

N60138.AR.002446
FISC WILLIAMSBURG
5090.3a

FINAL SITE MANAGEMENT PLAN FISCAL YEARS 2011 THROUGH 2012 NWS
WILLIAMSBURG FISC VA
3/1/2011
CH2M HILL

Final
Site Management Plan
Fiscal Years 2011 — 2012

Naval Weapons Station Yorktown Cheatham Annex
Williamsburg, Virginia



Prepared for

Department of the Navy

Naval Facilities Engineering Command
Mid-Atlantic Division

Contract No.
N62470-08-D-1000
CTO-WE22

March 2011

Prepared by

CH2MHILL.

Final

**Site Management Plan
Fiscal Years 2011-2012**

**Naval Weapons Station Yorktown Cheatham Annex
Williamsburg, Virginia**

Contract Task Order WE22

March 2011

Prepared for

**Department of the Navy
Naval Facilities Engineering Command
Mid-Atlantic**

Under the

**NAVFAC CLEAN 1000 Program
Contract N62470-08-D-1000**

Prepared by



Virginia Beach, Virginia

Contents

Acronyms and Abbreviations	v
1 Introduction	1-1
2 Background and Regulatory Framework	2-1
2.1 CAX Activity Description.....	2-1
2.2 CAX Environmental History	2-1
2.2.1 Regulatory History	2-1
2.2.2 Hydrogeologic Setting.....	2-2
2.3 CERCLA Process.....	2-3
2.3.1 Munitions Response Program.....	2-4
2.3.2 Community Participation	2-4
3 CAX Site and AOC Descriptions	3-1
3.1 Base-Wide Studies.....	3-1
3.1.1 Initial Assessment Study.....	3-1
3.1.2 Confirmation Studies	3-1
3.1.3 Pond Study.....	3-2
3.1.4 Community Involvement Plan Update	3-2
3.1.5 Basewide Documents Available	3-3
3.2 Site Descriptions.....	3-3
3.2.1 Site 4 – Outdated Medical Supply Disposal Area	3-3
3.2.2 Site 7 – Old DuPont Disposal Area.....	3-5
3.2.3 Site 9 – Transformer Storage Area	3-7
3.2.4 Site 11 – Bone Yard	3-8
3.2.5 AOC 1 – Scrap Metal Dump	3-10
3.2.6 AOC 2 – Dextrose Dump	3-12
3.2.7 AOC 3 – CAD 11/12 Pond Bank.....	3-13
3.2.8 AOC 6 – Penniman AOC	3-14
3.2.9 AOC 7 – Drum and Can Disposal Area.....	3-17
3.2.10 AOC 8 – Area South of Site 7	3-18
3.2.11 AOC 9 – Penniman Lake.....	3-19
3.3 MRP Sites	3-20
3.3.1 Other-than-Operational Marine Pistol and Rifle Range.....	3-20
4 References	4-1

Tables

2-1	CAX Site Summary
2-2	WPNSTA Yorktown/CAX Partnering Team Consensus Statement Summary
2-3	Major Elements of the CERCLA Process
3-1	1999 Waste Source Sampling at AOC 6

Figures

- 1-1 Location of WPNSTA Yorktown and CAX
- 2-1 Site/AOC Locations and CERCLA Status
- 3-1 Location of Major CAX Surface Water Bodies
- 3-2 Site 4 - Outdated Medical Supply Disposal Area
- 3-3 Site 7 - Old DuPont Disposal Area
- 3-4 Site 9 - Transformer Storage Area
- 3-5 Site 11 - Bone Yard
- 3-6 AOC 1 - Scrap Metal Dump
- 3-7 AOC 2 - Dextrose Dump
- 3-8 AOC 3 - CAD 11/12 Pond Bank
- 3-9 AOC 6 - Penniman AOC
- 3-10 AOC 7 - Drum and Can Disposal Area
- 3-11 AOC 8 - Area South of Site 7
- 3-12 AOC 9 - Penniman Lake
- 3-13 Marine Pistol and Rifle Range

Schedules

- 3-1 Site 4 FY11-12 Schedule
- 3-2 Site 7 FY11-12 Schedule
- 3-3 Site 9 FY11-12 Schedule
- 3-4 Site 11 FY11-12 Schedule
- 3-5 AOC 1 FY11-12 Schedule
- 3-6 AOC 2 FY11-12 Schedule
- 3-7 AOC 3 FY11-12 Schedule
- 3-8 AOC 6 FY11-12 Schedule
- 3-9 AOC 7 FY11-12 Schedule
- 3-10 AOC 8 FY11-12 Schedule
- 3-11 AOC 9 FY11-12 Schedule

Acronyms and Abbreviations

AM	Action Memorandum
AOC	area of concern
bgs	below ground surface
CAX	Cheatham Annex
CCR	Construction Closeout Report
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CIP	Community Involvement Plan
COPC	contaminant of potential concern
CTE	central tendency exposure
cy	cubic yard
DCE	dichloroethene
DD	Decision Document
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
DoD	Department of Defense
DOI	Department of the Interior
EE/CA	Engineering Evaluation/Cost Analysis
ER	Environmental Restoration
ERA	Ecological Risk Assessment
ERP	Environmental Restoration Program
ESI	Expanded Site Inspection
ESS	Explosives Safety Submission
ft	feet/foot
ft/day	feet per day
ft ²	square feet
ft ² /day	square feet per day
FFA	Federal Facilities Agreement
FS	Feasibility Study
FY	Fiscal Year
HHRA	human health risk assessment
HI	hazard index
HRS	Hazard Ranking System
IAS	Initial Assessment Study
µg/kg	micrograms per kilogram
µg/L	micrograms per liter

MCL	maximum contaminant level
MEC	munitions and explosives of concern
mg/kg	milligrams per kilogram
MRP	Munitions Response Program
NAVFAC	Naval Facilities Engineering Command
NCP	National Contingency Plan
NFA	no further action
NFRAP	No Further Response Action Plan
ng/kg	nanograms per kilogram
NPL	National Priorities List
PA	Preliminary Assessment
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PP	Proposed Plan
ppm	parts per million
RA	Removal or Remedial Action
RAB	Restoration Advisory Board
RBC	risk-based concentration
RC	response complete
RD	Remedial Design
RDX	cyclotrimethylene trinitroamine
RI	Remedial Investigation
RIP	remedy in place
RME	reasonable maximum exposure
ROD	Record of Decision
SERA	Screening Ecological Risk Assessment
SI	Site Investigation
SMP	Site Management Plan
SSP	Site Screening Process
SVOC	semivolatile organic compound
TCE	trichloroethylene
TCLP	toxicity characteristic leaching procedure
TCRA	Time-critical Removal Action
TM	Technical Memorandum
TNT	trinitrotoluene
UFP-QAPP	Uniform Federal Policy for Quality Assurance Project Plans
UFP-SAP	Uniform Federal Policy for Sample Analysis Plan
USEPA	United States Environmental Protection Agency
UU/UE	unlimited use and unrestricted exposure
VDEQ	Virginia Department of Environmental Quality
VOC	volatile organic compound
WPNSTA	Naval Weapons Station

SECTION 1

Introduction

This document presents the fiscal years (FYs) 2011 through 2012 annual amendment to the Site Management Plan (SMP) for Naval Weapons Station (WPNSTA) Yorktown Cheatham Annex (CAX), Williamsburg, Virginia. This SMP meets the requirements of the Federal Facilities Agreement (FFA) between the United States Environmental Protection Agency (USEPA) Region III, Commonwealth of Virginia Department of Environmental Quality (VDEQ), and Naval Facilities Engineering Command (NAVFAC) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (USEPA et al., 2005). This annual amendment to the SMP is being submitted in accordance with the requirements of the FFA. [Figure 1-1](#) illustrates the location of CAX within the southeast portion of the Commonwealth of Virginia.

The purpose of the SMP is to provide a management tool for NAVFAC Mid-Atlantic, WPNSTA Yorktown, CAX, VDEQ, USEPA, and their consultants to use in planning, reviewing, and setting priorities for all response activities at CAX. The SMP establishes schedules and conceptual approaches for continued CERCLA activities at CAX Environmental Restoration (ER) sites. The prioritization of activities, proposed schedules, and work descriptions were jointly developed by the Navy, USEPA, and VDEQ on the basis of goals agreed to by all parties.

The SMP is a working document that is updated annually. This annual SMP amendment will supersede the 2010-2011 SMP finalized in April 2010.



- Legend**
- Activity Boundaries
 - City/County Boundaries

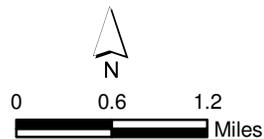


Figure 1-1
Location of WPNSTA Yorktown and CAX
Site Management Plan for FY 2010 to 2011
WPNSTA Yorktown, Yorktown, Virginia
CAX, Williamsburg, Virginia

Background and Regulatory Framework

2.1 CAX Activity Description

CAX is located on the site of the former Penniman Shell Loading Plant, which was a large powder- and shell-loading facility operated during World War I. The Penniman facility closed in 1918 and between 1918 and 1923 was dismantled. Between 1923 and 1943, the property was used for farming or left idle, until CAX was commissioned in 1943 as a satellite unit of the Naval Supply Depot to provide bulk storage facilities and serve as an assembly and overseas shipping point throughout World War II. CAX is bordered to the east by the York River, to the north by Queen Creek, to the west by the Queens Lake neighborhood, and to the south by King Creek and WPNSTA Yorktown (Figure 1-1). At inception, CAX occupied approximately 3,349 acres; however, several portions of the original base were declared surplus and transferred to other government jurisdictions, including the Department of Interior (DOI) (i.e., National Park Service), the Commonwealth of Virginia, and York County. CAX is currently comprised of 2,300 acres and is divided into two separate parcels, with the larger parcel situated along the banks of the York River and the smaller parcel located south of the Colonial Parkway and encompassing Jones Pond (Figure 1-1). Included in the 2,300 acres is the 786-acre former DOI property, which was located north and west of Site 2 up to Queens Creek and reacquired by the Navy in July 2004. Almost all of the activities at CAX (administration, training, maintenance, support, and housing) take place in the larger portion of the Installation. The smaller parcel is used mainly as a watershed protection area. In July 1987, CAX was designated the Hampton Roads Navy Recreational Complex. Today, the mission of CAX includes supplying Atlantic Fleet ships and providing recreational opportunities to military and civilian personnel.

2.2 CAX Environmental History

2.2.1 Regulatory History

The first environmental investigation completed at CAX was conducted by the Navy prior to state and federal regulatory oversight of environmental activities at the installation. A Navy Initial Assessment Study (IAS) was conducted in 1984 and identified 12 potentially contaminated areas (C.C. Johnson & Associates and CH2M HILL, 1984). The IAS recommended additional investigation at Sites 1, 9, 10, and 11. In 1998, the Navy, USEPA, and VDEQ performed a site visit and identified five additional potential source areas and designated them as Areas of Concern (AOCs) 1 through 5. In 1999, USEPA identified potential sources associated with the past Penniman Facility and designated this area as AOC 6. CAX was included on the National Priorities List (NPL) in January 2001 with a Hazard Ranking System (HRS) score of 48.7. Additional investigations and activities were conducted in 2002. In 2003, the Navy, USEPA, and VDEQ agreed that no further action (NFA) was necessary for some of the sites and a No Further Response Action Planned

(NFRAP) Decision Document (DD) for Sites 2, 3, 5, 6, 8, and 10 was signed (Baker, 2003). The response complete (RC) decision for Site 12 was documented in a 2004 NFRAP DD (Baker, 2004a). In 2004, the Navy also identified AOC 7 (Drum and Can Disposal Area) as an area of concern for desktop audit. This AOC was included in Appendix B of the FFA which was signed in March 2005 and identified the 12 sites and seven AOCs (USEPA et al., 2005). Sites 1, 4, 7, and 11 are identified in the FFA Findings of Fact for CERCLA implementation with ultimate closure under a Record of Decision (ROD). During field investigations in 1999, it was determined that the area thought to be Site 7 (a World War I era disposal site) was actually a more recent disposal area. The actual location of Site 7 was later identified approximately 500 feet (ft) to the north, thus the area previously thought to be Site 7 was re-designated as AOC 8 (Area South of Site 7). In 2006, the Navy initiated investigations of numerous Munitions Response Program (MRP) sites including the other-than-operational Marine Pistol and Rifle Range at CAX, which had an NFA determination (CH2M HILL, 2008a). In 2009, the NFA ROD for Site 1 was signed, and the Navy designated Penniman Lake as AOC 9.

Table 2-1 identifies both active sites and AOCs addressed under CERCLA at CAX and those sites which it was determined that no action or NFA is required. **Figure 2-1** shows the location of each site/AOC at CAX. Active sites and AOCs are discussed in Section 3. Inactive sites (those with no action or NFA decisions) will be removed from Section 3 in the SMP update subsequent to their signed DD, with the exception of the one CAX MRP site, which will remain in the SMP's MRP section although it has had an NFA decision. The FY08-09 SMP update was a complete revision of the CAX SMP and is considered a "baseline" SMP, as it includes descriptions for all CAX sites, even those that had NFA decisions prior to FY08 (i.e., Site 2, Site 3, Site 5, Site 6, Site 8, Site 10, Site 12, AOC 4, and AOC 5). Thus it is a good reference document for those sites.

Partnering

The Navy works in partnership with USEPA and VDEQ and has established a formal CAX Partnering Team to implement CERCLA. Partnering Team decisions are documented through consensus statements and/or through the meeting minutes; a summary of Team¹ consensus statements is presented in **Table 2-2**.

2.2.2 Hydrogeologic Setting

CAX is situated within the Virginia Coastal Plain Physiographic Province, which is underlain by unconsolidated sediment of the Quaternary, Tertiary, and Cretaceous ages. These sediments dip to the southeast, with a combined thickness of 1,900 ft in the vicinity of CAX. Deposition and erosion associated with fluctuating sea levels resulted in terraces that decrease in topographic elevation in a stair-step pattern with scarps, oriented north to south, that delineate the eroded shoreline along the toe of each terrace.

