamination near Building 3109. Over 10 additional wells were installed in the vicinity of Bldg 3109.

The PP was public noticed and the ROD signed in FY13. The action is for enhanced bioremediation for the TCE plume and MNA for the polishing of the TCE plume and MNA for the RDX plume. There is also a small soils removal to ensure the RDX contaminated soils do not add to the RDX plume.

The RD was approved in FY13 and the system is enhanced bioremediaiton and is expected to be operational in FY13. The groundwater monitoring system also includes the two shell burial areas. The groundwater monitoring system also includes the monitoring of the two shell burial sites (PICA 052 and 162) and the DRMO (PICA 072) which are all located in the Mid Valley Area.

As a note, the current CLIN for the PICA 204 is for LTM. Since the remedy will include MNA, as is correctly noted in AEDB-R, the site phase is not LTM but RAO.

The FS addendum was submitted and approved by the regulators in calendar year 2012. The PP has been submitted to the regulators.

The PP public advertisement and the signing of the ROD occurred in September 2012. The RD was approved in January 2013.

Site ID: PICA-204
Site Name: MID-VALLEY GROUNDWATER
Alias: PICA-204

CLEANUP/EXIT STRATEGY

The ROD includes enhanced bioremediation. The RD is being implemented and MNA is anticipated through 2044. RIP is anticipated in FY14. A follow-on contract will need to be awarded in FY14.

Site ID: PICA-205
Site Name: AREA B GROUNDWATER
Alias: PICA-205

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals, Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA	199309	199604
RI/FS	199608	200809
RD	200604	200809
RA(C)	200604	200809
RA(O)	200604	201310
LTM	201310	204409

RIP Date: 200809

RC Date: 201310

SITE DESCRIPTION

The groundwater in this area is being addressed independently of the other media. All other environmental media at this site are being addressed under PICA-066. There are two sites within Area B, site 20 (a pyrotechnic range) and site 24 (a sanitary landfill). Site 20 is located entirely within site 24. Site 24 consists of cleared, reclaimed/filled wetlands containing several small mobile buildings/sheds, ponds, and man-made drainage ditches. The most prominent feature of site 24 is the landfill pond that occupies an area of approximately one acre. Documentation indicates that fly ash, ordnance, industrial waste, and sludge from the water treatment plant were reportedly disposed of at site 24 until 1972. There is strong potential for an off-post production well to be operated nearby.

Groundwater investigation began from 1981 to 1984 when two wells were installed and sampled for VOCs and metals. A geophysical survey was performed in 1986. Three additional wells were installed and sampled for VOCs, SVOCs, metals, anions, and phenols in 1989. VOCs, metals, and anions were detected above LOCs. In 1994, the RI included geophysical, radiological, and soil gas surveys, and installation of more wells where VOCs and metals were detected above LOC. The HHRA was calculated to be above 1 by 10(-4) (assuming on-site consumption of groundwater). Follow-up geoprobe investigation in 1996 and additional well installations in 1998 and 1999 were all carried out to close data gaps associated with plume delineation or potential remedial alternatives. The most recent investigation included a redox-zonation to assess the potential for MNA. All of these investigations found elevated levels of VOCs in the two uppermost aquifers.

In April 2002, an FS was submitted which examined MNA, chemical oxidation, iron slurry injection, HRC, oxygen releasing compound, and P&T. The final FS recommends expedited treatment of groundwater using hydrogen releasing compound (HRC). Prior to this FS recommendation, the Army performed a pilot scale injection of iron slurry for chemical reduction of chlorinated organics. This work was completed in February 2002 but this process was not found to be effective at this site. An HRC pilot study was completed in fall 2004. The anticipated remedial alternative is injection of HRC or alternative amendments to try to meet cleanup standards within seven years.

The PP was finalized and the public notice completed in 2005. The ROD was submitted to the regulators in June 2008. A pilot injection test was completed in January 2007. The first quarterly amendment injection and monitoring was completed in September 2008. Amendment injections and monitoring have been ongoing since 2008. VOC concentrations are decreasing across the site.

This site is covered under the PBC.

CLEANUP/EXIT STRATEGY

The LTM costs are included in the IRP PBC. Groundwater monitoring will continue in FY14. Enhanced bioremediation will continue until 2044. A new contract is anticipated in FY14.

Site ID: PICA-206
Site Name: AREA C GROUNDWATER
Alias: PICA-206

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Dioxins/Dibenzofurans, Metals, Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA	199309	199604
RI/FS	199608	200908
RD	200908	200909
RA(C)	200909	200909
LTM	200911	203709

RIP Date: N/A

RC Date: 200909

SITE DESCRIPTION

This site, which is not included in the PBC, is approximately 126 acres in area and is in the southwestern portion of PTA, near the southern boundary of the arsenal. The area consists of the following six study sites: site 19 - Pyrotechnic Demonstration Area (AEDB-R Site ID PICA-020), site 23 - Post Farm Landfill (AEDB-R Site ID PICA-065), site 25 - Sanitary Landfill (AEDB-R Site ID PICA-067), site 26 - Dredge Piles from GPB (AEDB-R Site ID PICA-068), site 163 - Baseball Fields (AEDB-R Site ID PICA-092), and site 180 - Waste Burial Area (AEDB-R Site ID PICA-093).

PICA-206 covers all groundwater in Area C with the exception of site 23 groundwater. Due to the geographic and elevation differences between site 23 and all of the remaining sites in Area C, site 23 groundwater is being addressed along with the remaining media at site 23 (PICA-065). There are 47 wells in Area C and there is strong potential that an off-post production well operates nearby.

An area-wide groundwater assessment was performed as part of the 1994 RI. In the RI, groundwater exceedances were found for VOCs, one SVOC, and metals. The HHRA indicated that carcinogenic risk fell between or exceeded the 1 by 10(-6) to 1 by 10(-4) range. Carcinogenic risk is primarily from carbon tetrachloride, chloroform, TCE, arsenic, beryllium, heptachlor epoxide, and dioxins/furans. In 2001, additional rounds of groundwater samples were collected for VOCs, metals, explosives, perchlorate, and dioxins. Groundwater analyses were targeted to include only previous detections. Results indicated exceedances of VOCs and metals. Additional delineation of these samples was conducted in 2002, one year of quarterly sampling was conducted for the 16 southern boundary wells between fall 2002 and summer 2003, semiannual monitoring was conducted through 2004 and semiannual monitoring has been conducted since fall 2005. An FS was completed in 2005 in which continued implementation of ICs with LTM was recommended. The FS has been approved by the regulators. The PP was public noticed in October 2007. A ROD was signed by the USEPA in September 2009.

An RD plan for LTM and ICs was finalized in November 2009. The initial semiannual groundwater sampling event for the LTM was completed in February 2010. An IRA report was submitted in August 2010 based on the initial LTM groundwater sampling event. The IRA report was approved by the USEPA in September 2010 and the NJDEP in October 2010.

The initial statistical test required by the sampling plan was performed in 2012.

The results of the test that the NJDEP and USEPA have agreed to has reduced the frequency, parameters, and number of wells of the monitoring program.

The LTM (considered part of the ICs for this site under the AEDB-R) is being performed at the site. The LTM which started in 2009 will include semiannual monitoring for a minimum of two years and semiannual monitoring at 16 SB wells and 16 Area C wells, two Area C southwest, LUCs, well repair and abandonment, and five-year reviews.

The LTM costs are covered by the "PBA@MR-PICA PBA for MR Sites" until December 2014.

Site ID: PICA-206
Site Name: AREA C GROUNDWATER
Alias: PICA-206

CLEANUP/EXIT STRATEGY

Groundwater monitoring for these wells will continue in FY14 through 2037 in accordance with (IAW) the RD plan. A new contract is anticipated in FY14.

Site ID: PICA-209
Site Name: BUILDING 167, LOCOMOTIVE AREA, BLDG. 430
Alias: PICA-209

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals, Petroleum, Oil and Lubricants (POL), Polycyclic Aromatic Hydrocarbons (PAH), Volatiles (VOC)

Media of Concern: Groundwater, Sediment, Soil

Phases	Start	End
PA	199309	199604
SI	199608	199806
RI/FS	199809	201401
IRA	200308	200410

RIP Date: N/A

RC Date: 201406

SITE DESCRIPTION

PICA-209 consists of five separate buildings (Buildings 167, 303, 426, 426A, 430) in Area F, grouped together by USACHPPM for an RRSE.

Building 167 was constructed in 1930 as an explosives prep laboratory. The building was also used as a nuclear chemical research laboratory and is currently vacant. Drums containing radionuclides were stored on the eastern side of the building. The building contained hot laboratories where sink drains, equipment drains, and floor drains were routed to collection tanks in the basement. These tanks received low-level radioactive waste and solvents. The radiation protection office tested and cleared the piping before removal in 1973. All of the tanks but one was removed at this time. No closeout or closure survey was conducted. Piping leaks were reported in the building basement.

Former Building 303, the Locomotive Area, was used to maintain all locomotives prior to 1926. The building was demolished except for the foundation and service pits that show evidence of petroleum contamination and contain coal clinkers.

Building 430 is a former propellant systems facility used to produce and test small batches of NG. Liquid wastes generated in the building were retained in lead catch tanks installed in the 1950s. Overflow from the tanks was discharged onto the soil.

Building 462A, built in 1941, was used for storage as part of the neutralizing house for the GCL. It is currently used for storage of explosives. The building contains a concrete sump, formerly used to receive wastewater from Building 462. The water was then discharged into a ditch located southwest of the building. Former Building 426 was used as a mixing house prior to its destruction during an explosion in 1945. No other information is available concerning this building.

In 1998, the USACHPPM performed an RRSE for the five buildings and storage areas associated with this site. Samples were collected at each building except former Building 426. Metals, explosives, and PAHs above LOC were detected in the soil. VOCs, explosives, and metals above LOC were identified in the groundwater. In 2000 and 2001, surface and subsurface soil was sampled for arsenic, lead, and explosives.

The analytical results have successfully delineated the extent of contamination at each building, and no further sampling is proposed. Individual HHRAs were performed for the five buildings. Risks were above 1 by 10(-4) at Buildings 167 and 430. Hazards were above the target levels of one at Building 430 and former Building 303. Lead was also a health concern at these two buildings. A SLERA was conducted for the five PICA-209 buildings in spring 2005. A reconnaissance visit prior to the BERA field investigations determined that construction or remediation activities north of Area F as well as the cessation of discharges from Area F buildings to this ditch had altered the expected flow patterns and the ditch was completely dry. The ditch no longer represents a potential aquatic habitat. Previous sediment analytical data was regarded as surface soil data for evaluation in the Area F BERA through wildlife exposure modeling. Although the food web exposure models indicated that adverse effects on reproduction in small mammals or birds could occur given sufficient exposure to site COPECs in Area F, the field investigations and RSA results indicated that effects, if any, were not impacting the local populations of small mammals or birds.

The site is addressed by the ARCADIS PBC. An FS was submitted in October 2009.

Site ID: PICA-209
Site Name: BUILDING 167, LOCOMOTIVE AREA, BLDG. 430
Alias: PICA-209

A final release survey, including remediation and removal of contaminated radiological items in 2002, was performed at Building 167 by the US Army Joint Munitions Command (non-ER,A funds).

Approximately 13.5 cubic ft of soil were excavated and disposed of off-site. Based on the post-excavation results, no further remediation of the radiological contamination is required. One sump, two lead catch tanks, and about 145 cy of contaminated soil (PAHs from Building 167, lead/explosives from Building 430, and lead from Buildings 303 and 430) were removed from four of the five PICA-209 buildings between December 2003 and September 2004. Additionally, three sumps at Buildings 430 and 462A were further investigated.

Groundwater contamination will addressed as part of the Mid-Valley investigation.

The site is included in FS for PICA 11 LUC group of sites, the 45 site FS (PICA 11, 50, 75, 91, 97, 108, 122, 134, 135, 136, 162, 175, 200, 209).

A PP and a ROD will be completed. It is expected that the FS will be approved in FY13 or early-FY14, a PP will be publicly advertised and a ROD signed by January 2014.

The ROD is expected to be an NFA with monitoring of land use ROD as the site has acceptable risk and would, therefore, be consistent with the basis of the USEPA letter dated Nov. 27, 2012. In this letter USEPA agrees with the Army position that sites with acceptable risk should be considered as an NFA as existing LUCs prevent a different land use.

The Army has agreed to the notification and certification as required by USEPA; however, because it is an NFA, no action is required to perform an RD or the implementation of LUCs.

It is recognized that the NJDEP will not concur on the action since it does not recognize the NJDEP cleanup numbers as ARARs.

CLEANUP/EXIT STRATEGY

An NFA is expected in FY14.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
PICA-007	INACT.ROCKET FUEL TEST G-2 AREA (SITE 1)	200306	PICA-007 was listed as RC in AEDB-R and will be addressed as part of PICA-008.
PICA-010	BUILDING 95 FORMER WASTE IMPOUNDMENTS	200306	In 2003, PICA-010 was listed as RC in AEDB-R and will be addressed under PICA-077.
PICA-012	BLDG 3022 PHYS ANAL LAB/ENERG(SITE 83)	200306	In 2003, PICA-012 was listed as RC in AEDB-R and will be addressed under PICA-134.
PICA-018	FLUOROCHEMICAL STRG(3045)(SITE 30)	200306	In 2003, PICA-018 was listed as RC in AEDB-R and will be addressed under PICA-134.
PICA-021	FORMER NG PROC AREA (1361A-1364) ST 35	200306	In 2003, PICA-021 was listed as RC in AEDB-R and will be addressed under PICA-163.
PICA-029	BUILDINGS IN 300 AREA	200506	In 2005, PICA-029 was listed as RC in AEDB-R and will be addressed under PICA-096.
PICA-036	FORMER PROPELLANT PLANT(1010)(SITE 106)	199702	The costs for ICs for this site, although closed (RC) for years, has been integrated into the PICA- 020. It is part of the Institutional Control Record of Decision for 13 Sites.
PICA-037	FORMER HAZ WST TANK STOR(1380)(SITE 51)	200306	In 2003, PICA-037 was listed as RC in AEDB-R and will be addressed under PICA-195.
PICA-047	STEAM POWER PLANT BLDG 506(SITE 63/65)	200306	In 2003, PICA-047 was listed as RC in AEDB-R and will be addressed under PICA-022.
PICA-052	SHELL BURIAL AREA(NEAR B-3100)(SITE 6)	200306	In 2003, PICA-052 was listed as RC in AEDB-R and will be addressed under PICA-162.
PICA-053	MUNITS&PROPLTS TST AREA/CHEM BURIAL	200505	In 2005, PICA-053 was listed as RC in AEDB-R and will be addressed under PICA-096.
PICA-054	MUNITS&PROPLT TST AREA(B-1222)(SITE 8)	199702	Site is ER,A ineligible and will be covered under the CC program as CC-054.
PICA-055	MUNITS&PROPLT TEST AREA(B670,B673,B674)	200107	Active range - not eligible
PICA-056	FORMER CHEMICAL BURIAL AREA (SITE 10)	200306	In 2003, PICA-056 was listed as RC in AEDB-R and will be addressed under PICA-053.
PICA-059	MUNITS/PYROTEC TEST AREA(B-640)(SITE 13)	199702	Active range - not eligible
PICA-060	MUNITIONS TEST AREA (B-636) SITE 14	200106	Active Site - Not ER,A eligible
PICA-061	MUNITIONS TEST AREA(B616,B654)(SITE 15)	200106	Active range - not eligible
PICA-063	PYROTECHNIC TESTING RANGE (SITE 20)	200205	PICA-063 has been combined with PICA-066, Sanitary Landfill (Site 24), and both are being addressed concurrently under PICA-066.
PICA-064	POACH HOUSE (520) (SITE 147)	200306	In 2003, PICA-064 was listed as RC in AEDB-R and will be addressed under PICA-085.
PICA-068	DREDGE PILE (SITE 26)	199702	PICA-068 has been combined with PICA-067, Sanitary Landfill (Site 25), and both