A total of ten geologic formations have been identified (Brockman et al., 1997) beneath CAX. The upper most geologic formations consists of alluvial, colluvial, and marsh deposits composed of silt, sand, and pebbles with some clay. The geologic units are grouped into hydrostratigraphic units based upon hydraulic characteristics. The aquifers separated by

¹ WPNSTA Yorktown and CAX conducted joint Partnering from 2000 through September 2008, when the bases split into separate Partnering Teams.

confining/semi-confining units relevant to CERCLA investigations at CAX are, from youngest to oldest (i.e., from shallow to deep); the Columbia aquifer, the Cornwallis Cave aquifer, and the Yorktown-Eastover aquifer. Groundwater flow is locally controlled by topography with discharge to nearby surface water bodies and a primary flow and discharge direction toward the York River.

When present, the Columbia aquifer ranges in thickness from 5 to 10 ft thick, with horizontal hydraulic conductivity between about 0.4 to 8 feet per day (ft/day) and vertical hydraulic conductivity between 1.7×10^{-4} to 1.7×10^{-1} ft/day (Brockman et al., 1997). The hydraulic properties of the Cornwallis Cave aquifer are highly variable due to depositional effects and physical and geochemical weathering. In general, horizontal hydraulic conductivity ranges from 0.3 to 9 ft/day and vertical conductivity ranges from 6.2×10^{-4} to 2.4×10^{-1} ft/day (Speiran and Hughes, 2001).

The Yorktown-Eastover aquifer extends across all of CAX and ranges from 60 to 100 ft thick. Horizontal hydraulic conductivity ranges from 0.004 to 3 ft/day and vertical hydraulic conductivity ranges from 1.7×10^{-5} to 4.8×10^{-1} ft/day. Transmissivity of the aquifer ranges from 0.5 to 40 square feet per day (ft²/day), with groundwater flow from west-to-east.

2.3 CERCLA Process

The following sections provide an overview of the CERCLA process. The objectives of the CERCLA process are to evaluate the nature and extent of contamination at a site, and to identify, develop, and implement appropriate remedial actions (RAs) in order to protect human health and the environment. The major elements of the CERCLA process are identified below and described in greater detail in [Table 2-3](#):

- Preliminary Assessment (PA)
- Site Investigation (SI)
- Remedial Investigation/Feasibility Study (RI/FS)
- Treatability Study
- Engineering Evaluation/Cost Analysis (EE/CA) and Removal Action (may be implemented at any time in the CERCLA process)
- Proposed Plan (PP) and ROD
- Five-Year Review
- Remedial Design (RD) and RA
- Post-RA Monitoring and Reporting
- RC/Remedy In Place (RIP)

2.3.1 Munitions Response Program

The Department of Defense (DoD) has established the MRP under the Defense Environmental Restoration Program (ERP) to address munitions and explosives of concern (MEC) at locations other than operational ranges. The DoD and the Navy are establishing policy and guidance for response actions under the MRP; however, the key program drivers developed to date conclude that munitions response actions will be conducted under the process outlined in the National Contingency Plan (NCP) as authorized by CERCLA.

2.3.2 Community Participation

In conjunction with WPNSTA Yorktown, CAX has developed a Community Involvement Plan (CIP) (CH2M HILL, 2009a) and established a Restoration Advisory Board (RAB) comprised of members of the community, local environment group members, and state and federal officials who meet semi-annually (May and November) to keep the community informed on environmental issues at WPNSTA Yorktown and CAX.

The documents prepared for the program are maintained in the administrative record file for review by the public. The index of CAX Administrative Records is available at the information repository. Documents from the administrative record are available through the NAVFAC ATLANTIC Public Affairs Officer at:

Public Affairs Officer
Naval Facilities Engineering Command
6506 Hampton Boulevard
Norfolk, Virginia 23508-1278
Phone: (757) 322-8005
NFECL_PMO@navy.mil

Table 2-1
CAX Site Summary
FY 11-12 SMP

Site ID	Site Name	Site Description	EPA HRS (Source #)	FFA Status (1994) ¹	Current CERCLA Status	Comments/Notes
Site 1	Landfill Near Incinerator	1.3 acre landfill; 1999 removal action of river bank debris and bank stabilization; 2003 removal of surface debris; 2003 removal action of soil; 2005 removal action of soil & debris and breakwater construction; 2007 removal action of soil/SD	Source scored (1)	Findings of Fact CERCLA RI/FS/PP/ROD	Response Complete (all media)	NFA ROD for all media (signed September 2009)
Site 2	Contaminated Food Disposal Area	50 ft diameter food disposal pit; 12 to 15 feet deep No SW/SD associated with site	Not identified in HRS	Appendix C - NFA	Response Complete (all media)	NFRAP for all media (signed August 2003)
Site 3	Submarine Dye Disposal Area	55 gallon drum storage area; 1970 removal action of drums No SW/SD associated with site	Source not scored	Appendix C - NFA	Response Complete (all media)	NFRAP for all media (signed August 2003)
Site 4	Outdated Medical Supply Disposal Area	Ravine used as a disposal area covered with soil; 1998 removal action of surface debris	Source not scored	Findings of Fact CERCLA RI/FS/PP/ROD	SI (all media)	Draft SI (2010)
Site 5	Photographic Chemicals Disposal Area	Borrow pit used as a disposal area No SW/SD associated with site	Source not scored	Appendix C - NFA	Response Complete (all media)	NFRAP for all media (signed August 2003)
Site 6	Spoiled Food Disposal Area	12 to 15 feet deep disposal pit No SW/SD associated with site	Source not scored	Appendix C - NFA	Response Complete (all media)	NFRAP for all media (signed August 2003)
Site 7	Old DuPont Disposal Area	Large disposal area; 2004-2006 removal action of surface debris and geotube installation; 2008 removal action of soil/waste	Source not scored	Findings of Fact CERCLA RI/FS/PP/ROD	SI (all media)	Final SI UFP-SAP and SI fieldwork (2010)
Site 8	Landfill Near Building CAD 14	0.25 acre landfill No SW/SD associated with site	Source not scored	Appendix C - NFA	Response Complete (all media)	NFRAP for all media (signed August 2003)
Site 9	Transformer Storage Area	7000 square foot storage area; 1980 area was graded and covered with gravel No SW/SD associated with site	Source scored (2)	Appendix A - CERCLA SI/SSP	SI (all media)	Draft SI (2010)
Site 10	Decontaminated Agent Disposal Area Near First Street	75 to 100 gallon decontamination agent disposal area No SW/SD associated with site	Source not scored	Appendix C - NFA	Response Complete (all media)	NFRAP for all media (signed August 2003)
Site 11	Bone Yard	2.7 acre storage area; 1999 removal action of surface debris	Source scored (3)	Findings of Fact CERCLA RI/FS/PP/ROD	ROD (all media)	Construction Completion Report, Hot Spot Removal Action at Site 11 (2009); TM – Consensus for NFA in Soil and GW, Site 11 – Bone Yard (2009); NFA PP for all media (2010)
Site 12	Disposal Site Near Water Tower	Scrap metal disposal area No SW/SD associated with site	Not identified in HRS	Appendix C - NFA	Response Complete (all media)	NFRAP for all media (signed April 2004)
AOC 1	Scrap Metal Dump	Consist of two areas: 0.2 acre northern area and 0.4 acre southern area	Source not scored	Appendix A - CERCLA SI/SSP	SI (all media)	Draft SI (2010)
AOC 2	Dextrose Dump	1 acre disposal Area; 1998 housekeeping operation of surface debris No SW/SD associated with AOC	Source not scored	Appendix A - CERCLA SI/SSP	SI (all media)	Draft SI (2010)
AOC 3	CAD 11/12 Pond Bank	Pile of metal banding, empty drums 99 FI; SW/SD associated with AOC investigated as Site 4	Not identified in HRS	Appendix A - CERCLA SI/SSP	SI (all media)	Draft SI (2010)
AOC 4	Outdated Medical Supply Disposal Area	Determined to be the same area as Site 4	Not identified in HRS	Not Identified	Response Complete Incorporated into Site 4	Response Complete
AOC 5	Debris Area	Determined to be the same area as Site 1	Not identified in HRS	Not Identified	Response Complete Incorporated into Site 1	Response Complete
AOC 6	Penniman AOC (Site 13) Penniman Shell Loading Plant operated by DuPont Corporation TNT manufacturing plant in 1916 (Plant demolished in 1925)	Earthen ammonia settling pits	Source scored (4)	Appendix A - CERCLA SSA/SSP	SI (all media)	Draft SI (2010)
		Concrete-lined TNT graining house sump	Source scored (5)			
		Earthen and brick-lined TNT catch box ruins	Source scored (6)			
		Metallic waste slag material	Source scored (7)			
		1918 wooden drum storage	Source scored (8)			
AOC 7	Drum and Can Disposal Area	4800 ft ³ disposal area containing cans of PCE; 2006 removal action of surface debris	Not identified in HRS	Appendix B - Preliminary screening area	SI (all media)	Draft SI (2010)
AOC 8	Area South of Site 7	Debris disposal area; formerly referred to as Site 7	Not Scored	Not Identified	SI (all media)	Draft SI (2010)
AOC 9	Penniman Lake	48-acre surface water body located in the southeastern portion of CAX 2000 Pond Study resulted in "catch and release" fishing restrictions because of PCB concentrations in sediment	Not Scored	Not Identified	SI (soil/sediment)	UFP-SAP (2010)
Marine Pistol and Rifle Range	Marine Pistol and Rifle Range	7 acre small caliber munitions range	Not Scored	MRP	Response Complete (all media)	NFA Declaration (ESI, March 2008)

Notes:

¹ -FFA Findings of Fact (pg 16) identified Sites 1, 4, 7, & 11 as RI/FS/PP/ROD for closure, but also identified these Sites in Appendix A as SSP

NA or NFA Sites

AOC - Area of Concern
CAX - Cheatham Annex
CERCLA - Comprehensive Environmental Response Compensation and Liability Act
EE/CA - Engineering Evaluation/Cost Analysis
ESI - Expanded Site Investigation
FFA - Federal Facilities Agreement
ft - feet
FS - Feasibility Study
FY - Fiscal Year

GW - Groundwater
HRS - Hazard Ranking Score
NA - No Action
NFA - No Further Action
NFRAP - No Further Response Action Planned
PCE - Tetrachloroethene
PP - Proposed Plan
RI - Remedial Investigation
ROD - Record of Decision

SAP - Sampling Analysis Plan
SD - Sediment
SI - Site Investigation
SW - Surface Water
TM - Technical Memorandum
TNT - Trinitrotoluene
UFP - Unified Federal Policy

Table 2-2
 WPNSTA Yorktown/CAX Partnering Team Consensus Statement Summary
 FY 11-12 SMP