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			are being addressed concurrently under PICA-067.
PICA-069	PROPELLANT/CHEM/MATERIAL STORAGE	200506	In 2005, PICA-069 was listed as RC in AEDB-R and will be addressed under PICA-096.
PICA-070	SEWAGE TRMT PLANT SLUDGE BEDS(B80)SITE28	199702	This cost for ICs for this site, although closed (RC) for years, has been integrated into the PICA- 020. It is part of the Institutional Control Record of Decision for 13 Sites.
PICA-073	BLDG 553 STORAGE TANKS(SITE 32)	200306	In 2003, PICA-073 was listed as RC in AEDB-R and will be addressed under PICA-085.
PICA-074	BLDG 527A STORAGE TANKS (SITE 33)	200306	In 2003, PICA-074 was listed as RC in AEDB-R and will be addressed under PICA-085.
PICA-078	VEHCL MAINT FORMER-WW PRETRTMT FAC(B-31)	200103	The site will be addressed under site PICA-084.
PICA-080	FORMER LAB PACK FAC (B-1094) SITE 41	200306	In 2003, PICA-080 was listed as RC in AEDB-R and will be addressed under PICA-195.
PICA-081	FORMER PCB STORAGE AREA (B-3114) SITE 42	200306	In 2003, PICA-081 was listed as RC in AEDB-R and will be addressed under PICA-195.
PICA-082	PESTICIDE STORAGE AREA (B-3157) SITE 43	200306	In 2003, PICA-082 was listed as RC in AEDB-R and will be addressed under PICA-195.
PICA-083	Golf Course Maintenance(BLDG 39)SITE 44	200008	The cost for ICs for this site, although closed (RC) for years, have been integrated into PICA- 020. It is part of the Institutional Control Record of Decision for 13 Sites.
PICA-084	VEHICLE MAINTENCE (BLDG 33)SITE 45	200407	In 2003, PICA-084 was listed as RC in AEDB-R and will be addressed under PICA-071.
PICA-086	HEAVY EQUIP. MAINTENANCE(BLDG 3005&3006)	200306	In 2003, PICA-086 was listed as RC in AEDB-R and will be addressed under PICA-075.
PICA-087	Auto Hobby Shop (BLDG 3315)- Site 48	200106	The site will be addressed under PICA-084.
PICA-088	Soldering Storage Area (BLDG 19&19A)	199706	The costs for ICs for this site, although closed (RC) for years, have been integrated into PICA- 020. It is part of the Institutional Control Record of Decision for 13 Sites.
PICA-089	PETROLEUM LEAK AREA(BLDG 305)SITE 52	200306	In 2003, PICA-089 was listed as RC in AEDB-R and will be addressed under PICA-029.
PICA-092	BASEBALL FIELDS (SITE 163)	199702	The costs for ICs for this site, although closed (RC) for years, have been integrated into PICA-020. It is part of the Institutional Control Record of Decision for 13 Sites.
PICA-094	SURVEILLANCE LABORATORY(BLDG 92)-SITE 69	200406	In 2005, PICA-094 was listed as RC in AEDB-R and will be addressed under

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			PICA-096.
PICA-095	BLDG 12, PHOTO PROCESSING FAC (SITE 86)	199702	The site will be addressed under PICA-020.
PICA-098	METAL PLATING SHOP, BLDG 64 (SITE 123)	200506	In 2005, PICA-098 was listed as RC in AEDB-R and will be addressed under PICA-096.
PICA-099	BLDG 5,ARSENAL REPRTION & TRNG OFF(182)	199702	The costs for ICs for this site, although closed (RC) for years, have been integrated into PICA- 020. It is part of the Institutional Control Record of Decision for 13 Sites.
PICA-100	GRAPHIC REPRODUCTION &TRNG BLDG 58 (183)	199702	Costs for ICs for this site, although closed (RC) for years, has been integrated into the PICA- 020. It is part of the Institutional Control Record of Decision for 13 Sites.
PICA-101	BLDG 163, PHOTOGRAPHY LAB (SITE 60)	200406	In 2005, PICA-101 was listed as RC in AEDB-R and will be addressed under PICA-096.
PICA-103	BLDGS 161&162,CHEMICAL LAB(SITE 104)	200306	In 2003, PICA-103 was listed as RC in AEDB-R and will be addressed under PICA-102.
PICA-104	BLDGS 454&455,PROPELLANT BAG FLG AREA	200306	In 2003, PICA-104 was listed as RC in AEDB-R and will be addressed under PICA-108.
PICA-105	BLDG 166,PROPELLANT TEST (SITE 124)	199702	This site will be addressed under PICA-020.
PICA-106	BLDGS 172&183 & BLDGS IN 400 AREA	200306	In 2003, PICA-106 was listed as RC in AEDB-R and will be addressed under PICA-111.
PICA-109	BLDGS 427&427B,PROPELLANT PRO(SITE 140)	200606	In 2006, PICA-109 was listed as RC in AEDB-R and will be addressed under PICA-108
PICA-110	BLDG 429,PROPELLANT CRUSHING(SITE 141)	200008	The costs for ICs for this site, although closed (RC) for years, have been integrated into PICA- 020. It is part of the Institutional Control Record of Decision for 13 Sites.
PICA-112	BLDG 436,PROPELLANT PROCESSING(SITE 143)	199702	The costs for ICs for this site, although closed (RC) for years, have been integrated into PICA- 020. It is part of the Institutional Control Record of Decision for 13 Sites.
PICA-113	BLDG 462,PROPELLANT FINISHING (SITE 144)	200306	In 2003, PICA-113 was listed as RC in AEDB-R and will be addressed under PICA-111.
PICA-114	BLDG 477,EXPLOSIVE&PROPELLANT MIX AREA	200506	In 2005, PICA-114 was listed as RC in AEDB-R and will be addressed under PICA-096.
PICA-115	BLDG 497,POWDER PRESSING (SITE 146)	200306	In 2003, PICA-115 was listed as RC in AEDB-R and will be addressed under PICA-111.
PICA-116	BLDGS 311&319, FORMER GAS STATION &	200306	In 2003, PICA-116 was listed as RC in AEDB-R and will be addressed under PICA-072.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
PICA-117	BLDG 302,SERVICE SHOPS (SITE 134)	200306	In 2003, PICA-117 was listed as RC in AEDB-R and will be addressed under PICA-029.
PICA-118	METALLURGY LAB, BLDG 315 (SITE 135)	200108	The costs for ICs for this site, although closed (RC) for years, have been integrated into PICA- 020. It is part of the Institutional Control Record of Decision for 13 Sites.
PICA-119	BLDG 355,METALLURGY LAB (SITE 136)	200306	In 2003, PICA-119 was listed as RC in AEDB-R and will be addressed under PICA-029.
PICA-120	FORMER BLDG 24 PLATING FACIL (SITE 21)	200008	The contaminated groundwater from the old Building 24 is currently being addressed as part of PICA-076; thus PICA-120 is considered RC.
PICA-121	BUILDING 336 - EXPLOSIVE LAUNDRY	200609	In 2006, PICA-121 was listed as RC in AEDB-R and will be addressed under PICA-29
PICA-123	FORMER HAZ WASTE STOR/FUSE ASS(BLDG 210)	200306	In 2003, PICA-123 was listed as RC in AEDB-R and will be addressed under PICA-091.
PICA-124	LOADING/DISASSEMBLY PLT (BLDG241)SITE 64	200306	In 2003, PICA-124 was listed as RC in AEDB-R and will be addressed under PICA-091.
PICA-125	MINE ASSEMBLY FACILITY(BLDG 268) SITE 98	200306	In 2003, PICA-125 was listed as RC in AEDB-R and will be addressed under PICA-091.
PICA-126	EXP LOADING FACILITY (BLDG 276) SITE 100	200306	In 2003, PICA-126 was listed as RC in AEDB-R and will be addressed under PICA-091.
PICA-127	MELT CASTING OPERATION (BLDG 230)SITE127	200306	In 2003, PICA-127 was listed as RC in AEDB-R and will be addressed under PICA-091.
PICA-128	EXP PRESSING PLT (BLDGS235/236) SITE 128	200306	In 2003, PICA-128 was listed as RC in AEDB-R and will be addressed under PICA-091.
PICA-129	CHANGE HOUSE (BLDG 240) SITE 129	200306	In 2003, PICA-129 was listed as RC in AEDB-R and will be addressed under PICA-091.
PICA-130	POWDER PRESS/PELLETING(BLDG 252)SITE 130	200306	In 2003, PICA-130 was listed as RC in AEDB-R and will be addressed under PICA-091.
PICA-132	FORMER LOAD FACILITY (BDLGS271/271I-N)	200306	In 2003, PICA-132 was listed as RC in AEDB-R and will be addressed under PICA-091.
PICA-133	CHANGE HOUSE (BUILDING 600) SITE 151	200306	In 2003, PICA-133 was listed as RC in AEDB-R and will be addressed under PICA-175.
PICA-137	XRAY PHOTOPROCESSING LAB(BLDG 908)SITE82	200306	In 2003, PICA-137 was listed as RC in AEDB-R and will be addressed under PICA-135.
PICA-138	ELECTROMAG. GUN TEST SHED(BLDG329)SITE90	200306	In 2003, PICA-138 was listed as RC in AEDB-R and will be addressed under PICA-108.
PICA-139	AMMUN DEMO 1 ORD FAC(BLDGS800/807)SITE93	200306	In 2003, PICA-139 was listed as RC in

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			AEDB-R and will be addressed under PICA-079.
PICA-140	POST ENG MAINT SHOP (BLDG 501) SITE 97	200306	In 2003, PICA-140 was listed as RC in AEDB-R and will be addressed under PICA-085.
PICA-141	FORMER ENLISTED MENS BARRACKS(BLDG 3050	200306	In 2003, PICA-141 was listed as RC in AEDB-R and will be addressed under PICA-075.
PICA-142	PROPELLANT PLANT (BLDG 511) SITE 105	200306	In 2003, PICA-142 was listed as RC in AEDB-R and will be addressed under PICA-085.
PICA-144	PYROTECHNIC PLANT (BLDG 445) SITE 109	200306	In 2003, PICA-144 was listed as RC in AEDB-R and will be addressed under PICA-111.
PICA-147	ADMINISTRATION BLDG (BLDG 382) SITE 137	200306	In 2003, PICA-147 was listed as RC in AEDB-R and will be addressed under PICA-108.
PICA-148	CHANGE HOUSE (BLDG 527) SITE 148	200306	In 2003, PICA-148 was listed as RC in AEDB-R and will be addressed under PICA-085.
PICA-150	PROPELLANT PLANT (BLDG 555) SITE 150	200306	In 2003, PICA-150 was listed as RC in AEDB-R and will be addressed under PICA-085.
PICA-151	Ordnance Bldgs 813, 816/816B	200306	In 2003, PICA-151 was listed as RC in AEDB-R and will be addressed under PICA-079.
PICA-152	ORDNANCE FAC (BLDGS 820,823) SITE 157	200306	In 2003, PICA-152 was listed as RC in AEDB-R and will be addressed under PICA-079.
PICA-153	HIGH-EXP MAGAZINE (BLDG 926) SITE 158	200306	In 2003, PICA-153 was listed as RC in AEDB-R and will be addressed under PICA-135.
PICA-154	SUPPLIES & SER. BLDG (BLDG 975) SITE 159	200306	In 2003, PICA-154 was listed as RC in AEDB-R and will be addressed under PICA-135.
PICA-156	REFRIG. & INERT GAS PLT(BLDG 523)SITE184	200306	In 2003, PICA-156 was listed as RC in AEDB-R and will be addressed under PICA-085.
PICA-157	FORMER MOTORS/ROC FUEL TST AREA(3600)	200306	In 2003, PICA-157 was listed as RC in AEDB-R and will be addressed as part of PICA-008.
PICA-158	HELICOPTER MAINTENANCE(BLDG 3801)SITE175	200506	In 2005, PICA-158 was listed as RC in AEDB-R and will be addressed under PICA-096.
PICA-159	PARKING AREA ACROSS FROM BLDG 3328	200306	In 2003, PICA-159 was listed as RC in AEDB-R and will be addressed under PICA-161.
PICA-160	CHEM LAB & ADMIN BLDG (BLDG 3404)SITE173	200306	In 2003, PICA-160 was listed as RC in AEDB-R and will be addressed under PICA-161.
PICA-161	SEWAGE TRMT/CHEM LAB/FIREHOUSE/PRKG	200506	In 2005, PICA-161 was listed as RC in AEDB-R and will be addressed under PICA-096.
PICA-165	FORMER EXPLOSIVES LOADING (BLDG 1033)	200306	In 2003, PICA-165 was listed as RC in AEDB-R and will be addressed under

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			PICA-195.
PICA-166	FORMER ORDNANCE FACILITY (BLDG 1029)	200306	In 2003, PICA-166 was listed as RC in AEDB-R and will be addressed under PICA-195.
PICA-167	FORMER PROP PLT/ORD FAC(BLDGS1373,1374)	200306	In 2003, PICA-167 was listed as RC in AEDB-R and will be addressed under PICA-195.
PICA-168	PROPEL PLTS/PRESS HOUSE 1400,1402-1403	200306	In 2003, PICA-168 was listed as RC in AEDB-R and will be addressed under PICA-163.
PICA-169	PROP PLTS (BLDGS1408,1408A-C,1409,1411)	200306	In 2003, PICA-169 was listed as RC in AEDB-R and will be addressed under PICA-163.
PICA-170	PROP MELT PLTS (BLDGS1462-1464) SITE 170	200306	In 2003, PICA-170 was listed as RC in AEDB-R and will be addressed under PICA-195.
PICA-172	FORMER NITRATION BLDG (BLDG 1031)	200306	In 2003, PICA-172 was listed as RC in AEDB-R and will be addressed under PICA-163.
PICA-173	FORMER EX MAN/STOR(BLDGS1070,1071,1071C)	200306	In 2003, PICA-173 was listed as RC in AEDB-R and will be addressed under PICA-171.
PICA-174	FORMER PROP PLTS(BLDGS1354,1357,1359)	200306	In 2003, PICA-174 was listed as RC in AEDB-R and will be addressed under PICA-163.
PICA-176	LITTLE LEAGUE BASEBALL FIELD SITE 176	200406	In 2005, PICA-176 was listed as RC in AEDB-R and will be addressed under PICA-096.
PICA-177	SAN SEWER SYSTEM BREAKS/LEAKS SITE 177	200406	In 2005, PICA-177 was listed as RC in AEDB-R and will be addressed under PICA-096.
PICA-178	ORDNANCE FAC (BLDGS 604,604C) SITE 152	200306	In 2003, PICA-178 was listed as RC in AEDB-R and will be addressed under PICA-175.
PICA-179	ORDINANCE FACILITY (BLDG 606) SITE 153	200306	In 2003, PICA-179 was listed as RC in AEDB-R and will be addressed under PICA-175.
PICA-180	FIELD OFF,DISASS(BLDGS 617,617G) SITE154	200306	In 2003, PICA-180 was listed as RC in AEDB-R and will be addressed under PICA-175.
PICA-181	ORDINANCE FAC (BLDGS 620,620B) SITE 155	199710	Site is an active operation and therefore, not ER,A eligible.
PICA-182	MUN TEST RANGES (BLDGS647,649,650)SITE11	199702	Site is not ER,A eligible
PICA-183	GEN PURPOSE MAGAZINE (BLDG1217) SITE 164	200406	In 2005, PICA-183 was listed as RC in AEDB-R and will be addressed under PICA-096.
PICA-185	PROP STORAGE (BLDGS46,47,48) SITE 119	200306	In 2003, PICA-185 was listed as RC in AEDB-R and will be addressed under PICA-069.
PICA-186	PROPELLANT STORAGE (BLDG 50) SITE 120	200306	In 2003, PICA-186 was listed as RC in AEDB-R and will be addressed under PICA-069.
PICA-187	CHEMICAL STORAGE (BLDG 57) SITE 121	200306	In 2003, PICA-187 was listed as RC in AEDB-R and will be addressed under