NUMBER	CONSENSUS STATEMENT NUMBER	DATE	FACILITY	SITE	AOC	TOPIC	CONSENSUS STATEMENT
	NA	10/24/2001	CAX	2		Site 2 – Contaminated Food Disposal Area	The team thinks no further action (NFA) for site review site at end of site visit.
	NA	10/24/2001	CAX	3		Site 3 – Submarine Dye Disposal Area	The team decided to review the site at the end of the site visit.
	NA	10/24/2001	CAX	4		Site 4 – Outdated Medical Supply Disposal Area	The team wants to use the site visit to determine the extent of the debris. S. Milhalko stated that Virginia Department of Environmental Quality (VDEQ) would require that site would either have to have removal with backfill or cover such that it would not be uncovered again.
	NA	10/24/2001	CAX	6		Site 6 – Spoiled Food Disposal Area	The team agreed to drive by site to determine location at end of site visit.
	NA	10/24/2001	CAX	12		Site 12 – Disposal Site Near Water Tower	The team proposed that approach be a Site Screening Area (SSA) and during site visit evaluate need for this. For site visit, evaluate a proposed sampling plan to be evaluated during site visit, prepare site map for site visit.
	NA	10/24/2001	CAX		4	Area of Concern (AOC) 4 – IR Site 4 – Outdated Medical Supply Disposal Area	During the site visit, the approach will be evaluated and a decision is to be made.
	NA	10/24/2001	CAX		5	AOC 5 – Debris Area	Group decided to combine AOC 5 and Site 1, eliminate AOC 5.
	NA	10/24/2001	CAX			Site Update	Dave Martin, as topic leader, and other members wanted to focus on reviewing sites proposed for NFA, then review sites during site visit & what the team wants to do during the site visit (drive by versus walk the site).
	NA	10/24/2001	CAX			Site Update	For site visit, the team decided that a technical guide to the sites would be prepared that incorporates previous information on the site, the Partnering Team discussion, approach to the site, data gaps. This package is to include: site descriptions, maps, previous sampling locations, aerial photographs with site locations/approximate boundaries and for some sites a proposed sampling plan.
	NA	12/3/2001				Define Metrics in Partnering Deliverable	Keep as stated in deliverable.
	NA	12/4/2001	CAX	2		Site 2 – Contaminated Food Disposal Area	The team agreed that no further action is warranted at this site given that only spoiled food was disposed of at the site.
	NA	12/4/2001	CAX	4		Site 4 – Outdated Medical Supply Disposal Area	AOC-3 is part of AOC-4, AOC-4 is now Site 4- Outdated Medical Supply Disposal Area.
	NA	12/4/2001	CAX	5		Site 5 – Photographic Chemicals Disposal Area	Due to the small volume of photochemicals disposed in an area that can not be located using historical records and the disposal of these wastes in a "marl" pit consisting of clayey native soils that would prohibit transport of the photochemicals, no further action is warranted at this site.
	NA	12/4/2001	CAX	6		Site 6 – Spoiled Food Disposal Area	The team agreed that no further action is warranted at this site given that only spoiled food was disposed of at the site.
	NA	12/4/2001	CAX	8		Site 8 - Landfill Near Building CAD 14 Site Visit	On page 4-16 of handout, last paragraph, delete first sentence "The VDEQ...site."
	NA	12/4/2001	CAX	8		Site 8 - Landfill Near Building CAD 14 Site Visit	The team agreed that no further action is warranted at this site given that only non-hazardous materials such as spoiled meat, spoiled candy, and clothing were disposed at the site and all anecdotal records indicate that the clothing was not impregnated with any chemicals.
	NA	12/4/2001	CAX	11		Site 11 – Bone Yard	The team agreed to investigate Penniman Lake and Site 11 separately. Penniman Lake is already in the budget cycle as a separate site.
	NA	12/4/2001	CAX	12		Site 12 – Disposal Site Near Water Tower	The team agreed that further sampling is required at the site prior to making a NFA decision. The approach agreed to consist of a grid of five soil samples (1 center, 4 corner points). One sample will be analyzed for Target Analyte List (TAL)/Target Compound List (TCL) and the remaining 4 will be analyzed for TAL metals only. An additional three soil samples will be collected between the railroad tracks adjacent to the site. These analytical results will be compared to the grid analytical results to determine whether or not the railroad maybe a source area.
	NA	2/5/2002	CAX	9		Site 9 - Transformer Storage Area	Based upon review of polychlorinated biphenyl (PCB) confirmation data, proceed with NFA for Site 9.
	NA	2/5/2002	CAX	11		Site 11 – Bone Yard	The team agreed with the proposed sampling plan pending resolution of their comments.
		2/5/2002	CAX	12		Site 12 – Disposal Site Near Water Tower	The team agreed to analyze all soil samples for TCL organics in addition to the planned TAL Metals.
	NA	2/5/2002	CAX		1	AOC 1 - Scrap Metal Dump	AOC 1 will continue as an AOC, a Work Plan will be developed for the debris removal. If no significant contamination is found, based on confirmatory soil sampling, (i.e.: meet Eco/HH requirements), the AOC will be closed. The Work Plan will be flexible to allow for in-field adjustments.
	NA	2/5/2002	CAX			GIS Needs Assessment	The Draft Final CAX GIS Needs Assessment submitted in September 2001 will be considered final. Baker will proceed with the awarded CAX GIS Implementation.
		2/5/2002	WPNSTA/CAX	12		5-Year Review	The team agreed to form a subgroup to research and report out at the March meeting on this issue. The subgroup consists of Bob Stroud and Jennifer Davis.
	NA	2/5/2002	WPNSTA/CAX			2002 Goals Update	The team agreed to include the Goals as part of each meeting's minutes.
	NA	2/5/2002	WPNSTA/CAX			Consensus Statement Documentation	The team agreed to document Consensus Statements by site as an addendum to the Site Management Plan. Mary is to evaluate possible methods (by site, chronologically, etc.) and report back to the team during the March Meeting.
	NA	2/5/2002	WPNSTA/CAX			Draft FFA	Scott Park/Jennifer Davis to prepare Draft FFA Addendum for counsel review and submittal to USEPA and VDEQ.

Table 2-2
 WPNSTA Yorktown/CAX Partnering Team Consensus Statement Summary
 FY 11-12 SMP

NUMBER	CONSENSUS STATEMENT NUMBER	DATE	FACILITY	SITE	AOC	TOPIC	CONSENSUS STATEMENT
1	3/13/2002-1	3/13/2002	WPNSTA/CAX			Documentation of Consensus Statements	The team agreed to document Consensus Statements by site as an addendum to the Site Management Plan. A tracking number will be used to track the documents consisting of date and numerical sequence (i.e.: Month/Day/Year-Number – 3/13/02-1).
3	4/23/2002-3	4/23/2002	WPNSTA/CAX			Identification of new sites	The Team agrees that the Federal Facilities Agreement (FFA) (Sections 9.3a and 9.3b) gives the team the authority to add newly identified sites to the Site Management Plan (SMP).
4	4/24/2002-4	4/24/2002	WPNSTA/CAX			Site Management Plan	The team agreed to go final with the Fiscal Year (FY) 2002/2003 Draft SMP and revise text for the FY 2003/2004 submittal. Baker will provide Final covers for the FY 2002/2003 SMP.
5	4/24/2002-5	4/24/2002	CAX	11		Approval of Proposed Field Investigation Sampling Locations presented in the Project Plans for CTO 236	The team agreed with the sampling location revisions made during the site visit and agreed that the field investigation can be performed. The field activities will be scheduled for May 2002.
5	4/24/2002-6	4/24/2002	CAX		Penniman	Penniman AOC Sub-areas Investigation approach	The Team agrees to follow a general approach to the Penniman AOC sub-areas as follows: 1918 Drum Storage Area: Verify whether or not the kegs were used to store Ammonium Nitrate. Consider collecting surface soil samples between Buildings 225 and 113. Waste Slag Area: Based upon the understanding that the waste slag is most likely associated with maintenance activities along the rail line, a sampling approach will be developed.
7	4/24/2002-7	4/24/2002	WPNSTA/CAX			Community Relations Plan	The Team agrees to go final with the Community Relations Plan. If appropriate, final covers and spines will be submitted.
9	8/6/2002-9	8/6/2002	CAX	2, 3, 5, 8, 9, 10, 12		NFRAP Decision Document Format	The Team agreed to use the Quantico format for the NFRAP document. The team will review the No Further Response Action Plan (NFRAP) documents before finalizing them.
11	8/6/2002-11 ON HOLD	8/6/2002	CAX	3		Fluorescein Dye	The Team agrees that since Fluorescence Dye is still in use, is very water soluble hence dilutes infinitely.
12	9/18/2002-12	9/18/2002	WPNSTA/CAX			New technical team member	The Team agreed to add Marlene Ivester as a technical member to the team.
13	9/18/2002-13	9/18/2002	WPNSTA/CAX			Facilitator	The team agreed a facilitator is needed for a few meetings.
15	10/23/2002-15	10/23/2002	WPNSTA/CAX			N/A	The Team agreed to add a goal to the FY03 Team Goals to be self-facilitating by end of third Quarter 2003 (5 additional meetings).
17	10/23/2002-17	12/4/2002 Revised	WPNSTA/CAX			WPNSTA-SSAs 3-24; 23-26; 2, 8, 18 & SSA 14; GWOU I, 27-30 CAX-1, 4 & 9, 11, Background Study, NFRAP 2, 3, 5, 6, 9, 10 & 12	The WPNSTA Yorktown/CAX Partnering Team empowers the ecological technical support team to address and resolve ecological issues for various sites at WPNSTA Yorktown/CAX (see table below) to meet the dates and priority specified by the WPNSTA Yorktown/CAX Team, with Ed Corl to take the lead on meeting the schedule determined by the Team. WPNSTA: SSAs 3-24 Site Screening Process (SSP); 23-26 DF Remedial Investigation (RI); 2, 8, 18 & SSA 14 DF RI; Groundwater Operable Unit (GWOU) I Draft WP; 27-30 Draft RI CAX: 1 DF RI; 4 & 9 Draft RI (Screening Ecological Risk Assessment (SERA)); 11 Draft RI, Draft Background Study; 2, 3, 5, 6, 9, 10 & 12 Draft NFRAP
18	12/5/2002-18	12/5/2002	WPNSTA/CAX	21, 22		WPNSTA Sites 21 & 22	Based upon EPA Region III comments, Sites 21 and 22 Record of Decisions (RODs) will be rewritten as RODs with no institutional controls (ICs) because they were remediated to residential levels.
19	12/5/2002-19	12/5/2002	WPNSTA/CAX			Site Action Status Report	The Team agrees to use the SASR as a tracking tool and add it to the standard meeting format.
20	12/5/2002-20	12/5/2002	WPNSTA/CAX			Action Item List	The Team agreed that the Action Item List will be addressed during the Agenda Building Call with respect to whether or not the Action Item has been completed. If completed, a "C" will be put in the Outcome column of the Action Item list and the item will not be addressed during the subsequent Partnering Team Meeting.
21	1/29/2003-21	1/29/2003	WPNSTA/CAX			CAX Site 1 Baseline Risk Assessment	The eco subgroup discussed the issues for the CAX Site 1 RI and determined that a baseline risk assessment was warranted for the wetland area based upon a conference call prior to the December Partnering Meeting. The Navy RPM determined that based upon the existing ROD schedule and funding execution for the site, it was determined that (revised per team concurrence by MM 3/12/03) the ROD and funding schedule could not be met. Therefore, the Navy recommended that an EECA for soils/debris removal at CAX Site 1 would be the best approach. The Team agrees upon this approach.
23	3/13/2003-23	3/13/2003	CAX	1		Site clean-up goals	The Team agrees that the Draft Final Engineering Evaluation/Cost Analysis (EE/CA) for CAX Site 1 can be distributed for public comment without specific site clean-up goals. Specific clean-up goals will be presented to the Team for review and approval, and final clean-up goals will be incorporated in the Final EE/CA.
25	4/29/2003-25	4/29/2003	CAX	1		Clean-up goals at CAX Site 1	The Team agrees to the clean-up goals for the planned removal action under the EE/CA for CAX Site 1 established during a conference call on April 14, 2003 (see the attached table).
27	6/11/2003-27	6/11/2003	CAX	1		Concurrence on CAX Site Removal	USEPA Region III, Virginia Department of Environmental Quality and Atlantic Division, Naval Facilities Engineering Division agree to the proposed removal action at Cheatham Annex Site 1 – Landfill Near the Incinerator as documented in the Draft Final April 2003 EE/CA and the Action Memorandum.
28	6/17/2003-28	6/17/2003	CAX	1		CAX Site 1 RI Schedule	For CAX Site 1, the Team agrees: 1. Issue RI as a Final Round I RI with replacement pages and cover letter explaining the decision rationale. 2. Defer the Proposed Plan (PP) & ROD for the site until after completion of wetlands Baseline Ecological Risk Assessment (BERA) and Round II RI for sediments. 3. Issue a letter to file that the Feasibility Study (FS) will be deferred until completion of the Round II RI.
29	6/17/2003-29	6/17/2003	CAX	2, 3, 5, 6, 8, 10		CAX Sites 2, 3, 5, 6, 8 & 10, No further action decision	The Team agrees with the NFA remedy for CAX Sites 2, 3, 5, 6, 8 and 10 based upon the information presented for the Draft NFRAP Decision Document.
31	10-30-03-31	10/30/2003	CAX	7		CAX Site 7 TCRA	Based upon the landfill's proximity to the York River and the erosional damage associated with Hurricane Isabel, the team agrees that additional funding is necessary for a Time Critical Removal Action (TCRA) at CAX Site 7 in order to stabilize the shoreline. If additional FY 2004 funds can be obtained, the team agrees to delineate and characterize the landfill and determine the feasibility of landfill removal in the near term.
35	3-9-04-35	3/11/2004	CAX	12		Site 12 NFRAP	The team agrees with the NFA remedy for CAX Site 12 – Disposal Site Water Tower based upon the no further action remedy recommended in the Technical Memorandum submitted for review on January 12, 2004. NFRAP Decision Document with a Final Technical Memorandum as an appendix will be prepared for submittal by March 31, 2004 in accordance with the annual team 2004 goals.
36	3-22-04-36	3/22/2004	CAX	7		CAX Site 7	Based upon the field investigation conducted at CAX Site 7N, as summarized in the Draft Trenching Letter Report dated 19 March 2004, the team has agreed to move forward with a TCRA Action Memorandum as an interim action that will recommend appropriate erosion control and shoreline stabilization for the site. The team also agrees that removal of the CAX Site 7N landfill will be accomplished under an EE/CA when funding is available. While the team agreed that an esthetic clean up of the beach in the vicinity of the landfill does little to mitigate risk, the team agreed to move forward with a beach cleanup at the request of the Navy.