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			PICA-069.
PICA-188	FORMER LABORATORY IN BLDG 350 SITE 185	200306	In 2003, PICA-188 was listed as RC in AEDB-R and will be addressed under PICA-029.
PICA-189	FIREHOUSE (BUILDING 3316) SITE 186	200306	In 2003, PICA-189 was listed as RC in AEDB-R and will be addressed under PICA-161.
PICA-190	OIL & ACID STORAGE (BLDG 67) SITE 187	200506	In 2005, PICA-190 was listed as RC in AEDB-R and will be addressed under PICA-096.
PICA-191	FORMER COAL STORAGE AREA (BLDG 3173)	200306	In 2003, PICA-191 was listed as RC in AEDB-R and will be addressed under PICA-075.
PICA-194	GREEN POND BROOK	200008	This site is listed as RC in AEDB-R and will be addressed under PICA-193.
PICA-197	AREA "O" OTHER BUILDINGS	199710	Site was determined RC by USACHPPM in 1997 during their RRSE study.
PICA-198	AREA "N"OTHER BUILDINGS	199710	Site was determined RC by USACHPPM in 1997 during their RRSE study.
PICA-201	Other Bldgs in Area P	199710	Site was determined RC by USACHPPM in 1997 during their RRSE study.
PICA-202	Other Bldgs in Area J	199710	Site was determined RC by USACHPPM in 1997 during their RRSE study.
PICA-203	FORMER POISON GAS LAB	200306	In 2003, PICA-203 was listed as RC in AEDB-R and will be addressed under PICA-111.
PICA-207	STORAGE BUILDING 63	200506	In 2005, PICA-207 was listed as RC in AEDB-R and will be addressed under PICA-096.
PICA-208	D.U. SCRAP STORAGE AREA	200306	In 2003, PICA-208 was listed as RC in AEDB-R and will be addressed under PICA-069.
PICA-210	BUILDING 321	200306	In 2003, PICA-210 was listed as RC in AEDB-R and will be addressed under PICA-108.

IRP Schedule

Date of IRP Inception: 197607

Past Phase Completion Milestones

1981

PA (PICA-001 - INACTIVE TETRYL WASTE PITS (SITES 17/18), PICA-002 - LOWER BURNING GROUND (SITE 34), PICA-006 - GUNCOTTON LINE (SITE 16), PICA-007 - INACT.ROCKET FUEL TEST G-2 AREA (SITE 1), PICA-008 - INACT. ROCKET FUEL TEST Areas, PICA-010 - BUILDING 95 FORMER WASTE IMPOUNDMENTS, PICA-012 - BLDG 3022 PHYS ANAL LAB/ENERG(SITE 83), PICA-013 - OPTS PROTO PROC FAC SITE BLDG 91(SITE78), PICA-015 - LAKE DENMARK (SITE 54), PICA-018 - FLUOROCHEMICAL STRG(3045)(SITE 30), PICA-020 - PYROTECHNIC DEMO AREA (SITE 19), PICA-021 - FORMER NG PROC AREA (1361A-1364) ST 35, PICA-022 - POWER PLNT/HAZ WST TNKS/PROPELL PRD, PICA-029 - BUILDINGS IN 300 AREA, PICA-037 - FORMER HAZ WST TANK STOR(1380)(SITE 51), PICA-047 - STEAM POWER PLANT BLDG 506(SITE 63/65), PICA-050 - FORMER REACT MTRS/RCKT FUEL TST A 1500, PICA-052 - SHELL BURIAL AREA(NEAR B-3100)(SITE 6), PICA-053 - MUNITS&PROPLTS TST AREA/CHEM BURIAL, PICA-054 - MUNITS&PROPLT TST AREA(B-1222)(SITE 8), PICA-055 - MUNITS&PROPLT TEST AREA(B670,B673,B674), PICA-056 - FORMER CHEMICAL BURIAL AREA (SITE 10), PICA-057 - PICATINNY LAKE (SITE 53), PICA-058 - 600 HILL GROUNDWATER PLUME, PICA-059 - MUNITS/PYROTEC TEST AREA(B-640)(SITE 13), PICA-060 - MUNITIONS TEST AREA (B-636) SITE 14, PICA-061 - MUNITIONS TEST AREA(B616,B654)(SITE 15), PICA-063 - PYROTECHNIC TESTING RANGE (SITE 20), PICA-064 - POACH HOUSE (520) (SITE 147), PICA-065 - POST FARM LANDFILL (SITE 23), PICA-066 - SANITARY LANDFILL(NEAR SITE 20)SITE 24, PICA-067 - SANITIARY LANDFILL(NEAR SITE 26)SITE 25, PICA-068 - DREDGE PILE (SITE 26), PICA-069 - PROPELLANT/CHEM/MATERIAL STORAGE, PICA-070 - SEWAGE TRMT PLANT SLUDGE BEDS(B80)SITE28, PICA-071 - DRUM STRG AREA(B31 YARD) SITE 29, PICA-072 - FORMER GAS STATION/ DRMO(SITE 31), PICA-073 - BLDG 553 STORAGE TANKS(SITE 32), PICA-074 - BLDG 527A STORAGE TANKS (SITE 33), PICA-075 - EQPMT & WASTE STORAGE IN 3000-AREA, PICA-076 - FORM METL PLATG WSTWTR FAC/LAGOONS B-24 , PICA-077 - Area E Groundwater (Site 38), PICA-078 - VEHCL MAINT FORMER-WW PRETRTMT FAC(B-31), PICA-079 - ORDNANCE/EXPLOSIVE BLDGS 800 AREA, PICA-080 - FORMER LAB PACK FAC (B-1094) SITE 41, PICA-081 - FORMER PCB STORAGE AREA (B-3114) SITE 42, PICA-082 - PESTICIDE STORAGE AREA (B-3157) SITE 43, PICA-083 - Golf Course Maintenance(BLDG 39)SITE 44, PICA-085 - BLDS IN 500-AREA, PICA-086 - HEAVY EQUIP. MAINTENANCE(BLDG 3005&3006), PICA-087 - Auto Hobby Shop (BLDG 3315)- Site 48, PICA-091 - BLDGS IN 200-AREA, PICA-092 - BASEBALL FIELDS (SITE 163), PICA-093 - WASTE BURIAL AREA NEAR SITES 19&34(180), PICA-094 - SURVEILLANCE LABORATORY(BLDG 92)-SITE 69, PICA-095 - BLDG 12, PHOTO PROCESSING FAC (SITE 86), PICA-096 - BLDG 22,PRECISION MACHINE SHOP(SITE 117), PICA-097 - BLD 41,PESTICIDE STR & FORM OIL/W SEP, PICA-098 - METAL PLATING SHOP, BLDG 64 (SITE 123), PICA-099 - BLDG 5,ARSENAL REPRTION & TRNG OFF(182), PICA-100 - GRAPHIC REPRODUCTION &TRNG BLDG 58 (183), PICA-101 - BLDG 163, PHOTOGRAPHY LAB (SITE 60), PICA-102 - FORMER WASTE DUMP/CHEMICAL LAB, PICA-103 - BLDGS 161&162,CHEMICAL LAB(SITE 104), PICA-104 - BLDGS 454&455,PROPELLANT BAG FLG AREA, PICA-105 - BLDG 166,PROPELLANT TEST (SITE 124), PICA-106 - BLDGS 172&183 & BLDGS IN 400 AREA, PICA-107 - BLDGS 404,407,&408,CHMCL LAB&PROP PLANTS, PICA-108 - BLDGS in 400/300 AREA, PICA-109 - BLDGS 427&427B,PROPELLANT PRO(SITE 140), PICA-110 - BLDG 429,PROPELLANT CRUSHING(SITE 141), PICA-111 - FORMER BLDG 435,PROPELLANT SOLV MIXING , PICA-112 - BLDG 436,PROPELLANT PROCESSING(SITE 143), PICA-113 - BLDG 462,PROPELLANT FINISHING (SITE 144), PICA-114 - BLDG 477,EXPLOSIVE&PROPELLANT MIX AREA, PICA-115 - BLDG 497,POWDER PRESSING (SITE 146), PICA-116 - BLDGS 311&319, FORMER GAS STATION & , PICA-117 - BLDG 302,SERVICE SHOPS (SITE 134), PICA-118 - METALLURGY LAB, BLDG 315 (SITE 135), PICA-119 - BLDG 355,METALLURGY LAB (SITE 136), PICA-120 - FORMER BLDG 24 PLATING FACIL (SITE 21), PICA-121 - BUILDING 336 - EXPLOSIVE LAUNDRY, PICA-122 - PROPELLANT TESTING (BLDG 197) SITE 126, PICA-123 - FORMER HAZ WASTE STOR/FUSE ASS(BLDG 210), PICA-124 - LOADING/DISASSEMBLY PLT (BLDG241)SITE 64, PICA-125 - MINE ASSEMBLY FACILITY(BLDG 268) SITE 98, PICA-126 - EXP LOADING FACILITY (BLDG 276) SITE 100, PICA-127 - MELT CASTING OPERATION (BLDG 230)SITE127, PICA-128 - EXP PRESSING PLT (BLDGS235/236) SITE 128, PICA-129 - CHANGE HOUSE (BLDG 240) SITE 129, PICA-130 - POWDER PRESS/PELLETING(BLDG 252)SITE 130, PICA-131 - FORMER ORDNANACE MANUFAC. (BLDG 266) , PICA-132 - FORMER LOAD FACILITY (BDLGS271/271I-N) , PICA-133 - CHANGE HOUSE (BUILDING 600) SITE 151, PICA-134 - R&D LAB/Chem Storage 3000-Area, PICA-135 - BLDGS IN THE 900-AREA, PICA-136 - HIGH PRESSURE BOILER (BLDG 3013) SITE 79, PICA-137 - XRAY PHOTOPROCESSING LAB(BLDG 908)SITE82, PICA-138 - ELECTROMAG.

GUN TEST SHED(BLDG329)SITE90, PICA-139 - AMMUN DEMO 1 ORD FAC(BLDGS800/807)SITE93, PICA-140 - POST ENG MAINT SHOP (BLDG 501) SITE 97, PICA-141 - FORMER ENLISTED MENS BARRACKS(BLDG 3050, PICA-142 - PROPELLANT PLANT (BLDG 511) SITE 105, PICA-143 - ORDNANCE FAC (BLDGS 717,722,732)SITE 108, PICA-144 - PYROTECHNIC PLANT (BLDG 445) SITE 109, PICA-145 - 500 AREA BUILDINGS SITE 110, PICA-146 - PROPELLANT PLANT (BLDG 561) SITE 113, PICA-147 - ADMINISTRATION BLDG (BLDG 382) SITE 137, PICA-148 - CHANGE HOUSE (BLDG 527) SITE 148, PICA-149 - PROPELLANT PLANT (BLDG541) SITE 149, PICA-150 - PROPELLANT PLANT (BLDG 555) SITE 150, PICA-151 - Ordnance Bldgs 813, 816/816B, PICA-152 - ORDNANCE FAC (BLDGS 820,823) SITE 157, PICA-153 - HIGH-EXP MAGAZINE (BLDG 926) SITE 158, PICA-154 - SUPPLIES & SER. BLDG (BLDG 975) SITE 159, PICA-155 - TECUP BUILDINGS SITE 178, PICA-156 - REFRIG. & INERT GAS PLT(BLDG 523)SITE184, PICA-157 - FORMER MOTORS/ROC FUEL TST AREA(3600) , PICA-158 - HELICOPTER MAINTENANCE(BLDG 3801)SITE175, PICA-159 - PARKING AREA ACROSS FROM BLDG 3328, PICA-160 - CHEM LAB & ADMIN BLDG (BLDG 3404)SITE173, PICA-161 - SEWAGE TRMT/CHEM LAB/FIREHOUSE/PRKG, PICA-162 - SHELL BURIAL AREAS NEAR SITE 5, PICA-163 - Propellnt/Rcket Prod 1300/1400 Area, PICA-164 - RESERVOIR NEAR BLDG 3159 SITE 103, PICA-165 - FORMER EXPLOSIVES LOADING (BLDG 1033) , PICA-166 - FORMER ORDNANCE FACILITY (BLDG 1029) , PICA-167 - FORMER PROP PLT/ORD FAC(BLDGS1373,1374) , PICA-168 - PROPEL PLTS/PRESS HOUSE 1400,1402-1403, PICA-169 - PROP PLTS (BLDGS1408,1408A-C,1409,1411), PICA-170 - PROP MELT PLTS (BLDGS1462-1464) SITE 170, PICA-171 - ORDNANCE BLDG/EXPLOSIVES PROD., PICA-172 - FORMER NITRATION BLDG (BLDG 1031) , PICA-173 - FORMER EX MAN/STOR(BLDGS1070,1071,1071C), PICA-174 - FORMER PROP PLTS(BLDGS1354,1357,1359) , PICA-175 - ORDNANCE BLDGS in 600-AREA, PICA-176 - LITTLE LEAGUE BASEBALL FIELD SITE 176, PICA-177 - SAN SEWER SYSTEM BREAKS/LEAKS SITE 177, PICA-178 - ORDNANCE FAC (BLDGS 604,604C) SITE 152, PICA-179 - ORDINANCE FACILITY (BLDG 606) SITE 153, PICA-180 - FIELD OFF,DISASS(BLDGS 617,617G) SITE154, PICA-181 - ORDINANCE FAC (BLDGS 620,620B) SITE 155, PICA-182 - MUN TEST RANGES (BLDGS647,649,650)SITE11, PICA-183 - GEN PURPOSE MAGAZINE (BLDG1217) SITE 164, PICA-184 - BUILDINGS(1600,1601,1609,1610) SITE 94, PICA-185 - PROP STORAGE (BLDGS46,47,48) SITE 119, PICA-186 - PROPELLANT STORAGE (BLDG 50) SITE 120, PICA-187 - CHEMICAL STORAGE (BLDG 57) SITE 121, PICA-188 - FORMER LABORATORY IN BLDG 350 SITE 185, PICA-189 - FIREHOUSE (BUILDING 3316) SITE 186, PICA-190 - OIL & ACID STORAGE (BLDG 67) SITE 187, PICA-191 - FORMER COAL STORAGE AREA (BLDG 3173) , PICA-192 - APPLE TREES RECREATIONAL AREA , PICA-193 - GREEN POND AND BEAR SWAMP BROOK SITE 190, PICA-194 - GREEN POND BROOK, PICA-195 - BLDGS IN 1400/1300/3100/1000 AREAS)

1985

PA (PICA-089 - PETROLEUM LEAK AREA(BLDG 305)SITE 52)

1986

IRA (PICA-089 - PETROLEUM LEAK AREA(BLDG 305)SITE 52)

1989

PA (PICA-011 - BLDG 60 SATELITE WSTE ACCOM AREA(SITE122)

SI (PICA-001 - INACTIVE TETRYL WASTE PITS (SITES 17/18), PICA-002 - LOWER BURNING GROUND (SITE 34), PICA-006 - GUNCOTTON LINE (SITE 16), PICA-007 - INACT.ROCKET FUEL TEST G-2 AREA (SITE 1), PICA-008 - INACT. ROCKET FUEL TEST Areas, PICA-010 - BUILDING 95 FORMER WASTE IMPOUNDMENTS, PICA-012 - BLDG 3022 PHYS ANAL LAB/ENERG(SITE 83), PICA-013 - OPTS PROTO PROC FAC SITE BLDG 91(SITE78), PICA-015 - LAKE DENMARK (SITE 54), PICA-018 - FLUOROCHEMICAL STRG(3045)(SITE 30), PICA-020 - PYROTECHNIC DEMO AREA (SITE 19), PICA-021 - FORMER NG PROC AREA (1361A-1364) ST 35, PICA-022 - POWER PLNT/HAZ WST TNKS/PROPELL PRD, PICA-029 - BUILDINGS IN 300 AREA, PICA-037 - FORMER HAZ WST TANK STOR(1380)(SITE 51), PICA-047 - STEAM POWER PLANT BLDG 506(SITE 63/65), PICA-050 - FORMER REACT MTRS/RCKT FUEL TST A 1500, PICA-052 - SHELL BURIAL AREA(NEAR B-3100)(SITE 6), PICA-053 - MUNITS&PROPLTS TST AREA/CHEM BURIAL, PICA-054 - MUNITS&PROPLT TST AREA(B-1222)(SITE 8), PICA-055 - MUNITS&PROPLT TEST AREA(B670,B673,B674), PICA-056 - FORMER CHEMICAL BURIAL AREA (SITE 10), PICA-057 - PICATINNY LAKE (SITE 53), PICA-058 - 600 HILL GROUNDWATER PLUME, PICA-059 - MUNITS/PYROTEC TEST AREA(B-640)(SITE 13), PICA-060 - MUNITIONS TEST AREA (B-636) SITE 14, PICA-061 - MUNITIONS

	TEST AREA(B616,B654)(SITE 15), PICA-063 - PYROTECHNIC TESTING RANGE (SITE 20), PICA-064 - POACH HOUSE (520) (SITE 147), PICA-065 - POST FARM LANDFILL (SITE 23), PICA-066 - SANITARY LANDFILL(NEAR SITE 20)SITE 24, PICA-067 - SANITIARY LANDFILL(NEAR SITE 26)SITE 25, PICA-068 - DREDGE PILE (SITE 26), PICA-069 - PROPELLANT/CHEM/MATERIAL STORAGE, PICA-070 - SEWAGE TRMT PLANT SLUDGE BEDS(B80)SITE28, PICA-071 - DRUM STRG AREA(B31 YARD) SITE 29, PICA-072 - FORMER GAS STATION/ DRMO(SITE 31), PICA-073 - BLDG 553 STORAGE TANKS(SITE 32), PICA-074 - BLDG 527A STORAGE TANKS (SITE 33), PICA-075 - EQPMT & WASTE STORAGE IN 3000-AREA, PICA-078 - VEHCL MAINT FORMER-WW PRETRTMT FAC(B-31), PICA-079 - ORDNANCE/EXPLOSIVE BLDGS 800 AREA, PICA-080 - FORMER LAB PACK FAC (B-1094) SITE 41, PICA-081 - FORMER PCB STORAGE AREA (B-3114) SITE 42, PICA-082 - PESTICIDE STORAGE AREA (B-3157) SITE 43, PICA-083 - Golf Course Maintenance(BLDG 39)SITE 44, PICA-085 - BLDS IN 500-AREA, PICA-086 - HEAVY EQUIP. MAINTENANCE(BLDG 3005&3006), PICA-091 - BLDGS IN 200-AREA, PICA-092 - BASEBALL FIELDS (SITE 163), PICA-093 - WASTE BURIAL AREA NEAR SITES 19&34(180), PICA-095 - BLDG 12, PHOTO PROCESSING FAC (SITE 86), PICA-096 - BLDG 22,PRECISION MACHINE SHOP(SITE 117), PICA-097 - BLD 41,PESTICIDE STR & FORM OIL/W SEP, PICA-098 - METAL PLATING SHOP, BLDG 64 (SITE 123), PICA-099 - BLDG 5,ARSENAL REPRTION & TRNG OFF(182), PICA-100 - GRAPHIC REPRODUCTION &TRNG BLDG 58 (183), PICA-101 - BLDG 163, PHOTOGRAPHY LAB (SITE 60), PICA-102 - FORMER WASTE DUMP/CHEMICAL LAB, PICA-103 - BLDGS 161&162,CHEMICAL LAB(SITE 104), PICA-104 - BLDGS 454&455,PROPELLANT BAG FLG AREA, PICA-105 - BLDG 166,PROPELLANT TEST (SITE 124), PICA-106 - BLDGS 172&183 & BLDGS IN 400 AREA, PICA-107 - BLDGS 404,407,&408,CHMCL LAB&PROP PLANTS, PICA-108 - BLDGS in 400/300 AREA, PICA-109 - BLDGS 427&427B,PROPELLANT PRO(SITE 140), PICA-110 - BLDG 429,PROPELLANT CRUSHING(SITE 141), PICA-111 - FORMER BLDG 435,PROPELLANT SOLV MIXING , PICA-112 - BLDG 436,PROPELLANT PROCESSING(SITE 143), PICA-113 - BLDG 462,PROPELLANT FINISHING (SITE 144), PICA-114 - BLDG 477,EXPLOSIVE&PROPELLANT MIX AREA, PICA-115 - BLDG 497,POWDER PRESSING (SITE 146), PICA-116 - BLDGS 311&319, FORMER GAS STATION & , PICA-117 - BLDG 302,SERVICE SHOPS (SITE 134), PICA-118 - METALLURGY LAB, BLDG 315 (SITE 135), PICA-119 - BLDG 355,METALLURGY LAB (SITE 136), PICA-120 - FORMER BLDG 24 PLATING FACIL (SITE 21), PICA-121 - BUILDING 336 - EXPLOSIVE LAUNDRY)
1990	
SI	(PICA-076 - FORM METL PLATG WSTWTR FAC/LAGOONS B-24 , PICA-077 - Area E Groundwater (Site 38))
1991	
IRA	(PICA-073 - BLDG 553 STORAGE TANKS(SITE 32), PICA-074 - BLDG 527A STORAGE TANKS (SITE 33), PICA-083 - Golf Course Maintenance(BLDG 39)SITE 44, PICA-123 - FORMER HAZ WASTE STOR/FUSE ASS(BLDG 210))
PA	(PICA-036 - FORMER PROPELLANT PLANT(1010)(SITE 106), PICA-084 - VEHICLE MAINTENCE (BLDG 33)SITE 45, PICA-088 - Soldering Storage Area (BLDG 19&19A))
SI	(PICA-011 - BLDG 60 SATELITE WSTE ACCOM AREA(SITE122, PICA-036 - FORMER PROPELLANT PLANT(1010)(SITE 106), PICA-084 - VEHICLE MAINTENCE (BLDG 33)SITE 45, PICA-088 - Soldering Storage Area (BLDG 19&19A), PICA-089 - PETROLEUM LEAK AREA(BLDG 305)SITE 52, PICA-122 - PROPELLANT TESTING (BLDG 197) SITE 126, PICA-123 - FORMER HAZ WASTE STOR/FUSE ASS(BLDG 210), PICA-124 - LOADING/DISASSEMBLY PLT (BLDG241)SITE 64, PICA-125 - MINE ASSEMBLY FACILITY(BLDG 268) SITE 98, PICA-126 - EXP LOADING FACILITY (BLDG 276) SITE 100, PICA-127 - MELT CASTING OPERATION (BLDG 230)SITE127, PICA-128 - EXP PRESSING PLT (BLDGS235/236) SITE 128, PICA-129 - CHANGE HOUSE (BLDG 240) SITE 129, PICA-130 - POWDER PRESS/PELLETING(BLDG 252)SITE 130, PICA-131 - FORMER ORDNANACE MANUFAC. (BLDG 266) , PICA-132 - FORMER LOAD FACILITY (BDLGS271/271I-N) , PICA-133 - CHANGE HOUSE (BUILDING 600) SITE 151, PICA-134 - R&D LAB/Chem Storage 3000-Area, PICA-135 - BLDGS IN THE 900-AREA, PICA-136 - HIGH PRESSURE BOILER (BLDG 3013) SITE 79, PICA-137 - XRAY PHOTOPROCESSING LAB(BLDG 908)SITE82, PICA-138 - ELECTROMAG. GUN TEST SHED(BLDG329)SITE90, PICA-139 - AMMUN DEMO 1 ORD FAC(BLDGS800/807)SITE93, PICA-140 - POST ENG MAINT SHOP (BLDG 501) SITE 97, PICA-141 - FORMER ENLISTED MENS BARRACKS(BLDG 3050, PICA-142 - PROPELLANT PLANT (BLDG 511) SITE

	105, PICA-143 - ORDNANCE FAC (BLDGS 717,722,732)SITE 108, PICA-144 - PYROTECHNIC PLANT (BLDG 445) SITE 109, PICA-145 - 500 AREA BUILDINGS SITE 110, PICA-146 - PROPELLANT PLANT (BLDG 561) SITE 113, PICA-147 - ADMINISTRATION BLDG (BLDG 382) SITE 137, PICA-148 - CHANGE HOUSE (BLDG 527) SITE 148, PICA-149 - PROPELLANT PLANT (BLDG541) SITE 149, PICA-150 - PROPELLANT PLANT (BLDG 555) SITE 150, PICA-151 - Ordnance Bldgs 813, 816/816B, PICA-152 - ORDNANCE FAC (BLDGS 820,823) SITE 157, PICA-153 - HIGH-EXP MAGAZINE (BLDG 926) SITE 158, PICA-154 - SUPPLIES & SER. BLDG (BLDG 975) SITE 159, PICA-155 - TECUP BUILDINGS SITE 178, PICA-156 - REFRIG. & INERT GAS PLT(BLDG 523)SITE184, PICA-157 - FORMER MOTORS/ROC FUEL TST AREA(3600) , PICA-158 - HELICOPTER MAINTENANCE(BLDG 3801)SITE175, PICA-159 - PARKING AREA ACROSS FROM BLDG 3328, PICA-160 - CHEM LAB & ADMIN BLDG (BLDG 3404)SITE173, PICA-161 - SEWAGE TRMT/CHEM LAB/FIREHOUSE/PRKG, PICA-162 - SHELL BURIAL AREAS NEAR SITE 5, PICA-163 - Propellnt/Rcket Prod 1300/1400 Area, PICA-164 - RESERVOIR NEAR BLDG 3159 SITE 103, PICA-165 - FORMER EXPLOSIVES LOADING (BLDG 1033) , PICA-166 - FORMER ORDNANCE FACILITY (BLDG 1029) , PICA-167 - FORMER PROP PLT/ORD FAC(BLDGS1373,1374) , PICA-168 - PROPEL PLTS/PRESS HOUSE 1400,1402-1403, PICA-169 - PROP PLTS (BLDGS1408,1408A-C,1409,1411), PICA-170 - PROP MELT PLTS (BLDGS1462-1464) SITE 170, PICA-171 - ORDNANCE BLDG/EXPLOSIVES PROD., PICA-172 - FORMER NITRATION BLDG (BLDG 1031) , PICA-173 - FORMER EX MAN/STOR(BLDGS1070,1071,1071C), PICA-174 - FORMER PROP PLTS(BLDGS1354,1357,1359) , PICA-175 - ORDNANCE BLDGS in 600-AREA, PICA-176 - LITTLE LEAGUE BASEBALL FIELD SITE 176, PICA-178 - ORDNANCE FAC (BLDGS 604,604C) SITE 152, PICA-179 - ORDINANCE FACILITY (BLDG 606) SITE 153, PICA-180 - FIELD OFF,DISASS(BLDGS 617,617G) SITE154, PICA-182 - MUN TEST RANGES (BLDGS647,649,650)SITE11, PICA-183 - GEN PURPOSE MAGAZINE (BLDG1217) SITE 164, PICA-184 - BUILDINGS(1600,1601,1609,1610) SITE 94, PICA-185 - PROP STORAGE (BLDGS46,47,48) SITE 119, PICA-186 - PROPELLANT STORAGE (BLDG 50) SITE 120, PICA-187 - CHEMICAL STORAGE (BLDG 57) SITE 121, PICA-191 - FORMER COAL STORAGE AREA (BLDG 3173) , PICA-193 - GREEN POND AND BEAR SWAMP BROOK SITE 190, PICA-194 - GREEN POND BROOK, PICA-195 - BLDGS IN 1400/1300/3100/1000 AREAS)
1992	
IRA	(PICA-136 - HIGH PRESSURE BOILER (BLDG 3013) SITE 79)
SI	(PICA-177 - SAN SEWER SYSTEM BREAKS/LEAKS SITE 177, PICA-192 - APPLE TREES RECREATIONAL AREA)
1993	
IRA	(PICA-065 - POST FARM LANDFILL (SITE 23), PICA-072 - FORMER GAS STATION/ DRMO(SITE 31))
1994	
PA	(PICA-199 - FORMER PISTOL RANGE DUMP&NAVY MANURE PIT, PICA-200 - AREA (L) OTHER BUILDINGS)
1995	
SI	(PICA-199 - FORMER PISTOL RANGE DUMP&NAVY MANURE PIT, PICA-200 - AREA (L) OTHER BUILDINGS)
1996	
PA	(PICA-197 - AREA "O" OTHER BUILDINGS, PICA-198 - AREA "N"OTHER BUILDINGS, PICA-201 - Other Bldgs in Area P, PICA-202 - Other Bldgs in Area J, PICA-203 - FORMER POISON GAS LAB, PICA-204 - MID-VALLEY GROUNDWATER, PICA-205 - AREA B GROUNDWATER , PICA-206 - AREA C GROUNDWATER, PICA-207 - STORAGE BUILDING 63, PICA-208 - D.U. SCRAP STORAGE AREA, PICA-209 - BUILDING 167, LOCOMOTIVE AREA, BLDG. 430, PICA-210 - BUILDING 321)
1997	
RI/FS	(PICA-036 - FORMER PROPELLANT PLANT(1010)(SITE 106), PICA-054 - MUNITS&PROPLT TST AREA(B-1222)(SITE 8), PICA-059 - MUNITS/PYROTEC TEST AREA(B-640)(SITE 13), PICA-068 - DREDGE PILE (SITE 26), PICA-070 - SEWAGE TRMT PLANT SLUDGE BEDS(B80)SITE28, PICA-088 - Soldering Storage Area (BLDG 19&19A), PICA-092 - BASEBALL FIELDS (SITE 163), PICA-095 - BLDG 12, PHOTO PROCESSING FAC (SITE 86), PICA-099 - BLDG 5,ARSENAL REPRTION & TRNG OFF(182), PICA-100 - GRAPHIC REPRODUCTION &TRNG BLDG 58 (183), PICA-105 - BLDG 166,PROPELLANT TEST (SITE 124),