**Table 2-2
WPNSTA Yorktown/CAX Partnering Team Consensus Statement Summary
FY 11-12 SMP**

NUMBER	CONSENSUS STATEMENT NUMBER	DATE	FACILITY	SITE	AOC	TOPIC	CONSENSUS STATEMENT
38	5-19-04-38	5/19/2004	WPNSTA/CAX			BTAG	The Yorktown/CAX Partnering Team agrees that the role of USEPA Biological Technical Assistance Group (BTAG) members will be changed from Adjunct Member to Technical Member.
48	4-28-08-48	4/28/2008	CAX	1		CAX Site 1 GW	The Partnering Team agrees potential groundwater risks at CAX Site 1 to be acceptable for unrestricted use/unrestricted exposure as presented in the Groundwater Risk Management Technical Memorandum.
NA	(Documented in a Tech Memo)	5/22/2008 (signed)	CAX	1		CAX Site 1 Waste, Soil and Sediment	The Partnering Team agrees that NFA is warranted for waste, soil, and sediment at CAX Site 1 as presented in the Documentation for No Further Action (NFA) Regarding Site Waste, Soil, and Sediment technical memorandum.
NA	(Documented in Meeting Minutes)	3/5/2009	CAX	Former Penniman Shell Loading Plant		Add'l EPA concerns regarding remnants of former Penniman Shell Loading Plant	<p>Team agreed to the following paths forward:</p> <ul style="list-style-type: none"> • <u>In-ground batteries</u> – Could not locate. Plan to conduct another site visit in May 2009. • <u>Mixing Tanks</u> – Based on the site visit and documentation, agreement that the “mixing tanks” were in fact latrines/privies and no further action is necessary. • <u>Large Drums with side ports</u> – Soil surrounding the one known drum was sampled and nothing was detected. If others are found, additional investigations should be conducted, however at this time, no further action is needed. • <u>Detonation craters</u> – Collect one DPT soil and groundwater sample for explosives and metals near where craters are concentrated. • <u>Fuse Pit</u> – The Navy plans on digging around the footer of the fuse pit to look for piping. <p>The Navy also will excavate around the other side of the berm adjacent to the TNT Catch Box Ruins and around the Ammonia Settling Pit (AOC 6) to look for piping. The Navy will be researching Penniman archives at the Hagley Museum for blueprints related to the TNT Catch Box Ruins, Ammonia Settling Pits, and booster test pit building. The EPA concerns will be documented in either the AOC 6 SI report or a separate tech memo.</p>
NA	(Documented in Meeting Minutes)	7/16/2009	CAX			Partnering Team Deliverable	The Partnering Team agrees the Partnering Deliverable is final.
NA	(Documented in Conference Call Minutes)	11/20/2009	CAX			PCB Study	The Partnering Team agrees to include the PCB Study in the upcoming Penniman Lake SI to have one comprehensive study.
NA	(Documented in a Tech Memo)	12/14/2009 [last signature (EPA)]	CAX	11		CAX Site 11 Soil and GW	The Partnering Team agrees that NFA is warranted for soil and groundwater at CAX Site 11, as presented in the <i>Consensus for No Further Action in Soil and Groundwater, Site 11 - Bone Yard</i> technical memorandum.
NA	(Documented in Meeting Minutes)	3/18/2010	CAX			Use of Preliminary BG 95% UTLs for Draft SI reporting	The Partnering Team agrees to use the preliminary background values (calculated using the method presented in the Background Technical Memorandum that was sent to EPA Las Vegas in February 2010) for draft SI reporting (multiple AOC SI and Sites 4/9 and AOC 3 SI).
NA	(Documented in Meeting Minutes)	5/12/2010	CAX		9	Penniman Lake SI	The Partnering Team agrees to a step-approach for conducting the Penniman Lake SI.

Notes:
Decisions # 2,6,8,10,14,16,22,24,26,30,32-34,37,39-47 were strictly for WPNSTA

AOC - Area of Concern
BERA - Baseline Ecological Risk Assessment
BTAG - Biological Technical Assistance Group
CAX - Cheatham Annex
EE/CA - Engineering Evaluation/Cost Analysis
FFA - Federal Facilities Agreement
FY - Fiscal Year
GWOU - Groundwater Operable Unit
IC - Institutional Controls
NA - Not Applicable
NFA - No Further Action
NFRAP - No Further Response Action Planned
PCB - Polychlorinated Biphenyl

PP - Proposed Plan
RI - Remedial Investigation
ROD - Record of Decision
SERA - Screening Ecological Risk Assessment
SMP - Site Management Plan
SSA - Site Screening Area
SSP - Site Screening Process
TAL - Target Analyte List
TCL - Target Compound List
TCRA - Time Critical Removal Action
USEPA - United States Environmental Protection Agency
VDEQ - Virginia Department of Environmental Quality
WPNSTA - Naval Weapons Station Yorktown

**Table 2-3
Major Elements of the CERCLA Process
FY 11-12 SMP**

Preliminary Assessment (PA)	Initiation of concern about a site, area, or potential contaminant source. The PA is a limited-scope assessment designed to distinguish between sites that clearly pose little or no threat to human health or the environment and sites that may pose a threat and require further investigation. Environmental samples are rarely collected during a PA. The PA also identifies sites requiring assessment for possible response actions. If the PA results in a recommendation for further investigation, an SI is conducted.
Site Investigation (SI)	Some sites warrant preliminary or interim investigations, studies, or removal/remedial actions. If it is unclear as to whether a site should be included in the CERCLA RI/FS process, an SI is sometimes conducted to make a general determination if activities at the site have impacted environmental media. SIs typically include the collection of environmental and waste samples to determine which hazardous substances are present at a site and to determine if these substances have been released to the environment.
Remedial Investigation (RI)	During an RI, data is collected to characterize site conditions, determine the nature of the waste, assess risk to human health and the environment, and, if necessary, conduct treatability testing to evaluate the potential performance and cost of the treatment technologies being considered.
Treatability Study (TS)	Treatability studies may be conducted at any time during the CERCLA process. The need for a treatability study generally is identified during the FS. Treatability studies may be classified as either bench-scale (laboratory study) or pilot-scale (field studies). For technologies that are well-developed and tested, bench-scale studies are often sufficient to evaluate performance. For innovative technologies, pilot tests may be required to obtain the desired information. Pilot tests simulate the physical and chemical parameters of the full-scale process, and are designed to bridge the gap between bench-scale and full-scale operations. Treatability studies are performed to assist in the evaluation of a potentially promising remedial technology. The primary objectives of treatability testing are to provide sufficient data to allow treatment alternatives to be fully developed and evaluated during the FS and support the remedial design of a selected alternative.
Engineering Evaluation/Cost Analysis (EE/CA) and Interim Removal Action (IRA)	Removal actions are implemented to clean up or remove hazardous substances from the environment at a specific site in order to mitigate the spread of contamination. Removal actions may be implemented at any time during the CERCLA process. Removal actions are classified as either time-critical or non-time-critical actions. Actions taken immediately to mitigate an imminent threat to human health or the environment, such as the removal of corroded or leaking drums, are classified as time-critical removal actions. Removal actions that may be delayed for 6 months or more without significant additional harm to human health or the environment are classified as non-time-critical removal actions (NTCRA). For a NTCRA, an EE/CA is prepared rather than the more extensive FS. The public has an opportunity to comment on the EE/CA during an announced formal public comment period. An EE/CA focuses only on the substances to be removed rather than on all contaminated substances at the site. It is possible for a removal action to become the final remedial action if the risk assessment results indicate that no further remedial action is required in order to protect human health and the environment.
Feasibility Study (FS)	The FS is the mechanism for the development, screening, and detailed evaluation of alternative remedial actions. The RI and FS can be conducted concurrently; data collected in the RI influences the development of remedial alternatives in the FS, which in turn affect the data needs and scope of treatability studies and additional field investigations. This phased approach encourages the continual scoping of the site characterization effort, which minimizes the collection of unnecessary data and maximizes data quality.
Proposed Plan (PP)	A PP presents the remedial alternatives developed in the FS and recommends a preferred remedial alternative. The public has an opportunity to comment on the PP during an announced formal public comment period. Site information is compiled in an administrative record and placed in the general IR program information repositories established at local libraries for public review. The public comments are reviewed and the responses are recorded in a document called a Responsiveness Summary. At the end of the public comment period, an appropriate remedial alternative is chosen to protect human health and the environment. All parties directly involved in the restoration program (Navy, EPA, and VDEQ) must agree on the selected alternative.
Record of Decision (ROD)	The ROD document is issued to explain the selected remedial action. Public comments received during the PP are addressed as part of the responsiveness summary in the ROD. A notice to the public is issued when the ROD is signed by Navy and EPA following State concurrence.
Remedial Design/Remedial Action (RD/RA)	The final stage in the process is the RD/RA. The technical specifications for cleanup remedies and technologies are designed in the RD phase. If land use controls are a component of the remedy, the Land Use Control Remedial Design is generated during this phase. The RA is the actual construction or implementation phase of the cleanup process.
Remedy In Place	For long-term remedies where it is anticipated that remedial action objectives will be achieved over a long period, the RIP milestone signifies the completion of the remedial action construction phase, and that the remedy has been implemented and has been demonstrated to be functioning as designed (i.e., all testing has been accomplished and the remedy will function properly). Once all RCs and RIPs have been documented for every site at the facility and the terms of the FFA have been met, site closeout and NPL deletion is completed.
Response Complete	Within the CERCLA process there are multiple points at which a decision can be made that no further response action is required; properly documented (necessary regulatory notification or application for concurrence has occurred) these decisions constitute response complete and/or site closeout. RC is the point at which the remedy has achieved the required reduction in risk to human health and the environment (cleanup goals have been met). Response complete is followed by site closeout.
Five Year Review	Five-year reviews generally are required by CERCLA or program policy when hazardous substances remain on site above levels that permit unrestricted use and unlimited exposure. Five-year reviews provide an opportunity to evaluate the implementation and performance of a remedy to determine whether it remains protective of human health and the environment. Generally, reviews are performed 5 years after the initiation of a CERCLA response action, and are conducted every 5 years as long as future uses remain restricted. Five-year reviews for Cheatham Annex are performed by the Navy, the lead agency for the site, but EPA retains responsibility for determining the protectiveness of the remedy.



Legend

-  Active RI/FS Sites (one or more media)
-  Active AOCs
-  No Further Action RI/FS Sites and AOCs
-  CAX Boundary

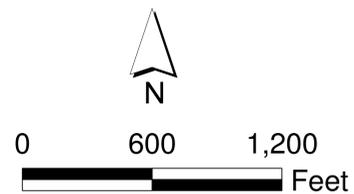


Figure 2-1
 Sites/AOC Locations and CERCLA Status
 Site Management Plan for FY 2011 to 2012
 Cheatham Annex
 Williamsburg, Virginia

CAX Site and AOC Descriptions

This section provides a summary of base-wide investigations as well as a brief history of CERCLA activities (chronology of significant CERCLA documents and milestones), a summary of the nature and extent of potential contamination, a summary of potential unacceptable risks, and the CERCLA path forward for each of the sites and active AOCs at CAX. Active site and AOC figures and schedules follow each site description. Schedules illustrate planned CERCLA implementation activities through 2012.

3.1 Base-Wide Studies

3.1.1 Initial Assessment Study

In the first phase of the Navy Assessment and Control of Installation Pollutants (NACIP) program (the precursor to the Environmental [nee Installation] Restoration Program), a team of engineers and scientists conducted an IAS at CAX in 1984 to identify and assess sites posing a potential threat to human health and/or the environment due to contamination from past operations. Twelve potentially contaminated sites were identified (Sites 1 through 12) based on information from historical records, aerial photographs, field inspections, and personnel interviews. The IAS concluded that four of the twelve sites (Sites 1, 9, 10, and 11) may pose a sufficient threat to human health or to the environment to warrant Confirmation Studies (phase two of the NACIP). However, none of the sites posed an immediate threat to human health or the environment. The results of the Confirmation Studies, which would involve actual sampling to confirm or deny the existence of the suspected contamination and to quantify the extent of any problems which may exist, would be used to evaluate the necessity to implement mitigative actions and/or clean up operations (C. C. Johnson & Associates, Inc. and CH2M HILL, 1984).

3.1.2 Confirmation Studies

Two Confirmation Studies were conducted, one in 1986 and one in 1988. The 1986 study (Step 1A - Verification, Round 1) included the collection of groundwater samples at Site 1 (Landfill Near Incinerator), soil samples at Site 9 (Transformer Storage Area), and groundwater, soil, surface water/sediment, and drum content samples at Site 11 (the Bone Yard). No samples were collected at Site 10 (Decontamination Agent Disposal Area Near First Street), and the only reference to Site 10 in the report is in Table 1-1, which has the notation "Magnetometer Survey." Site 10 is not cited again, and if a magnetometer survey was conducted at Site 10, it was not documented in the report. Based on the results of the sampling that occurred at Sites 1, 9, and 11, a repeat of the first round of sampling and analysis was recommended for Sites 1 and 11 (minus drum samples), while for Site 9, the recommendation was to collect additional background information on the site before proceeding with a second round of sampling (Dames & Moore, 1986).

The second Confirmation Study (Step 1A - Verification, Round 2) sampling occurred in late 1987. Another round of groundwater samples were collected from Site 1 and another round

of groundwater, surface water and sediment samples were collected from Site 11; all samples were collected at the same locations as with the round one sampling. A second round of soil samples was not collected at Site 11 (no explanation why was provided), even though it was recommended in the round one report. No sampling occurred at Site 9, and neither Site 9 nor Site 10 is mentioned in the report. At Site 1, two semi-volatile organic compounds (SVOCs), three metals, total phenols, and oil and grease were detected in groundwater; however, only zinc and total phenols exceeded the Virginia groundwater standards. At Site 11, two SVOCs and total phenols were detected in groundwater and surface water; however, only total phenols exceeded the Virginia water standards. In addition, two volatile organic compounds (VOCs), total phenols, and oil and grease were detected in Site 11 sediment. No constituents exceeded their respective screening criteria (Dames & Moore, 1988).

In 1991, Dames and Moore finalized an RI Interim Report, which summarized the results of the two confirmation studies, including the geophysical survey conducted at Site 10 during round one. The report recommended further RI activities for Sites 1, 10, and 11 and no further action for Site 9 (Dames and Moore, 1991).

3.1.3 Pond Study

In 2000, surface water and sediment samples were collected from 19 stations within four, man-made surface water bodies located within CAX - Jones Pond, Cheatham Pond, Youth Pond, and Penniman Lake ([Figure 3-1](#)). Based on the results, COPCs, including polycyclic biphenyls (PCBs) and metals were identified as having the potential to cause risk to human and environmental receptors and further investigation into the potential sources of these bioaccumulative chemicals and their potential effects on human health and the environment was also recommended (Baker, 2001a). In addition, based on the presence of bioaccumulative chemicals (particularly PCBs) in the sediment of Youth Pond and Penniman Lake, fishing restrictions were recommended and signs for catch-and-release were posted.

3.1.4 Community Involvement Plan Update

A CIP assists the Navy in its community outreach efforts for disseminating information about, and public participation in, the ongoing investigation and remedial processes and identifies community concerns (if any). An update to the existing WPNSTA Yorktown and CAX CIP (Baker, 2006, previously called the “Community Relations Plan”) was conducted in 2008/2009 and included mailing a survey to residences within a one mile radius of WPNSTA Yorktown and CAX (~3,141 surveys were mailed and 489 responses received) and conducting interviews with representatives of municipal and County governments, environmental groups, business organizations, service organizations, churches, etc. (seven interviews conducted). In general, the public has a favorable attitude towards CAX/the Navy and more information on environmental cleanup and RAB meetings were desired (CH2M HILL, 2009a).