	PICA-112 - BLDG 436,PROPELLANT PROCESSING(SITE 143), PICA-182 - MUN TEST RANGES (BLDGS647,649,650)SITE11)
SI	(PICA-181 - ORDINANCE FAC (BLDGS 620,620B) SITE 155, PICA-197 - AREA "O" OTHER BUILDINGS, PICA-198 - AREA "N"OTHER BUILDINGS, PICA-201 - Other Bldgs in Area P, PICA-202 - Other Bldgs in Area J)
1998	
SI	(PICA-087 - Auto Hobby Shop (BLDG 3315)- Site 48, PICA-094 - SURVEILLANCE LABORATORY(BLDG 92)-SITE 69, PICA-188 - FORMER LABORATORY IN BLDG 350 SITE 185, PICA-189 - FIREHOUSE (BUILDING 3316) SITE 186, PICA-190 - OIL & ACID STORAGE (BLDG 67) SITE 187, PICA-203 - FORMER POISON GAS LAB, PICA-204 - MID-VALLEY GROUNDWATER, PICA-209 - BUILDING 167, LOCOMOTIVE AREA, BLDG. 430, PICA-210 - BUILDING 321)
2000	
RI/FS	(PICA-055 - MUNITS&PROPLT TEST AREA(B670,B673,B674), PICA-060 - MUNITIONS TEST AREA (B-636) SITE 14, PICA-061 - MUNITIONS TEST AREA(B616,B654)(SITE 15), PICA-083 - Golf Course Maintenance(BLDG 39)SITE 44, PICA-110 - BLDG 429,PROPELLANT CRUSHING(SITE 141), PICA-120 - FORMER BLDG 24 PLATING FACIL (SITE 21), PICA-194 - GREEN POND BROOK)
IRA	(PICA-011 - BLDG 60 SATELITE WSTE ACCOM AREA(SITE122)
2001	
PA	(PBC Picatinny - PBC)
RI/FS	(PICA-078 - VEHCL MAINT FORMER-WW PRETRTMT FAC(B-31), PICA-087 - Auto Hobby Shop (BLDG 3315)- Site 48, PICA-118 - METALLURGY LAB, BLDG 315 (SITE 135))
2002	
RI/FS	(PICA-063 - PYROTECHNIC TESTING RANGE (SITE 20), PICA-066 - SANITARY LANDFILL(NEAR SITE 20)SITE 24)
IRA	(PICA-050 - FORMER REACT MTRS/RCKT FUEL TST A 1500)
2003	
RA(C)	(PICA-066 - SANITARY LANDFILL(NEAR SITE 20)SITE 24)
RD	(PICA-066 - SANITARY LANDFILL(NEAR SITE 20)SITE 24)
RI/FS	(PICA-007 - INACT.ROCKET FUEL TEST G-2 AREA (SITE 1), PICA-010 - BUILDING 95 FORMER WASTE IMPOUNDMENTS, PICA-012 - BLDG 3022 PHYS ANAL LAB/ENERG(SITE 83), PICA-018 - FLUOROCHEMICAL STRG(3045)(SITE 30), PICA-021 - FORMER NG PROC AREA (1361A-1364) ST 35, PICA-037 - FORMER HAZ WST TANK STOR(1380)(SITE 51), PICA-047 - STEAM POWER PLANT BLDG 506(SITE 63/65), PICA-052 - SHELL BURIAL AREA(NEAR B-3100)(SITE 6), PICA-056 - FORMER CHEMICAL BURIAL AREA (SITE 10), PICA-064 - POACH HOUSE (520) (SITE 147), PICA-073 - BLDG 553 STORAGE TANKS(SITE 32), PICA-074 - BLDG 527A STORAGE TANKS (SITE 33), PICA-080 - FORMER LAB PACK FAC (B-1094) SITE 41, PICA-081 - FORMER PCB STORAGE AREA (B-3114) SITE 42, PICA-082 - PESTICIDE STORAGE AREA (B-3157) SITE 43, PICA-086 - HEAVY EQUIP. MAINTENANCE(BLDG 3005&3006), PICA-089 - PETROLEUM LEAK AREA(BLDG 305)SITE 52, PICA-103 - BLDGS 161&162,CHEMICAL LAB(SITE 104), PICA-104 - BLDGS 454&455,PROPELLANT BAG FLG AREA, PICA-106 - BLDGS 172&183 & BLDGS IN 400 AREA, PICA-113 - BLDG 462,PROPELLANT FINISHING (SITE 144), PICA-115 - BLDG 497,POWDER PRESSING (SITE 146), PICA-116 - BLDGS 311&319, FORMER GAS STATION & , PICA-117 - BLDG 302,SERVICE SHOPS (SITE 134), PICA-119 - BLDG 355,METALLURGY LAB (SITE 136), PICA-123 - FORMER HAZ WASTE STOR/FUSE ASS(BLDG 210), PICA-124 - LOADING/DISASSEMBLY PLT (BLDG241)SITE 64, PICA-125 - MINE ASSEMBLY FACILITY(BLDG 268) SITE 98, PICA-126 - EXP LOADING FACILITY (BLDG 276) SITE 100, PICA-127 - MELT CASTING OPERATION (BLDG 230)SITE127, PICA-128 - EXP PRESSING PLT (BLDGS235/236) SITE 128, PICA-129 - CHANGE HOUSE (BLDG 240) SITE 129, PICA-130 - POWDER PRESS/PELLETING(BLDG 252)SITE 130, PICA-132 - FORMER LOAD FACILITY (BDLGS271/271I-N) , PICA-133 - CHANGE HOUSE (BUILDING 600) SITE 151, PICA-137 - XRAY PHOTOPROCESSING LAB(BLDG 908)SITE82, PICA-138 - ELECTROMAG. GUN TEST SHED(BLDG329)SITE90, PICA-139 - AMMUN DEMO 1 ORD FAC(BLDGS800/807)SITE93, PICA-140 - POST ENG MAINT SHOP (BLDG 501) SITE 97, PICA-141 - FORMER ENLISTED MENS BARRACKS(BLDG 3050,

	PICA-142 - PROPELLANT PLANT (BLDG 511) SITE 105, PICA-144 - PYROTECHNIC PLANT (BLDG 445) SITE 109, PICA-147 - ADMINISTRATION BLDG (BLDG 382) SITE 137, PICA-148 - CHANGE HOUSE (BLDG 527) SITE 148, PICA-150 - PROPELLANT PLANT (BLDG 555) SITE 150, PICA-151 - Ordnance Bldgs 813, 816/816B, PICA-152 - ORDNANCE FAC (BLDGS 820,823) SITE 157, PICA-153 - HIGH-EXP MAGAZINE (BLDG 926) SITE 158, PICA-154 - SUPPLIES & SER. BLDG (BLDG 975) SITE 159, PICA-156 - REFRIG. & INERT GAS PLT(BLDG 523)SITE184, PICA-157 - FORMER MOTORS/ROC FUEL TST AREA(3600) , PICA-159 - PARKING AREA ACROSS FROM BLDG 3328, PICA-160 - CHEM LAB & ADMIN BLDG (BLDG 3404)SITE173, PICA-165 - FORMER EXPLOSIVES LOADING (BLDG 1033) , PICA-166 - FORMER ORDNANCE FACILITY (BLDG 1029) , PICA-167 - FORMER PROP PLT/ORD FAC(BLDGS1373,1374) , PICA-168 - PROPEL PLTS/PRESS HOUSE 1400,1402-1403, PICA-169 - PROP PLTS (BLDGS1408,1408A-C,1409,1411), PICA-170 - PROP MELT PLTS (BLDGS1462-1464) SITE 170, PICA-172 - FORMER NITRATION BLDG (BLDG 1031) , PICA-173 - FORMER EX MAN/STOR(BLDGS1070,1071,1071C), PICA-174 - FORMER PROP PLTS(BLDGS1354,1357,1359) , PICA-178 - ORDNANCE FAC (BLDGS 604,604C) SITE 152, PICA-179 - ORDINANCE FACILITY (BLDG 606) SITE 153, PICA-180 - FIELD OFF,DISASS(BLDGS 617,617G) SITE154, PICA-185 - PROP STORAGE (BLDGS46,47,48) SITE 119, PICA-186 - PROPELLANT STORAGE (BLDG 50) SITE 120, PICA-187 - CHEMICAL STORAGE (BLDG 57) SITE 121, PICA-188 - FORMER LABORATORY IN BLDG 350 SITE 185, PICA-189 - FIREHOUSE (BUILDING 3316) SITE 186, PICA-191 - FORMER COAL STORAGE AREA (BLDG 3173) , PICA-203 - FORMER POISON GAS LAB, PICA-208 - D.U. SCRAP STORAGE AREA, PICA-210 - BUILDING 321)
2004	
RI/FS	(PICA-076 - FORM METL PLATG WSTWTR FAC/LAGOONS B-24 , PICA-084 - VEHICLE MAINTENCE (BLDG 33)SITE 45, PICA-094 - SURVEILLANCE LABORATORY(BLDG 92)-SITE 69, PICA-101 - BLDG 163, PHOTOGRAPHY LAB (SITE 60), PICA-176 - LITTLE LEAGUE BASEBALL FIELD SITE 176, PICA-177 - SAN SEWER SYSTEM BREAKS/LEAKS SITE 177, PICA-183 - GEN PURPOSE MAGAZINE (BLDG1217) SITE 164)
2005	
RI/FS	(PICA-002 - LOWER BURNING GROUND (SITE 34), PICA-029 - BUILDINGS IN 300 AREA, PICA-053 - MUNITS&PROPLTS TST AREA/CHEM BURIAL, PICA-065 - POST FARM LANDFILL (SITE 23), PICA-069 - PROPELLANT/CHEM/MATERIAL STORAGE, PICA-098 - METAL PLATING SHOP, BLDG 64 (SITE 123), PICA-114 - BLDG 477,EXPLOSIVE&PROPELLANT MIX AREA, PICA-158 - HELICOPTER MAINTENANCE(BLDG 3801)SITE175, PICA-161 - SEWAGE TRMT/CHEM LAB/FIREHOUSE/PRKG, PICA-190 - OIL & ACID STORAGE (BLDG 67) SITE 187, PICA-193 - GREEN POND AND BEAR SWAMP BROOK SITE 190, PICA-207 - STORAGE BUILDING 63)
IRA	(PICA-001 - INACTIVE TETRYL WASTE PITS (SITES 17/18), PICA-111 - FORMER BLDG 435,PROPELLANT SOLV MIXING , PICA-193 - GREEN POND AND BEAR SWAMP BROOK SITE 190, PICA-209 - BUILDING 167, LOCOMOTIVE AREA, BLDG. 430)
2006	
RI/FS	(PICA-109 - BLDGS 427&427B,PROPELLANT PRO(SITE 140), PICA-121 - BUILDING 336 - EXPLOSIVE LAUNDRY)
IRA	(PICA-076 - FORM METL PLATG WSTWTR FAC/LAGOONS B-24)
2007	
RA(C)	(PICA-065 - POST FARM LANDFILL (SITE 23), PICA-067 - SANITIARY LANDFILL(NEAR SITE 26)SITE 25, PICA-076 - FORM METL PLATG WSTWTR FAC/LAGOONS B-24 , PICA-093 - WASTE BURIAL AREA NEAR SITES 19&34(180), PICA-193 - GREEN POND AND BEAR SWAMP BROOK SITE 190)
RI/FS	(PICA-067 - SANITIARY LANDFILL(NEAR SITE 26)SITE 25, PICA-077 - Area E Groundwater (Site 38), PICA-093 - WASTE BURIAL AREA NEAR SITES 19&34(180))
RD	(PICA-065 - POST FARM LANDFILL (SITE 23), PICA-067 - SANITIARY LANDFILL(NEAR SITE 26)SITE 25, PICA-076 - FORM METL PLATG WSTWTR FAC/LAGOONS B-24 , PICA-077 - Area E Groundwater (Site 38), PICA-093 - WASTE BURIAL AREA NEAR SITES 19&34(180), PICA-193 - GREEN POND AND BEAR SWAMP BROOK SITE 190)
2008	
RA(C)	(PICA-077 - Area E Groundwater (Site 38), PICA-102 - FORMER WASTE DUMP/CHEMICAL LAB, PICA-205 - AREA B GROUNDWATER)

RD	(PICA-102 - FORMER WASTE DUMP/CHEMICAL LAB, PICA-205 - AREA B GROUNDWATER)
RI/FS	(PICA-102 - FORMER WASTE DUMP/CHEMICAL LAB, PICA-205 - AREA B GROUNDWATER)
2009	
RA(C)	(PBC Picatinny - PBC, PICA-020 - PYROTECHNIC DEMO AREA (SITE 19), PICA-206 - AREA C GROUNDWATER)
RI/FS	(PICA-020 - PYROTECHNIC DEMO AREA (SITE 19), PICA-072 - FORMER GAS STATION/ DRMO(SITE 31), PICA-206 - AREA C GROUNDWATER)
RD	(PICA-020 - PYROTECHNIC DEMO AREA (SITE 19), PICA-072 - FORMER GAS STATION/ DRMO(SITE 31), PICA-206 - AREA C GROUNDWATER)
2010	
RI/FS	(PICA-008 - INACT. ROCKET FUEL TEST Areas, PICA-079 - ORDNANCE/EXPLOSIVE BLDGS 800 AREA)
RA(C)	(PICA-072 - FORMER GAS STATION/ DRMO(SITE 31), PICA-079 - ORDNANCE/EXPLOSIVE BLDGS 800 AREA)
RD	(PICA-079 - ORDNANCE/EXPLOSIVE BLDGS 800 AREA)
2011	
IRA	(PICA-013 - OPTS PROTO PROC FAC SITE BLDG 91(SITE78))
RD	(PICA-008 - INACT. ROCKET FUEL TEST Areas)
2012	
RI/FS	(PICA-204 - MID-VALLEY GROUNDWATER)