3.1.5 Basewide Documents Available

Document Title /Milestone	Author/Date	AR Document Number
IAS	C.C. Johnson & Associates, Inc/ Hill, 1984	00247
Confirmation Study Round 1	Dames & Moore, 1986	00256
Confirmation Study Round 2	Dames & Moore, 1988	00259
RI Interim Report	Dames & Moore, 1991	00812
Pond Study Report	Baker, 2001a	01212
Community Involvement Plan	CH2M HILL, 2009a	00013

3.2 Site Descriptions

The following sites and AOCs had a no action or NFA decision prior to the submission of the FY2011-2012 SMP amendment:

- Site 1 – Landfill Near Incinerator
- Site 2 – Contaminated Food Disposal Area
- Site 3 – Submarine Dye Disposal Area
- Site 5 – Photographic Chemicals Disposal Area
- Site 6 – Spoiled Food Disposal Area
- Site 8 – Landfill Near Building CAD 14
- Site 10 – Decontaminated Agent Disposal Area Near First Street
- Site 12 – Disposal Site Near Water Tower
- AOC 4 – Outdated Medical Supply Disposal Area
- AOC 5 – Debris Area

As previously mentioned, descriptions of Sites 2, 3, 5, 6, 8, 10, and 12 and AOCs 4 and 5 were included in the FY2008-2009 SMP amendment, but are not included herein and will not be included in future SMP amendments. The Site 1 description was included through the FY2010-2011 update and will be removed starting with this amendment as its NFA ROD was signed in September 2009. Information on the sites/ AOCs listed above is included in [Table 2-1](#). Information regarding CAX sites that need further action or investigation is provided below.

3.2.1 Site 4—Outdated Medical Supply Disposal Area

Site Description

Site 4 is located at the headwaters of an upstream pond (upstream of Youth Pond) and between buildings CAD 11 and CAD 12 ([Figure 3-2](#)). In the late 1960's, out-of-date, unused, medical supplies, including syringes and empty intravenous bottles, and one-inch metal banding, were unloaded down a bank in this area and covered with soil. Reportedly, much of the material was removed from the site because stories were circulating about syringe needles getting stuck in deer hooves. After heavy rain events, syringes could sometimes be seen floating in the adjacent pond and in the downgradient Youth Pond. In addition,

railroad ties and concrete debris were dumped along the main drainage channel to the upstream pond. Stormwater runoff from the surrounding industrial area is deposited to Site 4 via Outfall 2 (**Figure 3-2**). A summary of relevant documents and action milestones is below.

Documents and Milestones

Document Title /Milestone	Author/Date	AR Document Number
Site Inspection Report, Site 4 and AOC 1	Baker, 2001b	01291
Trenching Letter Report, Site 1, Site 4, and AOC 2	Baker, 2002	01234
Screening Level Ecological Risk Assessment Report for Sites 4 and 9	Baker, 2005	01565

Nature and Extent of Potential Contamination

During the 2001 Site Inspection, several PAHs were detected in surface and subsurface soils. The PAH detected at the highest concentration was fluoranthene, at a concentration of 11,000 µg/kg. Several pesticides including 4,4-DDT, 4,4-dichlorodiphenyldichloroethylene (DDE), Aldrin, gamma chlordane, Endosulfan II, endrin, endrin aldehyde, and endrin ketone were detected in soil at concentrations less than 100 µg/kg. Aroclor-1260 and Aroclor-1242 were detected in soils at maximum concentrations of 1,600 L µg/kg and 2,300 L µg/kg, respectively. PAHs, PCBs, and pesticides were also detected in sediment at concentrations generally lower than those detected in soils.

Arsenic, iron, and manganese were detected across the site in surface and subsurface soil at maximum concentrations of 4.2 L mg/kg, 61,700 L µg/kg, and 302 mg/kg. Arsenic concentrations were also above screening values in sediment with a maximum detection of 12.2 L µg/kg. The Site Inspection Report recommended the extent of debris be determined and addressed through an EE/CA (Baker, 2001b). Groundwater was not evaluated during the Site Inspection.

An SI field investigation was completed at Site 4 in late 2009 to further evaluate the site media and determine if a CERCLA release has occurred. The results of this investigation will be presented in an SI report, and this section will be updated.

Potential Risks

Potential non-cancer hazards were identified for the future resident (child or adult not specified) from exposure to iron in surface soils (HI = 1.4). In addition, the cumulative HI for surface soils was 2.0. As mentioned above, iron was the only chemical with an individual HI greater than 1; however, the highest iron concentration detected at Site 4 was within base background levels. There were no other potentially unacceptable human health risks identified at the site. A Screening Ecological Risk Assessment (SERA) identified potential ecological risks associated with PAHs, pesticides, PCBs, and inorganics and recommended additional data collection to support a Step 3a Ecological Risk Assessment (ERA) (Baker, 2005).

The current SI will screen the new data for both human health and ecological risks to determine whether a release has occurred that may pose unacceptable risk, and this section will be updated.

Remedial Action(s)

Approximately 200 pounds of debris and 13 pounds of sharps (metal and plastic) found on the surface were removed by Reactives Management, Inc. in May 1998 (Baker, 2001b, included as Appendix A).

Activities Completed 2010

The draft SI report will be submitted for Team review in 2010.

CERCLA Path Forward

- Complete the SI
- EE/CA and DD or RI/FS/PP/ROD

[Schedule 3-1](#) presents the FY11-12 schedule for Site 4.

3.2.2 Site 7—Old DuPont Disposal Area

Site Description

Site 7 is located along the York River, east of Chase Road ([Figure 3-3](#)); Davis Road transects the site. During the early 1900s, it was reported that non-hazardous and/or inert wastes from the City of Penniman and the DuPont Company Penniman facility were disposed along the York River. Site 7 was identified as a potential area of concern in the IAS (C. C. Johnson & Associates, Inc. and CH2M HILL, 1984).

Information on the types and quantities of wastes received is not available; however, as the shoreline eroded, site waste (e.g., dinner ware and incinerated bottles and metal) littered the beach. In 2003, Hurricane Isabel eroded approximately 15 to 20 ft of shoreline, causing a large amount of debris to cover the beach and action was taken to minimize the impact. In February 2004, trenching with limited soil sampling adjacent to former Cabin 169 was conducted to delineate the extent of debris. Additional soil sampling was conducted in April 2004 to further delineate the extent of debris near former Cabin 170. The trenching report identified potential soil contamination adjacent to and encompassing former Cabins 169 and 170 (Baker, 2004b). In addition, a volume of ash and debris was identified in the southwestern portion of the site where erosion of the slope has occurred. This area is highly vulnerable to further erosion into the York River by surface water runoff and intense wave action. Therefore, an Action Memorandum (AM) for a Time-critical Removal Action (TCRA) was signed to prevent further erosion of the disposal area contents into the York River (Baker, 2004c). A summary of relevant documents and action milestones is below.

Documents and Milestones

Document Title /Milestone	Author/Date	AR Document Number
Trenching and Limited Investigation Report, Site 7N	Baker, 2004b	01479
AM TCRA, Site 7N – Old DuPont Disposal Area	Baker, 2004c	01592
Explosive Safety Submission – Site 7	Bhate, 2005	01865
Project Completion Report Site 1 – Landfill Near Incinerator and Site 7 – Old DuPont Disposal Area	Bhate, 2007a	02195, 02196, 02197, and 02198
Unexploded Ordnance (UXO) Remediation After Action Report, Site 7	Bhate, 2007b	AR No. Pending
Construction Completion Report: Soil Debris Removal at Site 7	Shaw, 2009a	02419

Nature and Extent of Potential Contamination

The source of potential contamination is debris disposed at Site 7. In 2004, test pits were excavated to identify the extent of the debris. Eight soil samples were collected for analysis of VOCs, SVOCs, pesticides, and PCBs and metals; no groundwater samples were collected. No significant concentrations (low levels estimated below reporting limits) of VOCs, SVOCs, pesticides, or PCBs were detected in soil. Metals including arsenic, chromium, lead, and zinc were detected in surface soil at maximum concentrations of 9.2mg/kg, 2,220 mg/kg, 6,420 mg/kg, and 2,240 mg/kg, respectively. These metals were also detected in subsurface soil at lower concentrations. In addition, one sample was collected from the ash pile within the slope along the York River and analyzed for dioxin, with a total tetrachlorodibenzo-p-dioxin of 325 nanograms/kilogram (ng/kg).

Potential Risks

No risk assessments have been performed on Site 7 media.

Remedial Action(s)

During the 2004 beach surface debris cleanup, an apparently unfired, unfused, three-inch projectile was discovered and removed from the site for proper disposal. Due to this discovery, the TCRA was put on hold while the Navy obtained an Explosives Safety Submission (ESS) Waiver. The Final ESS (Bhate, 2005) was submitted to the Partnering Team on January 4, 2006. According to the “UXO Remediation After Action Report” (Bhate, 2007b), approximately 86 pounds of munitions scrap (i.e., lifting lugs and fuse adapters) were recovered, certified safe (i.e., free from explosive hazards) and shipped to a recycle facility and smelted for reuse. No live ordnance was found and the action was completed by August 9, 2006. In November 2006, Geotubes™ were installed to stabilize the shoreline and protect it from further erosion. In addition, a presumptive removal action was initiated in December 2007 to remove visible debris from the previously identified disposal area and the former cabin site areas. Approximately 4,482 tons of debris and soil were removed (Shaw, 2009a).

Activities Completed 2010

The Draft UFP-SAP to complete an SI at Site 7 was submitted to the Partnering Team for review in January 2010, with fieldwork expected Fall 2010 and report preparation in early 2011.

CERCLA Path Forward

- SI
- NFA DD or RI/FS/PP/ROD

[Schedule 3-2](#) presents the FY11-12 schedule for Site 7.

3.2.3 Site 9—Transformer Storage Area

Site Description

Site 9 is a former transformer storage area approximately 7,000 square feet (ft²) in size and located adjacent to the northwest corner of Building CAD 16 ([Figure 3-4](#)). Between 1973 and 1980, electrical transformers, some of which contained PCBs, were reportedly stored at the site for repair or disposal. The storage area was not paved; however, it was enclosed by an earthen wall. Transformers were not stored at the site after 1980, and the area was graded and covered with gravel. A summary of the relevant document and action milestones is below.

Documents and Milestones

Document Title /Milestone	Author/Date	AR Document Number
Screening-level Ecological Risk Assessment Report for Sites 4 and 9	Baker, 2005	01565

Nature and Extent of Potential Contamination

Previous investigations identified PCBs in soil (< 1 mg/kg) and potential migration of PCBs through surface water runoff. No groundwater investigations have been conducted. Potential transport of PCBs through runoff to sediment and surface water downgradient of Site 9 (to the upstream pond by Site 4 and Youth Pond) warrant investigation.

An SI field investigation was completed at Site 9 in late 2009 to further evaluate the site media and determine if a CERCLA release has occurred. The results of this investigation will be presented in an SI report, and this section will be updated.

Potential Risks

A Draft HHRA was included in the *Draft Final No Further Response Action Planned Decision Document Site 9 – Transformer Storage Area* (Baker, 1999a), which was completed based on PCB soil data collected in 1986. No unacceptable human health risks associated with PCBs in soil were identified in the HHRA. However, due to concerns related to these results, including the unknown depths of the soil samples, this document and the HHRA was never finalized.

A SERA report indicated potential unacceptable ecological risk from exposure to PCBs. The SERA recommended that Site 9 continue to Step 3a of an ERA. On-site risks are minimal given poor habitat quality; however, potential risks posed by PCBs migrating downgradient to aquatic and terrestrial receptors warrants further consideration. The SERA also concluded that insufficient data was available at Site 9 to conduct Step 3a of an ERA (Baker, 2005).

The current SI will screen the new data for both human health and ecological risks to determine whether a release has occurred that may pose unacceptable risk, and this section will be updated.

Remedial Action(s)

No CERCLA RAs have taken place at Site 9.

Activities Completed 2010

The draft SI report will be submitted for Team review in 2010.

CERCLA Path Forward

- Complete the SI
- EE/CA and NFA DD or RI/FS/PP/ROD

[Schedule 3-3](#) presents the FY11-12 schedule for Site 9.

3.2.4 Site 11— Bone Yard

Site Description

The IAS identified Site 11 as an eight-acre area located 250 ft south of Antrim Road and the Public Works facility. Documentation in later reports, following the removal of stored material, identified the site being 2.7 acres in size (Baker, 2000) ([Figure 3-5](#)). Between 1940 and 1978, Site 11 was used to store containers of waste-oil, tar, asphalt, and other scrap materials. Oil, asphalt, gasoline, as well as scrap metal, old storage and mixing containers (e.g., fuel oil tanks), fence posts, and abandoned cars have been found at Site 11. Various discarded clamshell buckets and other surplus metal objects used in heavy construction were also located throughout the area. Approximately ten five-gallon containers labeled “paraplastic” (concrete sealant) were also present at one time. South of the entrance, numerous barrels containing petroleum products were discovered, as well as several 500-gallon square tanks containing asphalt or oil used in making asphalt. The site is wooded and slopes slightly east toward Penniman Lake. Two small drainage ditches border the site to the north and south and flow east toward Penniman Lake. A summary of relevant documents and action milestones is below.

Documents and Milestones

Document Title /Milestone	Author/Date	AR Document Number
Site Investigation For Sites 1, 10, and 11	Baker, 1994	00140C
SSP Report, Sites 1, 10, and 11	Baker, 1997	00131C
Removal Closeout Report, Site 11 – Bone Yard	Baker, 2000	01477
RI, Site 11 – Bone Yard	Baker, 2007	02171
EE/CA	CH2M HILL, 2008b	02285
Construction Completion Report, Hot Spot Removal Action at Site 11	Shaw, 2009b	AR No. Pending
TM – Consensus for NFA in Soil and GW, Site 11 – Bone Yard	CH2M HILL, 2009b	00023

Nature and Extent of Potential Contamination

The material stored at Site 11 was the source of potential contamination to soil, groundwater, sediment, and surface water. Previous investigations included full suite analysis (VOCs, SVOCs, PCBs, pesticides, explosives, and inorganics) of soil, surface water, sediment, and groundwater. Pesticides (4,4-dichlorodiphenyldichloroethane [DDD] at 37,000 µg/kg and 4,4- DDE at 1,800 µg/kg), PCBs (340 µg/kg), and PAHs (total PAHs > 10,000 µg/kg) were detected in soil in localized areas. VOCs detected in soil were limited to low concentrations estimated below reporting limits for ethylbenzene, styrene, and xylenes. Only a few VOCs, SVOCs, and pesticides were detected in groundwater at trace concentrations estimated below laboratory reporting limits. Arsenic (21.4 µg/L) was detected in groundwater above the USEPA maximum contaminant level (MCL).

VOCs and SVOCs detected in surface water were low concentrations of common laboratory contaminants (acetone, methylene chloride, toluene, and phthalates). In sediment, trichloroethylene (TCE) (5 J µg/kg) and 1,2-dichloroethene (DCE) (13 J µg/kg) were detected in one sample. PCBs (26 - 15,000 µg/kg) were detected in sediment with the highest concentrations in samples from Penniman Lake.

Potential Risks

A potential unacceptable cancer risk of 1.4×10^{-4} was calculated for the child resident based on exposure to arsenic based on reasonable maximum exposure (RME) concentrations in groundwater. Non-cancer hazards of 7.2 and 3.1 were identified for the child and adult residents from exposure to arsenic, iron, and manganese at the RME concentrations in groundwater. A cumulative HI of 2.1 was also calculated for the future child resident based on ingestion of soil at RME concentrations. This was primarily due to exposure to iron (HI=1.1) and vanadium (HI=0.26). Under the central tendency exposure (CTE) scenario, non-cancer hazards to the future adult and child residents (1.4 and 4.8, respectively) still indicated potentially acceptable risks. However, the HI (0.98) and cancer risk (3.5×10^{-6}) for future child exposure (combined dermal, ingestion, and inhalation) to surface soil was determined to be acceptable.

The SERA through Step 3a concluded that soils pose a potential unacceptable risk to terrestrial receptors primarily as a result of contamination in four areas of the site (labeled as “focus areas” on [Figure 3-5](#)). These four focus areas pose potential unacceptable risk due to elevated concentrations of total PAHs, pesticides (4,4-DDD, 4,4-DDE, 4,4-DDT, dieldrin, and endrin), and inorganics (copper, lead, mercury, selenium, thallium, and zinc) that exceed ecological screening criteria.

Remedial Action(s)

In 1987, 18 drums were removed from the site for disposal. In 1997, 59 drums, two empty storage tanks, two tar storage boxes and miscellaneous surface debris were removed for offsite disposal (Baker, 2000). Confirmation soil samples collected from the site demonstrated that contamination remained in the soil. An additional removal action was conducted at the site in 2009. In accordance with the EE/CA (CH2M HILL, 2008b), four focus areas, identified in the SERA, were excavated to a maximum depth of three feet below ground surface. Following completion of the EE/CA and the removal action workplan, the EPA expressed concern regarding RI surface soil sample location 11SS12 where lead concentrations were detected above the ecological screening criteria of 120 ppm (at 385 ppm). Therefore, a fifth focus area was added to the removal action around sample location 11SS12.

Activities Completed 2010

An NFA PP was completed in June 2010. An NFA ROD will follow and signature is anticipated before the end of FY10.

CERCLA Path Forward

- NFA PP and ROD for all media

[Schedule 3-4](#) presents the FY11-12 schedule for Site 11.

3.2.5 AOC 1—Scrap Metal Dump

Site Description

AOC 1 was identified as an AOC in 1998, following site visits by the Navy, USEPA, and VDEQ and is divided into a North Area (0.2 acres) and a South Area (0.4 acres). AOC 1 is a former debris disposal area located just west of Chapman Road within two ravines associated with unnamed tributaries to Jones Mill Pond ([Figure 3-6](#)). Wood and metal debris outcrop from the banks of the ravines, with debris being more extensive within the southern ravine. Orange staining in the unnamed tributary that receives runoff from the southern ravine has been identified. Based on an average thickness of debris of 3 ft, the total volume of debris has been estimated to be 3,000 cubic yards (cy). Two cylinders were present along the top of bank along the northern ravine. Markings were distinguishable on both of the cylinders, and included raised lettering around the neck “The Liquid Carbonic Co.” These were later determined to be empty and were removed from the site. A summary of relevant documents and action milestones is presented below.

Documents and Milestones

Document Title /Milestone	Author/Date	AR Document Number
Site Inspection Report, Site 4 and AOC 1	Baker, 2001b	01291

Nature and Extent of Potential Contamination

The 2001 Site Inspection and field investigation included a geophysical survey and collection of soil, surface water, and sediment samples; no groundwater samples were collected (Baker, 2001b). The geophysical survey concluded debris in the northern area to be about 10 to 12 ft beyond the edge of visible surface debris, and that there is no extensive buried debris in the remaining areas of the site. Total PAHs (~5,000 µg/kg) and arsenic (23.5 mg/kg) were detected in soil, with the highest concentrations in the northern area. Low estimated levels of phthalates were detected in surface water and sediment. Arsenic (7.4 mg/kg) and low estimated levels below reporting limits of ethylbenzene and xylene were also detected in sediment. An SI field investigation was completed at AOC 1 in late 2008 to further evaluate the site media and determine if a CERCLA release has occurred. The results of this investigation will be presented in an SI report, and this section will be updated.

Potential Risks

The 2001 human health risk screening evaluation indicated total potential unacceptable cancer risk from exposure to PAHs, PCBs, and arsenic and potential unacceptable non-cancer hazards from exposure to iron in soil and surface water. However, individually, chemicals contributing to potential unacceptable cancer risk are within USEPA's acceptable range, and iron (that contributed to the potential unacceptable non-cancer hazard) was within background levels. No groundwater risk exposures or ecological risk evaluations were performed on terrestrial or aquatic receptors in the drainage ways or Jones Mill Pond in 2001.

The current SI will screen the new data for both human health and ecological risks to determine whether a release has occurred that may pose unacceptable risk, and this section will be updated.

Remedial Action(s)

No CERCLA RAs have taken place at AOC 1.

Activities Completed 2010

The draft SI report will be submitted for Team review in 2010.

CERCLA Path Forward

- Complete the SI
- EE/CA and NFA DD or RI/FS/PP/ROD

[Schedule 3-5](#) presents the FY11-12 schedule for AOC 1.

3.2.6 AOC 2—Dextrose Dump

Site Description

AOC 2 was identified during site visits by the Navy, USEPA, and VDEQ in 1998. The area is located in the woods, north of Garrison Road, along the southern perimeter of CAX and contains several rows of concrete foundation piers, which at one time supported a Shipping House at the former Penniman Shell Loading Plant ([Figure 3-7](#)). Most of the Penniman facility was demolished between 1918 and 1925. Grass-covered lanes, which lead to the area, are likely locations of former rail lines that have been removed. Several glass bottles, many of which are labeled “dextrose,” are present at the site. In addition, several partially buried empty drums, unused respirator cartridges, unused military uniforms, and deer carcasses were also noted. A summary of relevant documents and action milestones is below.

Documents and Milestones

Document Title /Milestone	Author/Date	AR Document Number
Field Investigation Report, Site 1 and AOC 2	Baker, 1999b	01217
Site Inspection Report, Site 4 and AOC 1	Baker, 2001b	01291
Field Investigation Report, Site 7 and AOC 2	Baker, 2001c	01348
Trenching Letter Report, Site 1, Site 4, and AOC 2	Baker, 2002	01234

Nature and Extent of Potential Contamination

A 1998 investigation consisted of a geophysical survey and soil and groundwater sampling (Baker, 1999b). VOCs, pesticides, and metals were detected in soil. Aluminum, chromium, iron, and manganese were detected in soils at maximum concentrations of 12,500 mg/kg, 43.2 mg/kg, 45,300 mg/kg, and 240 mg/kg, respectively. Concentrations were generally higher in subsurface samples. Aluminum, arsenic, and manganese were detected in filtered direct push groundwater samples at maximum concentrations of 210 µg/L, 5.5 µg/L, and 317 µg/L. However, the investigation concluded that the low concentrations of detected constituents were not related to site activities.

A 1999 investigation included test pits and hand auger borings to define the extent of buried debris (Baker, 2001c). A large volume of buried drums and respirator filter canisters were encountered. A few of the drums contained a thin layer of tar coating or residue. The remaining drums were empty. The investigation recommended further study and possible waste removal.

In 2001, fifteen test trenches were excavated to determine the horizontal and vertical extent of the buried debris. In addition, the waste volume for the three separate waste areas (i.e., respiratory canisters and 55-gallon drums, dextrose bottles and minor debris, and military clothing) was calculated (445 cy, 670 cy, and 220 cy, respectively) (Baker, 2002).

Potential Risks

Select metals (aluminum, chromium, iron, and manganese) were detected in soils at concentrations greater than human health and/or ecological screening values and maximum aluminum, arsenic, and manganese concentrations detected in groundwater exceeded their respective tap water risk-based concentrations (RBCs). However, neither an HHRA nor ERA was conducted the 1998 or 1999 investigations. However, as part of the AOCs 1, 2, 6, 7, and 8 SI, the existing AOC 2 analytical data will be screened for both human health and ecological risks to determine whether a release has occurred that may pose unacceptable risk, and this section will be updated.

Remedial Action(s)

In 1998, Reactives Management, Inc. removed 470 bottles from AOC 2 as part of a routine housekeeping operation and selected 24 bottles for random analysis. Glucose was detected in each bottle at concentrations greater than 2,000 parts per million (ppm), indicating that the bottles contained dextrose, as was suspected (Baker, 2001b, included as Appendix A).

Activities Completed 2010

The draft SI report will be submitted for Team review in 2010, and a housekeeping debris removal effort likely will be the recommended action for the site.

CERCLA Path Forward

- Complete the SI
- Debris Removal/Removal Action
- NFA DD

[Schedule 3-6](#) presents the FY11-12 schedule for AOC 2.

3.2.7 AOC 3—CAD 11/12 Pond Bank

Site Description

AOC 3 was designated as an AOC in 1998 following site visits by Navy, USEPA, and VDEQ. It consists of an approximately 20 ft by 20 ft by 10 ft high pile of metal banding along the north bank of the upstream pond near Site 4, situated between Buildings CAD 11 and CAD 12 and west of D Street ([Figure 3-8](#)). This area, which also contains a few empty drums and pieces of charred wood, is adjacent to Site 4 - Medical Supplies Disposal Area. A summary of the relevant document and action milestones is below.

Documents and Milestones

Document Title /Milestone	Author/Date	AR Document Number
Site Inspection Report, Site 4 and AOC 1	Baker, 2001b	01291

Nature and Extent of Potential Contamination

During the 1999 field investigation of adjacent Site 4, one soil sample and one sediment sample were collected next to the metal banding pile (Baker, 2001b). Iron, chromium, and manganese were detected in surface soils at maximum concentrations of 61,700 mg/kg, 56.6 mg/kg, and 302 mg/kg, respectively. The highest concentration of a PAH in surface soil was fluoranthene, detected at a concentration of 14,000 µg/kg.

An SI field investigation was completed at AOC 3 in late 2009 to further evaluate the site media and determine if a CERCLA release has occurred. The results of this investigation will be presented in an SI report, and this section will be updated.

Potential Risks

PAHs and metals were detected in soil and sediment samples above their respective residential RBCs; however, neither an HHRA nor an ERA was conducted as part of the 1999 study. The current SI will screen the new data for both human health and ecological risks to determine whether a release has occurred that may pose unacceptable risk, and this section will be updated.

Remedial Actions

No CERCLA RAs have taken place at AOC 3.

Activities Completed 2010

The draft SI report will be submitted for Team review in 2010.

CERCLA Path Forward

- Complete the SI
- NFA DD or RI/FS/PP/ROD

[Schedule 3-7](#) presents the FY11-12 schedule for AOC 3.

3.2.8 AOC 6—Penniman AOC

Site Description

AOC 6 consists of five sub-areas related to the former Penniman Shell Loading Plant. The Penniman Shell Loading Plant was an explosives manufacturing facility operated by the DuPont de Nemours Company during World War I on what is now CAX and adjacent properties. This facility operated as a trinitrotoluene (TNT) manufacturing plant beginning in approximately 1916, and subsequently began loading artillery shells for the war effort in 1918; it was not in operation long before the November 1918 armistice ending the war was signed. Between 1918 and 1925, the facility was demolished and reverted to farmland. The Navy established CAX on a portion of this property in 1942 (Roy F. Weston, Inc., 1999a).

The five AOC 6 sub-areas ([Figure 3-9](#)) were identified through aerial photographic analysis and are as follows:

- **Ammonia Settling Pits** - This area consists of earthen ammonia settling pits that were part of a former shell loading area located on CAX. Wastewater from an ammonia finishing building was discharged through these settling pits.
- **TNT Graining House Sump** - This area consists of a concrete-lined, open top pit believed to be the sump pit for the TNT graining house in the former shell loading area.
- **TNT Catch Box Ruins** - This area consists of an earthen, brick-lined depression located immediately adjacent to the TNT graining house in the former shell loading area. This area was used to separate TNT particles from wastewater.
- **Waste Slag Material** - The Waste Slag Material subarea of AOC 6 consists of a pile of metallic slag material that was identified and sampled during the 1999 SI (Roy F. Weston, 1999b). The waste source pile was defined as 25 feet long by 10 feet long and located in the southern portion of the base.
- **1918 Drum Storage** - This area was used for the storage of wooden kegs when the shell loading area was active.