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: 201510

Schedule for Next Five-Year Review: 2016

Estimated Completion Date of IRP at Installation (including LTM phase): 204510

PICATINNY ARSENAL IRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
PBC Picatinny	PBC	RA(O)						
PICA-001	INACTIVE TETRYL WASTE PITS (SITES 17/18)	RI/FS						
PICA-002	LOWER BURNING GROUND (SITE 34)	RA(C)						
		LTM						
PICA-006	GUNCOTTON LINE (SITE 16)	RI/FS						
PICA-008	INACT. ROCKET FUEL TEST Areas	RA(C)						
		RA(O)						
PICA-011	BLDG 60 SATELITE WSTE ACCOM AREA(SITE122	RI/FS						
		RD						
		RA(C)						
PICA-013	OPTS PROTO PROC FAC SITE BLDG 91(SITE78)	RI/FS						
		RA(C)						
		RA(O)						
PICA-015	LAKE DENMARK (SITE 54)	RI/FS						
		RD						
		RA(C)						
		LTM						
PICA-020	PYROTECHNIC DEMO AREA (SITE 19)	LTM						
PICA-022	POWER PLNT/HAZ WST TNKS/PROPELL PRD	RI/FS						
PICA-050	FORMER REACT MTRS/RCKT FUEL TST A 1500	RI/FS						
PICA-057	PICATINNY LAKE (SITE 53)	RI/FS						
		RD						
		RA(C)						
		LTM						
PICA-058	600 HILL GROUNDWATER PLUME	RI/FS						
		RD						
		RA(C)						
		LTM						

PICATINNY ARSENAL IRP Schedule

SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
PICA-065	POST FARM LANDFILL (SITE 23)	LTM						
PICA-066	SANITARY LANDFILL(NEAR SITE 20)SITE 24	LTM						
PICA-067	SANITIARY LANDFILL(NEAR SITE 26)SITE 25	LTM						
PICA-071	DRUM STRG AREA(B31 YARD) SITE 29	RI/FS						
PICA-072	FORMER GAS STATION/ DRMO(SITE 31)	LTM						
PICA-075	EQPMT & WASTE STORAGE IN 3000-AREA	RI/FS						
PICA-076	FORM METL PLATG WSTWTR FAC/LAGOONS B-24	RA(O)						
PICA-077	Area E Groundwater (Site 38)	LTM						
PICA-079	ORDNANCE/EXPLOSIVE BLDGS 800 AREA	RA(O)						
PICA-085	BLDS IN 500-AREA	RI/FS						
PICA-091	BLDGS IN 200-AREA	RI/FS						
PICA-093	WASTE BURIAL AREA NEAR SITES 19&34(180)	LTM						
PICA-096	BLDG 22,PRECISION MACHINE SHOP(SITE 117)	RI/FS						
PICA-097	BLD 41,PESTICIDE STR & FORM OIL/W SEP	RI/FS						
		RD						
		RA(C)						
PICA-102	FORMER WASTE DUMP/CHEMICAL LAB	LTM						
PICA-107	BLDGS 404,407,&408,CHMCL LAB&PROP PLANTS	RI/FS						
		RD						
		RA(C)						
PICA-108	BLDGS in 400/300 AREA	RI/FS						
PICA-111	FORMER BLDG 435,PROPELLANT SOLV MIXING	RI/FS						

PICATINNY ARSENAL IRP Schedule

SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
PICA-122	PROPELLANT TESTING (BLDG 197) SITE 126	RI/FS						
PICA-131	FORMER ORDNANACE MANUFAC. (BLDG 266)	RI/FS						
		RD						
		RA(C)						
PICA-134	R&D LAB/Chem Storage 3000-Area	RI/FS						
PICA-135	BLDGS IN THE 900-AREA	RI/FS						
PICA-136	HIGH PRESSURE BOILER (BLDG 3013) SITE 79	RI/FS						
PICA-143	ORDNANCE FAC (BLDGS 717,722,732)SITE 108	RI/FS						
PICA-145	500 AREA BUILDINGS SITE 110	RI/FS						
PICA-146	PROPELLANT PLANT (BLDG 561) SITE 113	RI/FS						
PICA-149	PROPELLANT PLANT (BLDG541) SITE 149	RI/FS						
		RD						
		RA(C)						
PICA-155	TECUP BUILDINGS SITE 178	RI/FS						
PICA-162	SHELL BURIAL AREAS NEAR SITE 5	RI/FS						
PICA-163	Propellnt/Rcket Prod 1300/1400 Area	RI/FS						
PICA-164	RESERVOIR NEAR BLDG 3159 SITE 103	RI/FS						
		RD						
		RA(C)						
		LTM						
PICA-171	ORDNANCE BLDG/EXPLOSIVES PROD.	RI/FS						
PICA-175	ORDNANCE BLDGS in 600-AREA	RI/FS						
PICA-184	BUILDINGS(1600,1601,1609,1610) SITE 94	RI/FS						
PICA-192	APPLE TREES RECREATIONAL AREA	RI/FS						

PICATINNY ARSENAL IRP Schedule

SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
PICA-193	GREEN POND AND BEAR SWAMP BROOK SITE 190	LTM						
PICA-195	BLDGS IN 1400/1300/3100/1000 AREAS	RI/FS						
PICA-199	FORMER PISTOL RANGE DUMP&NAVY MANURE PIT	RI/FS						
PICA-200	AREA (L) OTHER BUILDINGS	RI/FS						
PICA-204	MID-VALLEY GROUNDWATER	RA(C)						
		LTM						
PICA-205	AREA B GROUNDWATER	RA(O)						
		LTM						
PICA-206	AREA C GROUNDWATER	LTM						
PICA-209	BUILDING 167, LOCOMOTIVE AREA, BLDG. 430	RI/FS						

PICATINNY ARSENAL

Army Defense Environmental Restoration Program
Military Munitions Response Program

MMRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 15/5

Installation Site Types with Future and/or Underway Phases

10 Unexploded Munitions/Ordnance

(PBA@MR PICA, PICA-003-R-01, PICA-004-R-01, PICA-005-R-01, PICA-006-R-01, PICA-008-R-01, PICA-010-R-01, PICA-012-R-01, PICA-013-R-01, PICA-014-R-01)

Most Widespread Contaminants of Concern

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
PICA-004-R-01	1926 EXPLOSION SITE-TD	IRA	WASTE REMOVAL - SOILS	2009
PICA-007-R-01	Former-DRMO YARD	IRA	REMOVAL	2009
PICA-004-R-01	1926 EXPLOSION SITE-TD	IRA	UXO CLEARANCE	2011
PICA-008-R-01	Lakes	IRA	INSTITUTIONAL CONTROLS	2013

Duration of MMRP

Date of MMRP Inception 200212

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201612/201612

Date of MMRP completion including Long Term Management (LTM): 201612

MMRP Contamination Assessment

Contamination Assessment Overview

An SI was initiated for all 11 sites in February 2006 and was completed in FY08. MEC in the soil are a major concern.

Cleanup Exit Strategy

The SI and subsequent investigations will determine the cleanup strategy for each site. More than likely, all the sites will require an RI/FS, an RD, and a remedial action (construction) [RA(C)] for removal of soils and any explosives that are found. See the individual cleanup strategies for more detailed information.

MMRP Previous Studies

	Title	Author	Date
2003			
	Final US Army Closed, Transferring and Transferred Range/Site Inventory for Picatinny Arsenal, New Jersey	Malcolm Pirnie, Inc.	DEC-2003
2006			
	Final Historical Records Review, Picatinny Arsenal, New Jersey	Malcolm Pirnie, Inc.	DEC-2006
2007			
	Final Work Plan, Picatinny Arsenal, New Jersey	Malcolm Pirnie, Inc.	JUL-2007
	EE/CA Workplan	PIKA/MPI	DEC-2007
2008			
	Final Site Inspection, Picatinny Arsenal, New Jersey	Malcolm Pirnie, Inc.	MAY-2008
	Mount Hope Time Critical Removal Action Addendum	PIKA/MPI	JUN-2008
2009			
	Mount Hope Time Critical Removal Action Addendum	MPI	JAN-2009
2010			
	Engineering Evaluation/Cost Analysis Report	PIKA/MPI	JUN-2010
	TCRA Report for ICM removal	ARCADIS	AUG-2010

PICATINNY ARSENAL

Military Munitions Response Program

Site Descriptions

Site ID: PBA@MR PICA
Site Name: PBA for MR sites at Picatinny
Alias: None

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 03

Phases	Start	End
PA	200401	200704
SI	200705	200905
RI/FS	200910	201612

RIP Date: N/A

RC Date: 201612

SITE DESCRIPTION

This is a programmatic site that includes the following MMRP eligible sites:
PICA-003-R-01: 1926 Explosion Radius
PICA-004-R-01: 1926 Explosion Site-TD
PICA-005-R-01: Green Pond
PICA-006-R-01: Former Operational Areas incorporating the essence of the safety designation
PICA-007-R-01: Former Defense Reutilization and Marketing Office (DRMO) Yard
PICA-008-R-01: Lakes
PICA-010-R-01: Shell Burial Grounds
PICA-013-R-01: Inactive Munitions Waste Pit
PICA-014-R-01: Inactive Munitions Waste Pit TD

CLEANUP/EXIT STRATEGY

This site was created to track funds for the July 2010 USACE Multi-award Military Munitions Services (MAMS) PBA contract. Post-PBA requirements for each site are tracked separately under each site in AEDB-R. The RI is currently underway for the nine MMRP sites and the FS will begin in FY14.

Site ID: PICA-003-R-01
Site Name: 1926 Explosion Radius
Alias: None

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	200212	200312
SI	200602	200805
RI/FS	200910	201512
IRA	200708	201512

RIP Date: N/A

RC Date: 201512

SITE DESCRIPTION

This MRS includes the on-post area affected by the explosion of the Lake Denmark Naval Ammunition Depot in 1926. The 1926 explosion radius MRS consists of the explosion center and the area within a one-mile radius, minus off-post property, areas that fall on operational ranges, areas that fall on surface danger zones (SDZs) for operational ranges where there is the potential for an ongoing release of MEC due to the use of the range, and areas identified as separate MRSs. Thus, the 1926 explosion radius MRS consists of 1,562 acres.

According to an historical report, an estimated 2.5 million pounds of explosives detonated in the explosion, including: TNT, 25-pound Navy Mark I bombs, Mark II bombs, Mark III, Mark IV aircraft bombs, Mark V bombs, bomb accessories (e.g., fins, tails), aerial bombs, 14-inch class B, 14-in armor piercing (AP) rounds, and five-inch and eight-inch shells.

Based on the final SI dated April 2008, the following HRR MRSs were consolidated into this MRS: 1926 Explosion Radius (PICA-003-R-01), Former DRMO Yard, and Former Burning Ground (PICA-007-R-01), and Former Projectile Range (site ID: N/A).

In 2008, an EE/CA was conducted at six locations within the 1926 Explosion Site Radius MRS. The investigated areas included the RCI Military Housing Project (Navy Hill Housing, Fisher's Pond, and Farley Avenue), childcare development center (CDC), electromagnetic research facility (ERF), and PHS&T. A total of 45 MEC items and 6,380 pounds of munitions debris (MD) items were found throughout the six investigated areas.

An IRA was conducted at PICA-007-R-01 that is called the improved conventional munitions (ICM) removal action in the Former DRMO Yard. Because PICA-007-R-01 was combined with PICA-003-R-01 in the SI, all future requirements associated with PICA-007-R-01 are tracked under PICA-003-R-01.

The SI was completed in FY08. The EE/CA for the RCI (Navy Hill Housing, Fisher's Pond, and Farley Avenue), CDC, ERF, and PHS&T was approved. The RI contract was funded in FY10 an the full work plan approved in the spring of 2012. The RI fieldwork was completed in FY12 for the site; the results are fairly well summarized in the Executive Summary Report of September by WESTON.

The RI report will be submitted in April of 2013 and approval expected in October of 2013. The FS, PP and ROD are expected to be awarded in FY14.

A LUC NTCRA DD was signed in the spring of 2012. The LUC work plan was approved by Army and the regulators in the fall of 2012 and is currently implemented through the final ROD action which is expected in FY16 or later.

The RI contract was funded in FY10 and is tracked under PBA@MR PICA. The RI work plan was approved in summer 2011 and the fieldwork was implemented starting in FY12.

A LUC NTCRA DD was signed in the spring of 2012. The LUC WP was approved by Army and the regulators in the fall of 2012 and is currently implemented currently and will be through the final ROD for the site which is expected in FY16 or later.

Site ID: PICA-003-R-01
Site Name: 1926 Explosion Radius
Alias: None

CLEANUP/EXIT STRATEGY

An FS, PP and ROD are expected. An award for the contract for the implementation of these aspects is expected in FY14. There is not enough information to predict the exact plan for a RD and the RA for this site in order to certify a cost estimate.

Site ID: PICA-004-R-01
Site Name: 1926 EXPLOSION SITE-TD
Alias: None

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	200212	200312
SI	200602	200805
RI/FS	200910	201512
IRA	200711	201108

RIP Date: N/A

RC Date: 201512

SITE DESCRIPTION

This MRS consists of all off-post properties that fall within a one-mile (1,609 meters) radius of the center of the 1926 Lake Denmark explosion (PICA-003-R-01). The 1926 Explosion Site off-post consists of vacant land and commercial property, including the Mt. Hope Quarry, which covers the largest area of this MRS. The quarry is located adjacent to PTA on the eastern side of the fence line that marks the installation boundary. This MRS consists of 833 acres.

Review of recent aerial photographs shows the active quarry face to currently be approximately 700 ft (213 meters) from the fence line and approximately 1,100 ft (325 meters) from the closest shell burial area, which represents the closest former crater from the 1926 explosion. Over the past four years, which is how long EOD records are kept, several MEC finds were made at the quarry; all of the items found were manufactured prior to 1926. After the HRR began, the frequency of the MEC finds at the quarry increased; this is assumed to be related to the quarry's active face moving toward PTA. As a result, from December 2006 to March 2007, a TCRA was performed for 22.6 acres of the quarry, which was the area identified by the quarry manager as planned rock blast and processing areas. The purpose of the TCRA was to significantly reduce the imminent safety hazard presented to the Mt. Hope Quarry employees.

In spring 2008 TCRA activities were conducted on an additional 22 acres at Mt. Hope Quarry as the operational area at the quarry expanded. During the second phase of the TCRA, 130 MD items were uncovered and removed from the site.

The SI was completed in FY08. The third TCRA was implemented in 2010 and completed in March 2011 because of a delay regarding safety concerns during implementation.

The RI contract was funded in FY10, the work plan approved in spring of 2012 by the regulators and the fieldwork completed by fall of 2012. The RI report is scheduled for submission in April of 2013 to the regulators, their approval of the report is expected by October of 2013.

The FS, PP and ROD is expected to be awarded in FY 14.

The RI contract was funded in FY10 and is tracked under PBA@MR PICA. The RI work plan was approved in summer 2011 and the fieldwork was started in FY12.

CLEANUP/EXIT STRATEGY

An FS, PP and ROD are expected. An award for the contract for the implementation of these aspects is expected in FY 14. There is not enough information to predict the exact plan for a RD and the RA for this site in order to certify a cost estimate.

Site ID: PICA-005-R-01
Site Name: Green Pond
Alias: None

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 03

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

Media of Concern: Sediment, Surface Water

Phases	Start	End
PA	200212	200312
SI	200602	200805
RI/FS	200910	201512
IRA	201203	201512

RIP Date: N/A

RC Date: 201512

SITE DESCRIPTION

The Green Pond MRS, which covers approximately 1.1 acres, consists of the portion of GPB located south of the 9th Street bridge and north of the boundary of the former DRMO Yard. Since this MRS is a brook, it is possible that the stream channel and banks may be altered due to erosion and deposition. Therefore, this MRS extends from bank to bank, regardless of stream morphology, and includes a 15-foot buffer zone on each side of the banks. The Green Pond MRS lies entirely within the limits of the 1926 Lake Denmark explosion radius MRS. GPB, which is approximately 22,400 linear ft (6,828 meters), flows southwest from the outfall of Picatinny Lake through the center of the installation. MEC have been found protruding from the banks and buried alongside the banks of GPB, although the source of the MEC is unknown.

The site is associated with two AEDB-R sites, PICA-193 and PICA-194. PICA-194 was combined with PICA-193 and both are being addressed under PICA-193. The cost-to-complete (CTC) does not cover all MEC/MC, discarded military munitions (DMM), and MC for all the phases. Various investigations have taken place at the site since 1983. During the last investigation in 1999, the concentrations of VOCs, pesticides, SVOCs, PCBs, explosives, and metals exceeded LOCs for surface waters. The concentrations of VOCs, SVOCS, PCBs, pesticides and metals exceeded the LOCs for sediments. Contaminated sediments are to be dredged. Whether the metals are linked to MC or not is unknown.

Based on the final SI dated April 2008, the site name was changed from the Bear Swamp/Green Pond site to the Green Pond site in order to be more descriptive of actual site operations.

Additionally, the cost associated with MC is not estimated because it is being addressed under the IRP.

The SI was completed in FY08. The RI was funded in FY10. The RI contract was funded in FY10 an the full workplan approved in the spring of 2012. The RI fieldwork was completed in FY12 for the site; the results are fairly well summarized in the Executive Summary Report of September by WESTON.

A LUC NTCRA DD was signed in the spring of 2012. The LUC work plan was approved by Army and the regulators in the fall of 2012 and is currently implemented currently and through the final ROD action which is expected in FY16 or later.

The FS, PP and ROD are expected to be awarded in FY14.

The RI contract was funded in FY10 and is tracked under PBA@MR PICA. The RI work plan was basically approved in summer 2011 and the fieldwork was implemented starting within FY12.

A LUC NTCRA DD was signed in the spring of 2012. The LUC work plan was approved by Army and the regulators in the fall of 2012 and is currently implemented currently and will be through the final ROD for the site which is expected in FY16 or later.

CLEANUP/EXIT STRATEGY

An FS, PP and ROD are expected. An award for the contract for the implementation of these aspects is expected in FY14. There is not enough information to predict the exact plan for a RD and the RA for this site in order to certify a cost estimate.

Site ID: PICA-006-R-01
Site Name: Former Operational Areas
Alias: None

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	200212	200312
SI	200602	200805
RI/FS	200910	201512
IRA	201203	201512

RIP Date: N/A

RC Date: 201512

SITE DESCRIPTION

This MRS covers approximately 1,977 acres and consists of all areas of the installation south of Shinkle Road that are other than operational ranges, do not fall within an SDZ for operational ranges with the potential for ongoing releases of MEC. Throughout the years there have been numerous UXO items found this MRS. According to an installation survey report, in 1973 PTA used 2,036 acres for R&D and testing.

A dredge pile and a former sanitary landfill, which cover approximately 13 acres, are located on the southern portion of this MRS. The dredge pile lies entirely within the limits of the landfill and both the dredge pile and landfill are reported MEC disposal areas. According to several reports, shells were disposed of in the sanitary landfill. In addition, dredge spoils from GPB were reportedly placed at this location and GPB was dredged due to the presence of shells. In interviews with PTA personnel and contractors, it was noted that MEC were identified during utility trenching operations in the landfill. An explosive, NC, has been found in numerous soil and groundwater samples collected from both areas.

A waste burial was used as an unregulated disposal area and consists of undeveloped land in a low-lying wetland. The exact years of operation are unknown; however, extensive landfilling activities are believed to have occurred in the 1960s and 1970s. During a site walk in January 1998, MD, identified as large projectiles, were observed in this area; no base plates or fuses/nose plugs appeared to be installed on these projectiles. In addition, 40mm grenades were found in trenches installed under the IRP.

The site is associated with two AEDB-R sites, PICA-068 and PICA-067. PICA-068 was closed and any issues arising from the site addressed under PICA-067. The CTC does not cover all ordnance/explosive (OE) for all the phases. Previous investigations have determined that the COCs are metals, SVOCs, pesticides and PAHs. Contaminated soil will be removed from the site and potential groundwater concerns addressed under PICA-206. Whether the metals are linked to MC or not is unknown.

Based on the final SI dated April 2008, the following HRR MRSs were consolidated into this MRS:
- Dredge Pile and Former Sanitary Landfill (PICA-006-R-01),
- Former Operation Area South (site ID: N/A), and
- Waste Burial Area near sites 19 and 34 (site ID: N/A).

Additionally, based on research conducted during the HRR that indicated that the name was no longer applicable, the site name for this MRS changed from Dredge Pile/Landfill to Former Operational Areas.

The SI was completed in FY08. The RI contract was funded in FY10. It is scheduled to be implemented in the next five years.

An additional 370 acres in FY11 were considered ER-A eligible based on the redefining of PTA operational ranges and their buffers.

The RI contract was funded in FY10 and the full work plan approved in the Spring of 2012. The RI fieldwork was completed in FY12 for the site; the results are fairly well summarized in the Executive Summary Report by WESTON, the contractor performing the RI.

Site ID: PICA-006-R-01
Site Name: Former Operational Areas
Alias: None

The RI Report will be submitted in April of 2013 and approval expected in October of 2013. The FS, PP and ROD are expected to be awarded in FY14.

A LUC NTCRA DD was signed in the spring of 2012. The LUC WP was approved by Army and the regulators in the fall of 2012 and is currently implemented currently and through the final ROD action which is expected in FY16 or later.

The RI contract was funded in FY10 and is tracked under PBA@MR PICA. The RI work plan was approved in summer 2011 and the fieldwork was implemented in FY12.

A LUC NTCRA DD was signed in the spring of 2012. The LUC work plan was approved by Army and the regulators in the fall of 2012 and is currently implemented currently and will be through the final ROD for the site which is expected in FY16 or later.

CLEANUP/EXIT STRATEGY

An FS, PP and ROD are expected. An award for the contract for the implementation of these aspects is expected in FY14. There is not enough information to predict the exact plan for a RD and the RA for this site in order to certify a cost estimate.

Site ID: PICA-008-R-01
Site Name: Lakes
Alias: None

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 04

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

Media of Concern: Sediment, Surface Water

Phases	Start	End
PA	200212	200312
SI	200602	200805
RI/FS	200910	201512
IRA	200811	201512

RIP Date: N/A

RC Date: 201512

SITE DESCRIPTION

There are two large lakes on PTA that were historically used as ranges: Lake Denmark and Picatinny Lake. Although they are not adjacent to each other, these two lakes were consolidated into one MRS since the conceptual site models (CSMs) for both lakes are very similar. This MRS covers 758 acres and includes the lakes as well as the on-post land portions covered by the SDZs associated with the ranges.

Previously, the lakes were used as a mortar impact area and an experimental munitions testing range. Three ranges, 60mm, 81mm, and 4.2-inch inert projectile ranges, were identified. These ranges shared a single firing point on the southern end of the lake, but had several lines of fire. Several impact areas were located on the northern end of the lake. A 20mm cannon range that fired across Lake Denmark toward an impact area near Building 1221 was also identified.

Picatinny Lake covers approximately 125 acres and is located in the central portion of the installation. Picatinny Lake is used for recreational boating and fishing; however, swimming is banned and fish consumption advisories are in effect. Picatinny Lake is also used as a source of non-potable water for production purposes and firefighting. There are two islands within Picatinny Lake, Flare Island, which is an artificial peninsula constructed of coal slag and Picnic Island, located in the southern portion of the lake. There is no historical evidence of former munitions testing conducted on Picnic Island. Picatinny Lake has had several uses, including a range and a testing and storage area. A three-inch Barbette gun firing range was previously located on the southeast shore of the lake; the impact area was located across the lake near Buildings 810 and 824. Flare Island, an artificial island, was formerly used to test flares and pyrotechnics. The lake was also used for the underwater storage of smokeless powder and explosives.

The site is associated with AEDB-R site PICA-015. The AEDB-R description sheet indicated that ICs would be recommended for this site.

Based on the final SI in April 2008, the HRR MRSs for Lake Denmark (PICA-008-R-01, which is the on-post portion) and Picatinny Lake Site (PICA-009-R-01) were consolidated into this MRS. Additionally, in order to describe actual site operations at both areas since their CSMs are very similar, the site name for this MRS changed to Lakes MRS. MC is not estimated because it is being addressed under the IRP.

The SI was completed in FY08. The RI contract was funded in FY10 and a work plan approved in early 2011. The RI contract was funded in FY10 and the full work plan approved in the spring of 2012. The RI fieldwork was completed in FY12 for the defined site (both lakes); the results are fairly well summarized in the Executive Summary Report by WESTON.

The RI contract was funded in FY10 an the full work plan approved in the spring of 2012. The RI fieldwork was completed in FY12 for the site; the results are fairly well summarized in the Executive Summary Report by WESTON.

The RI report will be submitted in April of 2013 and approval expected in October of 2013.

The FS, PP and ROD are expected to be awarded in FY14.

Site ID: PICA-008-R-01
Site Name: Lakes
Alias: None

A LUC NTCRA DD was signed in the spring of 2012. The LUC work plan was approved by Army and the regulators in the fall of 2012 and is currently implemented currently and through the final ROD action which is expected in FY16 or later.

The RI contract was funded in FY10 and is tracked under PBA@MR PICA. The RI work plan was approved in summer 2011 and the fieldwork was implemented starting in FY12.

A LUC NTCRA DD was signed in the spring of 2012. The LUC work plan was approved by Army and the regulators in the fall of 2012 and is currently implemented currently and will be through the final ROD for the site which is expected in FY16 or later.

CLEANUP/EXIT STRATEGY

An FS, PP and ROD are expected. An award for the contract for the implementation of these aspects is expected in FY14. There is not enough information to predict the exact plan for a RD and the RA for this site in order to certify a cost estimate. This will be followed by 30 years of LTM, which will include six five-year reviews and six MEC monitoring events (one event every five years).

Site ID: PICA-010-R-01
Site Name: Shell Burial Grounds
Alias: None

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 05

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

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	200212	200312
SI	200602	200805
RI/FS	200910	201512
IRA	201203	201512

RIP Date: N/A

RC Date: 201512

SITE DESCRIPTION

During the Lake Denmark explosion in 1926, three craters were formed; two are adjacent to one another. These three craters formed two burial grounds (one on the southeastern portion of the installation near Building 3150 and another on the southern portion of the installation near Building 3100) that were used for the disposal of approximately 25 tons of explosives from the explosion. Although the two burial grounds are not adjacent to each other, they were consolidated into one MRS since their CSMs are the same.

The burial ground near Building 3150 covers approximately 1.5 acres and is located near the southeastern installation boundary while the other burial ground near Building 3100 covers approximately four acres and is located in the southern half of the installation. Materials that were disposed of at these burial grounds include projectiles, mines, depth charges, fuses, explosives, small arms ammunition, propellants, and, possibly, rocket fuels. It was also reported that the site potentially contains acids, pickling liquors, cyanide, and phenol. The Navy continued to use these areas for explosives disposal until 1945; no records of the types of material or amounts disposed of were kept. After the Navy discontinued its use of these areas, they were covered with 20 feet of fill. Currently, ICs exist for both burial grounds as they are fenced in and posted with warning signs.

The site is associated with AEDB-R site, PICA-162. Previous investigations conducted from 1998 to 2000 indicated that cyanide and VOCs were detected in the groundwater at concentrations exceeding LOCs. Whether the metals are linked to MEC or not is unknown.

Based on the final SI dated April 2008, the following HRR MRSs were consolidated into this MRS: Shell Burial Ground No. 1 (PICA-010-R-01, this is near Building 3150) and Shell Burial Ground No. 2 (PICA-011-R-01, near Building 3100). Additionally, the site name for this MRS changed to Shell Burial Grounds in order to describe actual site operations at both areas since their CSMs are the same. No MC estimated because it is being addressed under the IRP.

The SI was completed in FY08. The RI contract was funded in FY10 an the full work plan approved in the spring of 2012. The RI fieldwork was completed in FY 12 for the site; the results are fairly well summarized in the Executive Summary Report of by WESTON.

The RI Report will be submitted in April of 2013 and approval expected in October of 2013.

The FS, PP and ROD are expected to be awarded in FY14.

A LUC NTCRA DD was signed in the spring of 2012. The LUC work plan was approved by Army and the regulators in the fall of 2012 and is currently implemented currently and through the final ROD action which is expected in FY16 or later.

The RI contract was funded in FY10 and is tracked under PBA@MR PICA. The RI work plan was approved in summer 2011 and the fieldwork was implemented starting in FY12.

A LUC NTCRA DD was signed in the spring of 2012. The LUC work plan was approved by Army and the regulators in the fall of 2012 and is currently implemented currently and will be through the final ROD for the site which is expected in FY16 or later.

Site ID: PICA-010-R-01
Site Name: Shell Burial Grounds
Alias: None

CLEANUP/EXIT STRATEGY

An FS, PP and ROD are expected. An award for the contract for the implementation of these aspects is expected in FY14. There is not enough information to predict the exact plan for an RD and the RA for this site in order to certify a cost estimate.

Site ID: PICA-012-R-01
Site Name: Lake Denmark - Off-Post
Alias: None

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 05

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

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	200212	200312
SI	200602	200805
RI/FS	200910	201512

RIP Date: N/A

RC Date: 201512

SITE DESCRIPTION

This MRS covers approximately 96 acres and consists of all off-post property that falls within the safety fan of the Lake Denmark ranges. This site contains commercial/light industrial properties and vacant land; the largest property associated with the Lake Denmark Off-Post MRS is Radiation Technologies, Inc. (RTI), a superfund site.

According to the USEPA's website, the RTI superfund site occupies 263 acres immediately adjacent to PTA's boundary near Lake Denmark. Past activities at RTI included testing and development of rocket engines and propellants. One of the COCs associated with the RTI site is perchlorate, which has been found in groundwater. Investigation and cleanup activities at this site are ongoing. Currently, the former RTI facility is leased by Sterigenics, a global company that provides sterilization and ionization services for the healthcare, food safety, and advanced applications industries. According to the Sterigenics website, the Sterigenics operation in Rockaway Township is a gamma facility.

The SI was completed in FY08. The USEPA used UXO-construction support during the superfund investigation at the site in 2010.

The RI contract was funded in FY10 an the full workplan approved in the spring of 2012. The RI fieldwork was completed in FY12 for the site; the results are fairly well summarized in the Executive Summary Report by WESTON.

The RI report will be submitted in September of 2013 and approval expected in October of 2013.