A summary of relevant documents and action milestones is below.

Documents and Milestones

Document Title /Milestone	Author/Date	AR Document Number
Site Inspection Narrative Report, Penniman Shell Loading Plant	Roy F. Weston, Inc., 1999b	00161C
Data Acquisition/Summary Report, Penniman Shell Loading Plant	Roy F. Weston, Inc., 1999a	00162C

Nature and Extent of Potential Contamination

A 1999 Site Inspection included the collection of soil, sediment, surface water, and waste samples to assess potential sources of contamination associated with the Penniman Facility and to support HRS evaluations. During this Site Inspection, a total of seven waste source samples were collected among the five areas of AOC 6 as summarized in [Table 3-1](#) (Roy F. Weston, Inc., 1999b). One waste source sample (PEN1-SO-07) of the slag itself was collected and analyzed. Visual inspection of the slag material in 1999 indicated that it was an “intact, relatively hard, rock-like material” that had a “low potential to migrate as particulates,” as documented in the SI (Roy F. Weston, Inc., 1999b).

TABLE 3-1
1999 Waste Source Sampling at AOC 6
Results Exceeding USEPA Region III RBCs for Residential Soil

Area	Sample ID	Analytical Results ¹
Ammonia Settling Pits	PEN1-SO-01	Arsenic – 6 mg/kg
TNT Graining House Sump	PEN1-SO-03 PEN1-SO-03A	2,4,6-TNT – 28 mg/kg Arsenic – 15.5 mg/kg Cadmium – 4 mg/kg Lead – 7,580 mg/kg Manganese – 886 mg/kg
TNT Catch Box Ruins	PEN1-SO-04	2,4,6-TNT – 620 mg/kg Arsenic – 11 mg/kg Lead – 813 mg/kg
Waste Slag Material	PEN1-SO-07	Antimony – 4.6 L mg/kg Arsenic – 33.4 mg/kg Chromium – 32.9 mg/kg Lead – 2,600 mg/kg Manganese – 2,070 J mg/kg
1918 Drum Storage Area	PEN1-SO-13 PEN1-SO-14	Arsenic - 4.7 mg/kg (PEN1-SO-13) Arsenic - 5.5 mg/kg (PEN1-SO-14)

Notes:

¹Analytical results lists all compounds exceeding the USEPA Region III RBCs for Residential Soil in waste samples

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

J = Analyte present. Reported value may or may not be accurate or precise.

mg/kg = milligrams per kilogram

An SI field investigation was completed at AOC 6 in late 2008 to further evaluate the site media and determine if a CERCLA release has occurred. The results of this investigation will be presented in an SI report, and this section will be updated.

Potential Risks

Select contaminants were detected in soils at concentrations greater than human health risk screening values ([Table 3-1](#)). Waste within the Ammonia Settling Pits and TNT Graining House could be considered to pose human health risks due to the concentrations of arsenic in waste source samples above residential RBCs for soil; these areas were considered potential sources for contaminant transport to Penniman Lake ([Figure 3-9](#)).

Arsenic concentrations in samples collected from the 1918 Drum Storage Area (PEN1-SO-13 and PEN1-SO-14) exceeded the RBC for residential soil ([Table 3-1](#)). As these concentrations were detected between 12 to 24 inches below ground surface (bgs) and within 200 ft of buildings currently occupied by workers, an evaluation of the health risk posed to these workers was recommended.

No additional risk evaluations, including an ERA, previously have been completed for AOC 6. However, the current SI will screen the new data for both human health and ecological risks to determine whether a release has occurred that may pose unacceptable risk, and this section will be updated.

Remedial Action(s)

No CERCLA RAs have taken place at AOC 6.

Activities Completed 2010

The draft SI report will be submitted for Team review in 2010.

CERCLA Path Forward

- Complete the SI
- NFA DD or RI/FS/PP/ROD

[Schedule 3-8](#) presents the FY11-12 schedule for AOC 6.

3.2.9 AOC 7—Drum and Can Disposal Area

Site Description

In April 2004, the Navy identified a potential area of concern north of Building 14 and Site 8 ([Figure 3-10](#)). The potential area of concern consists of several small surface debris disposal areas containing a few 55-gallon drums and numerous cans. One of the areas of note is a pit approximately 30 ft by 20 ft and 8 ft deep that contained 40 to 50 10-gallon rusted cans with labeling containing the word “tetrachloroethene.” A summary of the relevant document and action milestones is below.

Documents and Milestones

Document Title /Milestone	Author/Date	AR Document Number
Completion Letter Report for Housekeeping Actions at CAX Site 1 and AOC 7	Shaw, 2006	01903

Nature and Extent of Potential Contamination

An SI field investigation was completed at AOC 7 in late 2008 to further evaluate the site media and determine if a CERCLA release has occurred. The results of this investigation will be presented in an SI report, and this section will be updated.

Potential Risks

The SI will screen the data for both human health and ecological risks to determine whether a release has occurred that may pose unacceptable risk, and this section will be updated.

Remedial Action(s)

In June 2006, Shaw Environmental conducted a housekeeping effort and removed all of the surface debris (drums and cans) (Shaw, 2006).

Activities Completed 2010

The draft SI report will be submitted for Team review in 2010.

CERCLA Path Forward

- Complete the SI
- NFA DD or RI/FS/PP/ROD

[Schedule 3-9](#) presents the FY11-12 schedule for Site AOC 7.

3.2.10 AOC 8—Area South of Site 7

Site Description

AOC 8 (formerly referred to as Site 7) is located along the York River on a flat, sparsely vegetated depression, with a berm along the northern perimeter ([Figure 3-11](#)). Gravel and ballast rock can be seen on the ground surface. To the east of the flat area, the land drops off slightly, and in a very small area along the perimeter, buried debris (pipe, metal, and wood) can be seen cropping out from the edge of the slope and along the beach. Test pits conducted in 1999 indicate that the waste post-dates World War I and does not appear to be associated with DuPont Penniman facility waste disposal (Baker, 2001c). Therefore, this area was determined to not be Site 7 and was re-designated as AOC 8. A summary of relevant documents and action milestones is below.

Documents and Milestones

Document Title /Milestone	Author/Date	AR Document Number
Field Investigation Report, Site 7 and AOC 2	Baker, 2001c	01348

Nature and Extent of Potential Contamination

One sediment sample was collected as part of the 1999 investigation and analyzed for VOCs, SVOCs, pesticides, PCBs, nitramines/nitroaromatics, and metals (Baker, 2001c). Of the detected constituents, only Aroclor-1260 and arsenic exceeded their respective RBCs.

An SI field investigation was completed at AOC 8 in late 2008 to further evaluate the site media and determine if a CERCLA release has occurred. The results of this investigation will be presented in an SI report, and this section will be updated.

Potential Risks

The SI will screen the data for both human health and ecological risks to determine whether a release has occurred that may pose unacceptable risk, and this section will be updated.

Remedial Actions

No CERCLA RAs have taken place at AOC 8.

Activities Completed 2010

The draft SI report will be submitted for Team review in 2010.

CERCLA Path Forward

- Complete the SI
- NFA DD or RI/FS/PP/ROD

[Schedule 3-10](#) presents the FY11-12 schedule for AOC 8.

3.2.11 AOC 9—Penniman Lake

Site Description

Penniman Lake is a 48-acre surface water body located in the southeastern portion of CAX that was created in 1943 when a portion of King Creek was dammed (Figure 3-12).

Following completion of the Pond Study, catch-and-release fishing restrictions were recommended for Penniman Lake. Subsequently, fishing restriction (catch-and-release only) signs were posted in August 2000.

Documents and Milestones

Document Title /Milestone	Author/Date	AR Document Number
Pond Study Report	Baker , 2001a	01212
RI, Site 11 – Bone Yard	Baker, 2007	02171

Nature and Extent of Potential Contamination

During the 2000 Pond Study, a total of eight co-located surface water and surface sediment samples from Penniman Lake were analyzed for target compound list (TCL) organics, target analyte list (TAL) inorganics, and explosive compounds. Average concentrations of PCBs detected in Penniman Lake sediments were 0.5 mg/kg with a maximum concentration of 4.7 mg/kg. PCBs were not detected in surface water within Penniman Lake.

During the CAX Site 11 RI, surface water and sediment samples were collected in the drainages north and south of the site and within Penniman Lake and analyzed for TCL organics, TAL inorganics, and explosive compounds. These samples were collected to determine what, if any, impact Site 11 had on these areas. During upgradient/background sediment sampling associated with the RI, elevated levels of PCBs were detected immediately downgradient of Outfall 29, in the grassy area of the north drainage channel (total PCB concentration of 7.5 mg/kg) and within the northwest finger of Penniman Lake (total PCB concentration of 15 mg/kg). In addition, Aroclor-1260 was detected in one surface water sample at a concentration of 0.47 J µg/L. No other surface water samples detected PCBs.

An SI field investigation will be conducted at AOC 9 in 2011 to further evaluate the drainages into Penniman Lake to look for a PCB source and to determine if a CERCLA-related release has occurred. The results of this investigation will be presented in an SI report, and this section will be updated.

Potential Risks

During the 2000 Pond Study, the average PCB concentrations in sediments exceeded the ecological risk screening criteria, but not human health risk screening criteria. One sediment sample, located within the northwest finger of Penniman Lake, was the only location where PCBs concentrations were detected above human health screening criteria (4.7 mg/kg).

During the 2002 Site 11 RI, one sediment sample, immediately downgradient of Outfall 29, and one sediment sample within the northwest finger of Penniman Lake were identified

with concentrations exceeding human health and ecological risk screening criteria. In addition, detected Aroclor-1260 concentrations in surface water samples were consistent with the human health screening level and below the ecological risk screening level. No other risk assessments have been conducted for this study area.

The SI will screen the data for both human health and ecological risks to determine whether a CERCLA-related release has occurred that may pose unacceptable risk, and this section will be updated.

Remedial Actions

No CERCLA RAs have taken place in Penniman Lake.

Activities Completed 2010

A UFP-SAP for an SI will be prepared in 2010.

CERCLA Path Forward

- SI
- EE/CA and DD or RI/FS/PP/ROD

[Schedule 3-11](#) presents the FY11-12 schedule for Penniman Lake.

3.3 MRP Sites

Because funding for both the ERP and the MRP is managed by NAVFAC, sites classified as MRP also are included in this SMP. The only MRP site identified at CAX is the Other-than-Operational Marine Pistol and Rifle Range.

3.3.1 Other-than-Operational Marine Pistol and Rifle Range

The Other-than-Operational Marine Pistol and Rifle Range is approximately 7 acres in the northwest portion of CAX ([Figure 3-13](#)). The range was used between approximately 1939 and the 1970s, exclusively for small-caliber munitions (less than 0.5 caliber rounds). A PA was conducted for the closed range to identify possible MEC and possible sources of MC-related contamination. Consistent with expected results for a small arms site, the PA did not identify any MEC at the site. However, the PA indicated that potential MC-related contamination may exist at the site associated with bullets and bullet casings potentially present at the site. Indications of expended small caliber ammunition (bullet holes) were found in the old timber targets near the wooden backstop (Malcolm Pirnie, 2006). In 2007, an expanded site inspection (ESI) was conducted to determine whether a release with the potential to adversely affect human health or the environment had occurred at the range while it was operational. The ESI concluded, based on the conservative risk screening process and the absence of a defined release, that the closed range pose no unacceptable risk to human health or the environment; therefore, no further investigation or action was recommended for the site (CH2M HILL, 2008a). A summary of relevant documents and action milestones is below.

Documents and Milestones

Document Title/ Milestone	Author/Date	AR Document Number
Final PA, WPNSTA Yorktown	Malcolm Pirnie, 2006	01942
Expanded SI Report for the Closed MWR Skeet Range and the Closed Marine Pistol and Rifle Range	CH2M HILL, 2008a	02180

Nature and Extent of Potential Contamination

The source of potential contamination is the spent ammunition (specifically lead shot) and clay targets used at the range. A metal detector survey and sieve analysis for lead shot was conducted during the 2007 ESI. In addition, surface and subsurface soil samples were collected during the ESI and analyzed for lead and PAHs. The results indicated exceedances of human and ecological screening values and background levels existed for both zinc and arsenic in surface and subsurface soil.

Potential Risks

Although future anticipated land use is recreational, based on the conservative risk screening process potential unacceptable human health risks from exposure to soil were considered acceptable for the following reasons: The cumulative carcinogenic risk (2.0×10^{-5}) for soil exposure was below the conservative threshold of 5×10^{-5} for UU/UE, therefore potential risk is acceptable for the range and the sporadic distribution of detect concentrations did not indicate a release.