The FS, PP and ROD are expected to be awarded in FY14.

The RI contract was funded in FY10 and is tracked under PBA@MR PICA. The RI work plan was approved in summer 2011 and the fieldwork was implemented starting in FY12.

CLEANUP/EXIT STRATEGY

An FS, PP and ROD are expected. An award for the contract for the implementation of these aspects is expected in FY14. There is not enough information to predict the exact plan for an RD and the RA for this site in order to certify a cost estimate

Site ID: PICA-013-R-01
Site Name: Inactive Munitions Waste Pit
Alias: None

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 04

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

Media of Concern: Sediment, Soil

Phases	Start	End
PA	200212	200312
SI	200602	201101
RI/FS	201104	201512

RIP Date: N/A

RC Date: 201512

SITE DESCRIPTION

The original MRS as defined by the site investigation report covered approximately 94 acres; however, since the redefinition of the ranges on Picatinny, only 53 acres are considered eligible.

The site is located northwest of the northernmost end of Picatinny Lake, near the installation boundary. This site contains a range and the associated SDZ. A portion of the SDZ falls off post and is tracked separately in AEDB-R as the Inactive Munitions Waste Pit--Off-Post MRS (PICA-014-R-01). This site was reportedly used from 1955 to the mid-1980s for the testing and storage of munitions and explosives. Based on information contained in the RI concept plan the Inactive Munitions Waste Pit appears to have consisted of an open field with a burn cage, a gun turret, and a building (Building 656). Whether or not all of these structures were present throughout the site's operation is unknown. Although the site name suggests that materials may have been buried in pits, site features or other evidence have been identified indicating that burial of munitions took place have been identified. In the 1980s the site was covered with topsoil and sand, and in the late-1990s, the majority of the site was covered with fill and rock. A review of recent aerial photographs confirms that fill material up to 12 feet thick is present at the site.

The SI was completed in FY08. The RI contract was funded in FY10 and a work plan approved in early 2011. The RI contract was funded in FY10 and the full workplan approved in the spring of 2012. The RI fieldwork was completed in FY12 for the defined site (both Lakes); the results are fairly well summarized in the Executive Summary Report by WESTON.

The RI report will be submitted in April 2013 and approval expected in October 2013.

The FS, PP and ROD are expected to be awarded in FY14. A LUC NTCRA DD was signed in spring 2012.

The LUC work plan was approved by Army and the regulators in fall 2012 and is currently implemented currently and through the final ROD action which is expected in FY16 or later.

The RI contract was funded in FY10 and is tracked under PBA@MR PICA. The RI work plan was approved in summer 2011 and the fieldwork was implemented starting in FY12.

A LUC NTCRA DD was signed in the spring of 2012. The LUC work plan was approved by Army and the regulators in the fall of 2012 and is currently implemented currently and will be through the final ROD for the site which is expected in FY16 or later.

CLEANUP/EXIT STRATEGY

An FS, PP and ROD are expected. An award for the contract for the implementation of these aspects is expected in FY14. There is not enough information to predict the exact plan for a RD and the RA for this site in order to certify a cost estimate.

Site ID: PICA-014-R-01
Site Name: Inactive Munitions Waste Pit - TD
Alias: None

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	200212	200312
SI	200602	200805
RI/FS	200910	201512

RIP Date: N/A

RC Date: 201512

SITE DESCRIPTION

This MRS covers 7.5 acres and consists of all off-post property that falls within the SDZ of the Inactive Munitions Waste Pit MRS (i.e., within a 1,250-foot radius from the center of the inactive munitions waste pit MRS).

The RI investigation of the area was completed by FY12; the RI report will be submitted by April of 2103 and expected approval by September. The FS, PP and ROD are expected to be awarded in FY14.

The RI contract was funded in FY10 and is tracked under PBA@MR PICA. The RI work plan was approved in summer 2011 and the fieldwork was implemented starting in FY12.

CLEANUP/EXIT STRATEGY

An FS, PP and ROD are expected. An award for the contract for the implementation of these aspects is expected in FY14. There is not enough information to predict the exact plan for an RD and the RA for this site in order to certify a cost estimate.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
PICA-001-R-01	FormerMunitions&PropellantTest Area	201203	
PICA-002-R-01	1000-METER RANGE	200803	Based on the Final HRR dated November 2006, this MRS has been consolidated with site PICA-001-R-01. As such, this MRS is RC.
PICA-007-R-01	Former-DRMO YARD	200909	Site combined with PICA-004-R-01. Only opened temporarily to fund the ICM cleanup within the site.
PICA-009-R-01	PICATINNY LAKE SITE	200803	Based on the Stakeholder Draft SI dated November 2007, this MRS has been consolidated with site PICA-008-R-01. As such, this MRS is RC.
PICA-011-R-01	SHELL BURIAL GROUND #2	200803	Based on the Stakeholder Draft SI dated November 2007, this MRS has been consolidated with site PICA-010-R-01. As such, this MRS is RC.

MMRP Schedule

Date of MMRP Inception 200212

Past Phase Completion Milestones

2004

PA	(PICA-001-R-01 - FormerMunitions&PropellantTest Area, PICA-002-R-01 - 1000-METER RANGE, PICA-003-R-01 - 1926 Explosion Radius, PICA-004-R-01 - 1926 EXPLOSION SITE-TD, PICA-005-R-01 - Green Pond, PICA-006-R-01 - Former Operational Areas, PICA-007-R-01 - Former-DRMO YARD, PICA-008-R-01 - Lakes, PICA-009-R-01 - PICATINNY LAKE SITE, PICA-010-R-01 - Shell Burial Grounds, PICA-011-R-01 - SHELL BURIAL GROUND #2, PICA-012-R-01 - Lake Denmark - Off-Post, PICA-013-R-01 - Inactive Munitions Waste Pit, PICA-014-R-01 - Inactive Munitions Waste Pit - TD)

2007

PA	(PBA@MR PICA - PBA for MR sites at Picatinny)

2008

SI	(PICA-001-R-01 - FormerMunitions&PropellantTest Area, PICA-003-R-01 - 1926 Explosion Radius, PICA-004-R-01 - 1926 EXPLOSION SITE-TD, PICA-005-R-01 - Green Pond, PICA-006-R-01 - Former Operational Areas, PICA-007-R-01 - Former-DRMO YARD, PICA-008-R-01 - Lakes, PICA-010-R-01 - Shell Burial Grounds, PICA-012-R-01 - Lake Denmark - Off-Post, PICA-014-R-01 - Inactive Munitions Waste Pit - TD)

2009

IRA	(PICA-007-R-01 - Former-DRMO YARD)
SI	(PBA@MR PICA - PBA for MR sites at Picatinny)

2011

SI	(PICA-013-R-01 - Inactive Munitions Waste Pit)
IRA	(PICA-004-R-01 - 1926 EXPLOSION SITE-TD)

2012

RI/FS	(PICA-001-R-01 - FormerMunitions&PropellantTest Area)

Additional Past Phase Completion Milestones

EE/CA Report for RCI, CDC, and various BRAC footprints

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:

Schedule for Next Five-Year Review: 2016

Estimated Completion Date of MMRP at Installation (including LTM phase): 201612

PICATINNY ARSENAL MMRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
PBA@MR PICA	PBA for MR sites at Picatinny	RI/FS						
SITE ID	**SITE NAME**	**PHASE**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19+**
PICA-003-R-01	1926 Explosion Radius	RI/FS						
		IRA						
SITE ID	**SITE NAME**	**PHASE**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19+**
PICA-004-R-01	1926 EXPLOSION SITE-TD	RI/FS						
SITE ID	**SITE NAME**	**PHASE**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19+**
PICA-005-R-01	Green Pond	RI/FS						
		IRA						
SITE ID	**SITE NAME**	**PHASE**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19+**
PICA-006-R-01	Former Operational Areas	RI/FS						
		IRA						
SITE ID	**SITE NAME**	**PHASE**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19+**
PICA-008-R-01	Lakes	RI/FS						
		IRA						
SITE ID	**SITE NAME**	**PHASE**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19+**
PICA-010-R-01	Shell Burial Grounds	RI/FS						
		IRA						
SITE ID	**SITE NAME**	**PHASE**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19+**
PICA-012-R-01	Lake Denmark - Off-Post	RI/FS						
SITE ID	**SITE NAME**	**PHASE**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19+**
PICA-013-R-01	Inactive Munitions Waste Pit	RI/FS						
SITE ID	**SITE NAME**	**PHASE**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19+**
PICA-014-R-01	Inactive Munitions Waste Pit - TD	RI/FS						

PICATINNY ARSENAL

Army Defense Environmental Restoration Program
Compliance Restoration

CR Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 2/1

Installation Site Types with Future and/or Underway Phases

1 Small Arms Range
(CC-057)

Most Widespread Contaminants of Concern

Metals, Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern

Soil

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

Site ID	Site Name	Action	Remedy	FY
N/A				

Duration of CR

Date of CR Inception: 200201

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201508/201508

Date of CR completion including Long Term Management (LTM): 201508

CR Contamination Assessment

Contamination Assessment Overview

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

Cleanup Exit Strategy

Although the RI report was approved by the regulators in early-FY12, the expected contracting for the next phase was delayed until the results from the MMRP of the same area can be understood and integrated into the contracting effort. The award for the development of a FS through RIP is expected in the third quarter of FY13.

CR Previous Studies

Title	Author	Date
There are no Previous Studies		

PICATINNY ARSENAL

Compliance Restoration

Site Descriptions

Site ID: CC-057
Site Name: Former Skeet Range
Alias: PICA 093

STATUS

Regulatory Driver: OTHER

Contaminants of Concern: Metals, Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern: Soil

Phases	Start	End
PA	200811	200901
SI	200901	201006
RI/FS	201003	201508

RIP Date: N/A

RC Date: 201508

SITE DESCRIPTION

The site was used as a skeet range and archery range, but aerial photos indicate there were extensive historical fill operations in this area. The area is open to hunters and MMRP issues are also present within this site.

A high level of lead in the soil was first encountered in 2006 but further investigation was required to determine if the site was ER,A eligible due to historic landfilling activities (as an extension of site 180/PICA 093). An investigation in 2008 further defined the problem and determined the lead was from activities related to the recently closed Skeet Range.

The area of the currently-known soil contamination is approximately two acres; however, the extent of the contamination from a horizontal and vertical extent has not been determined. The known contaminated area, which is located within the shot fall zone of the Former Skeet Range, is situated within a floodplain and partially within a wetland.

Lead contamination in the soils ranges up to 209,000 mg/kg. Lead contamination in sediment ranges up to 21,500 mg/kg and the surface water levels were as high as 354 ug/L. These levels are orders of magnitude above the state regulatory limit and mostly exceed the Lead Model risk.

The 2008, Site 180 and Former Skeet Range Lead Investigation Data Report were provided to the USEPA and the NJDEP in December 2008. The USEPA responded with a letter requesting that the Army make every effort to facilitate timely follow-up sampling and remedy implementation at the Former Skeet Range.

An abbreviated work plan to characterize lead and PAH concentrations, which are common constituents in shotgun ammunition and clay targets, respectively, was approved by the regulators. Fieldwork for this SI was conducted in spring 2010 and a contract was awarded in FY10 for an RI. The RI work plan was submitted to the USEPA and the NJDEP in October 2010 and comments were received in December 2010. The RI work plan was finalized in January 2011 and fieldwork began and completed. The RI report was submitted in December of 2011 and comments have been addressed. The RI report was approved by the regulators in May of 2012. A contract for the FS through RIP is anticipated to be awarded in FY13. A factor in the award is to ensure that information from the MMRP RI for the Former Operational Area is addressed by the scope.

CLEANUP/EXIT STRATEGY

An FS, PP and ROD are expected; however, there is not enough information to characterize or conduct a certifiable cost estimate for a RA at this time.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
CC-055	MTBE Contaminated GW in 600 Area	201105	

CR Schedule

Date of CR Inception: 200201

Past Phase Completion Milestones

2004
PA (CC-055 - MTBE Contaminated GW in 600 Area)
2005
SI (CC-055 - MTBE Contaminated GW in 600 Area)
2009
PA (CC-057 - Former Skeet Range)
2010
SI (CC-057 - Former Skeet Range)
2011
RI/FS (CC-055 - MTBE Contaminated GW in 600 Area)

Projected Phase Completion Milestones

See attached schedule

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

To Be Determined

Final RA(C) Completion Date:

Schedule for Next Five-Year Review: 2016

Estimated Completion Date of CR at Installation (including LTM phase): 201508

PICATINNY ARSENAL CR Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
CC-057	Former Skeet Range	RI/FS						

Community Involvement

Technical Review Committee (TRC): None

Community Involvement Plan (Date Published): 201302

Restoration Advisory Board (RAB): RAB established 199512

RAB Adjournment Date: N/A
RAB Adjournment Reason: None

Additional Community Involvement Information

The surrounding community for PTA includes the towns of Dover, Jefferson, Rockaway, Denville, and the Borough of Wharton. In 1989, a TRC was formed to address citizen concerns over environmental issues at the arsenal. In December 1995, the TRC evolved into the RAB. This board includes representatives of the Army, the USEPA Region 2, the NJDEP, representatives of the surrounding towns from Dover, Jefferson, Rockaway, and Denville, the Borough of Wharton, the Rockaway Township Environmental Commission, a union representative from PTA, the New Jersey Institute of Technology, and citizens from the surrounding communities.

The PTA follows Army and USEPA guidance relating to public noticing and public meetings for PPs and signed RODs.

The Army has revised the community relations plan to include both the MMRP and the IRP and provided that to the regulators, RAB, and TAPP contractors in a PDF format or hard copy if required.

The RAB expressed an interest in the TAPP program and PTA was one of the first installations to hire a TAPP contractor. The final purchase order for the current TAPP extension was purchased in summer 2009. A second waiver request by the RAB was approved by the Army and was provided for 2011. The contractor is provided all technical documents and a copy of all correspondence to and from the regulators. The TAPP as well as three members of the RAB attended the November 2010 and June 2011 TPP meetings for the kickoff for the MMRP RI.

The TAPP contractor also provides frequent updates of the technical issues to the RAB and resolutions from the regulatory meeting and comments to PPs as requested by the RAB. The RAB decides which document to review by vote during a RAB meeting or by email via DOODLE which is a web site for voting.

During the latest period, two of the more noteworthy events included the election of the new civilian co-chair in October 2011 and continued meetings (sometimes combined with public meeting for PP's) on roughly a quarterly basis.

Administrative Record is located at

Environmental Affairs Division
US Army Installation Management Agency
Building 319, Picatinny Arsenal 07806:
Call for appointment at 973-724-6748 or email at ted.gabel@us.army.mil

Information Repository is located at

Rockaway Library
61 Mount Hope Road
Rockaway, NJ 07866
973.627.2344

and

Morris County Library
30 East Hanover Road
Whippany, NJ 07981
973.285.6930

Current Technical Assistance for Public Participation (TAPP): 200008

TAPP Title: TAPP Contract

Potential TAPP: Picatinny has contracted out the services of the existing TAPP contractor to continue for services after the

Baltimore Corps of Engineers contract. The RAB voted in February to extend the RAB contract for another year. The next Purchase Order was bought in September of 2012.