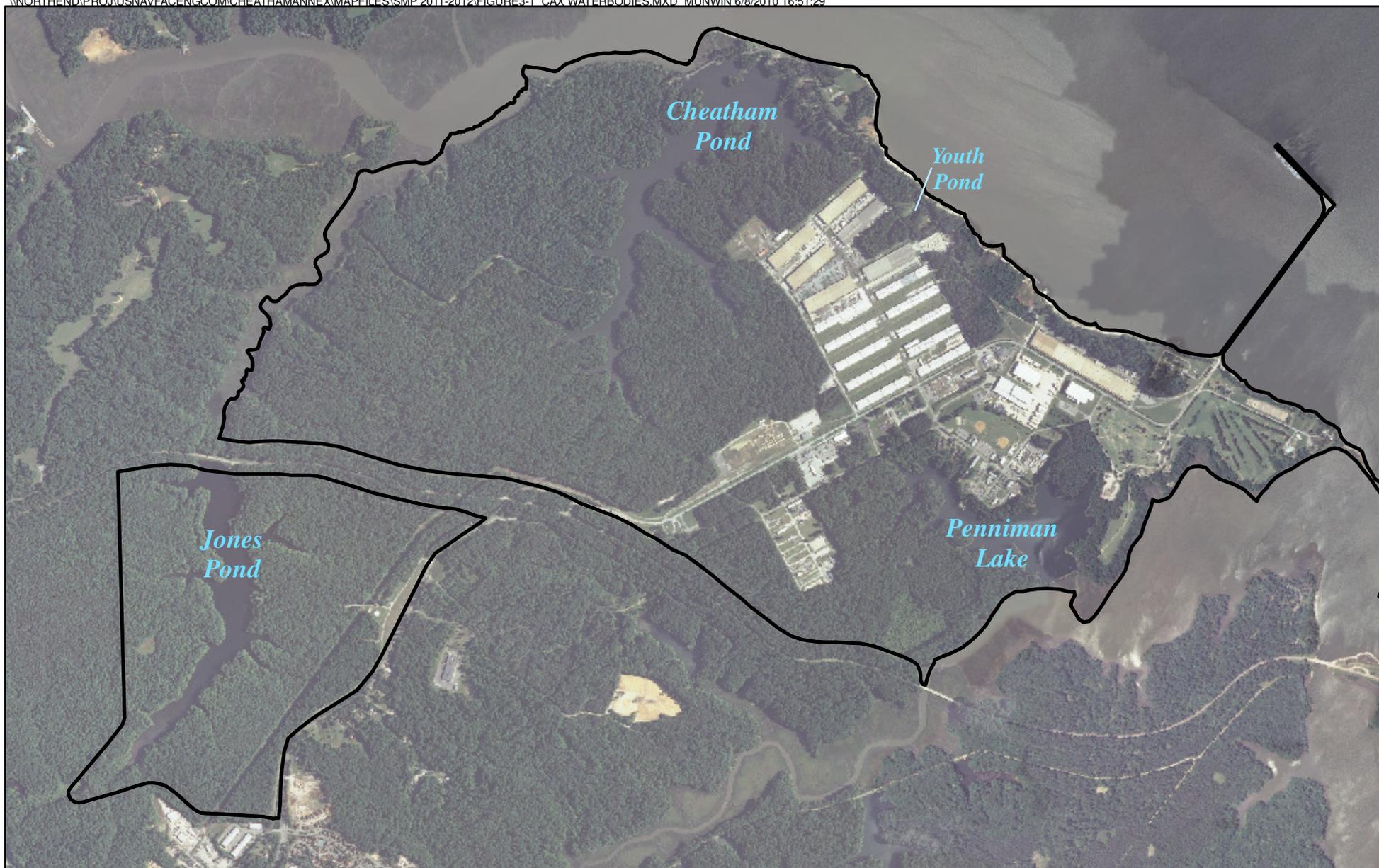
A metal detector survey did not identify any rounds or casings of lead shot which pose a potential unacceptable risk to birds. Additionally, only several occurrences of zinc (seven of 41 surface soil samples and three of 25 subsurface soil samples) exceeded the corresponding ecological screening value. However, the exceedances were for plants, which showed no signs of stress during the sampling event. Using a screening criterion for soil invertebrates, no exceedances resulted. Additionally, the mean concentration of zinc in soil is lower than the ecological screening value, which is a more realistic scenario for receptor populations.

Remedial Action(s)

No CERCLA RAs were necessary at the Other-than-Operational Marine Pistol and Rifle Range.

Activities Complete

CERCLA documentation is complete with signature of the NFA Declaration Signature page included in the ESI (CH2M HILL, 2008a). No other MRP activities are necessary or will occur.



Legend

 Cheatham Annex Boundary



0 1,000 2,000
 Feet

Figure 3-1
Location of Major CAX Surface Water Bodies
Site Management Plan for FY 2011 to 2012
Cheatham Annex
Williamsburg, Virginia



Legend

-  Study Area Boundary
-  Storm Water Line

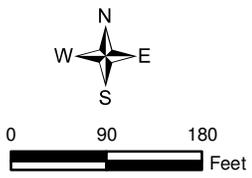


Figure 3-2
Site 4 - Outdated Medical Supply Disposal Area
Site Management Plan for FY 2011 to 2012
Cheatham Annex
Williamsburg, Virginia



Legend

 Study Area Boundary

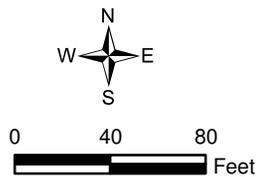


Figure 3-3
Site 7 - Old DuPont Disposal Area
Site Management Plan for FY 2011 to 2012
Cheatham Annex
Williamsburg, Virginia



Legend
 Study Area Boundary

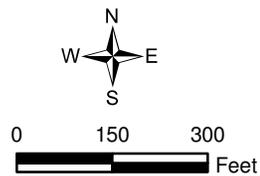


Figure 3-4
Site 9 - Transformer Storage Area
Site Management Plan for FY 2011 to 2012
Cheatham Annex
Williamsburg, Virginia



- Legend**
- Monitoring Well
 - Surface Soil Sampling Location
 - Unnamed Tributary
 - Study Area Boundary
 - Old Concrete Foundation
 - Removal Action Focus Areas

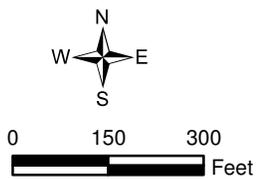


Figure 3-5
 Site 11 - Bone Yard
 Site Management Plan for FY 2011-2012
 Cheatham Annex
 Williamsburg, Virginia



Legend

 Study Area Boundary



0 150 300
Feet

Figure 3-6
AOC 1 - Scrap Metal Dump
Site Management Plan for FY 2011 to 2012
Cheatham Annex
Williamsburg, Virginia



Legend

-  Study Area Boundary
-  CAX Boundary / Fenceline

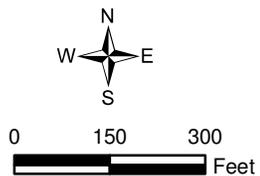


Figure 3-7
AOC 2 - Dextrose Dump
Site Management Plan for FY 2011 to 2012
Cheatham Annex
Williamsburg, Virginia



Legend

 Study Area Boundary

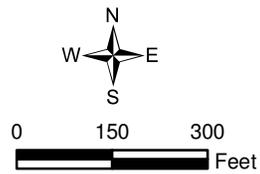


Figure 3-8
AOC 3 - CAD 11/12 Pond Bank
Site Management Plan for FY 2011 to 2012
Cheatham Annex
Williamsburg, Virginia



Legend

 Approximate Study Area Boundary



0 300 600
Feet

Figure 3-9
AOC 6 - Penniman AOC
Site Management Plan for FY 2011 to 2012
Cheatham Annex
Williamsburg, Virginia



Legend

- Approximate Location of former Drum Disposal Area
- Approximate Location of former Can Pit
- Study Area Boundary

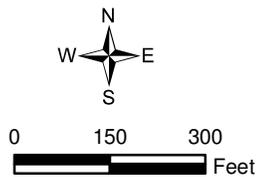


Figure 3-10
AOC 7 - Drum and Can Disposal Area
Site Management Plan for FY 2011-2012
Cheatham Annex
Williamsburg, Virginia



Legend

 Study Area Boundary

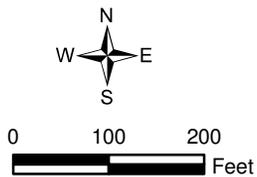


Figure 3-11
AOC 8 - Area South of Site 7
Site Management Plan for FY 2011 to 2012
Cheatham Annex
Williamsburg, Virginia



Legend

 Approximate Study Area Boundary

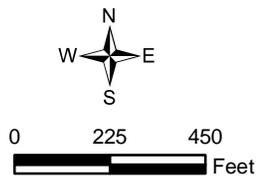


Figure 3-12
AOC 9 – Penniman Lake
Site Management Plan for FY 2011 to 2012
Cheatham Annex
Williamsburg, Virginia



Legend
 Marine Pistol and Rifle Range

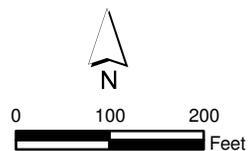


Figure 3-13
Marine Pistol and Rifle Range
Site Management Plan for FY 2011 to 2012
Cheatham Annex
Williamsburg, Virginia

Schedule 3-1
Site 4 FY11-FY12 Schedule

ID	Task Name	Duration	Start	2010				2011				2012			
				Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	
1	CAX	1949 days	Fri 7/11/08												
2	Site 4	1949 days	Fri 7/11/08												
3	Site Investigation	588 days	Fri 7/11/08												
4	CAX Site 4, 9, & AOC 3 Work Plan	148 days	Fri 7/11/08												
5	Gov't comments	15 days	Thu 1/8/09												
6	Issue Draft WP	57 days	Fri 1/23/09												
7	Regulatory Review	89 days	Mon 3/23/09												
8	Issue Draft Final WP	64 days	Mon 6/22/09												
9	Issue Final WP	51 days	Tue 8/25/09												
10	Field Investigation (and Laboratory)	116 days	Mon 10/26/09												
11	Site Investigation Report	330 days	Mon 2/22/10												
12	Preliminary SI Report	166 days	Mon 2/22/10												
13	Gov't comments	30 days	Mon 8/23/10												
14	Issue Draft SI Report	21 days	Wed 9/22/10												
15	Regulatory Review	62 days	Wed 10/13/10												
16	Issue Draft Final SI Report	21 days	Tue 12/14/10												
17	Issue Final SI Report	14 days	Tue 1/4/11												
18	EE/CA & DD (or RI/FS/PP/ROD)	168 days	Tue 1/18/11												
19	Preliminary EE/CA	45 days	Tue 1/18/11												
20	Gov't comments	15 days	Fri 3/4/11												
21	Issue Draft EE/CA	15 days	Mon 3/21/11												
22	Regulatory Review	30 days	Tue 4/5/11												
23	Issue Draft Final EE/CA	15 days	Thu 5/5/11												
24	Public Comment Period	32 days	Fri 5/20/11												
25	Issue Final EE/CA	14 days	Tue 6/21/11												
26	Implementation of EE/CA and Post-Construction Documentation	182 days	Tue 7/5/11												
27	Implementation of EE/CA & Preliminary CCR	92 days	Tue 7/5/11												
28	Gov't comments	14 days	Wed 10/5/11												
29	Issue Draft CCR	14 days	Wed 10/19/11												
30	Regulatory Review	30 days	Wed 11/2/11												
31	Issue Draft Final CCR	15 days	Fri 12/2/11												
32	Issue Final CCR	15 days	Mon 12/19/11												
33	DD	155 days	Tue 1/3/12												
34	Preliminary DD	32 days	Tue 1/3/12												
35	Gov't comments	15 days	Mon 2/6/12												
36	Issue Draft DD	15 days	Tue 2/21/12												
37	Regulatory Review	62 days	Wed 3/7/12												
38	Issue Draft Final DD	15 days	Tue 5/8/12												
39	Issue Final DD	14 days	Wed 5/23/12												

Task		Milestone		External Tasks	
Split		Summary		External Milestone	
Progress		Project Summary		Deadline	

Schedule 3-1
Site 4 FY11-FY12 Schedule

ID	Task Name	Duration	Start	2010				2011				2012		
				Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3
40	RI & FS/PP/ROD (or EE/CA & DD)	288 days	Tue 1/18/11											
41	Preliminary RI Work Plan	60 days	Tue 1/18/11											
42	Gov't comments	30 days	Mon 3/21/11											
43	Issue Draft RI Work Plan	14 days	Wed 4/20/11											
44	Regulatory Review	62 days	Wed 5/4/11											
45	Issue Draft Final RI Work Plan	15 days	Tue 7/5/11											
46	Issue Final RI Work Plan	15 days	Wed 7/20/11											
47	Field Investigation (and Laboratory)	90 days	Thu 8/4/11											
48	RI Report	209 days	Wed 11/2/11											
49	Preliminary RI	62 days	Wed 11/2/11											
50	Gov't comments	30 days	Tue 1/3/12											
51	Issue draft RI report	21 days	Thu 2/2/12											
52	Regulatory Review	61 days	Thu 2/23/12											
53	Issue draft final RI report	21 days	Tue 4/24/12											
54	Issue final RI report	14 days	Tue 5/15/12											
55	FS	182 days	Tue 5/29/12											
56	Preliminary FS	45 days	Tue 5/29/12											
57	Gov't comments	32 days	Fri 7/13/12											
58	Issue draft FS	14 days	Tue 8/14/12											
59	Regulatory Review	60 days	Tue 8/28/12											
60	Issue draft final FS	15 days	Mon 10/29/12											
61	Issue final FS	14 days	Tue 11/13/12											
62	PP	212 days	Tue 11/27/12											
63	Preliminary PP	30 days	Tue 11/27/12											
64	Gov't comments	30 days	Thu 12/27/12											
65	Issue Draft PP	30 days	Mon 1/28/13											
66	Regulatory/Legal Review	62 days	Wed 2/27/13											
67	Draft Final PP	14 days	Tue 4/30/13											
68	Public Comment Period	30 days	Tue 5/14/13											
69	Issue Final PP	14 days	Thu 6/13/13											
70	ROD	138 days	Thu 6/27/13											
71	Preliminary ROD	30 days	Thu 6/27/13											
72	Gov't comments	15 days	Mon 7/29/13											
73	Issue Draft ROD	15 days	Tue 8/13/13											
74	Regulatory/Legal Review	62 days	Wed 8/28/13											
75	Issue ROD for Signature	14 days	Tue 10/29/13											

Task		Milestone		External Tasks	
Split		Summary		External Milestone	
Progress		Project Summary		Deadline	

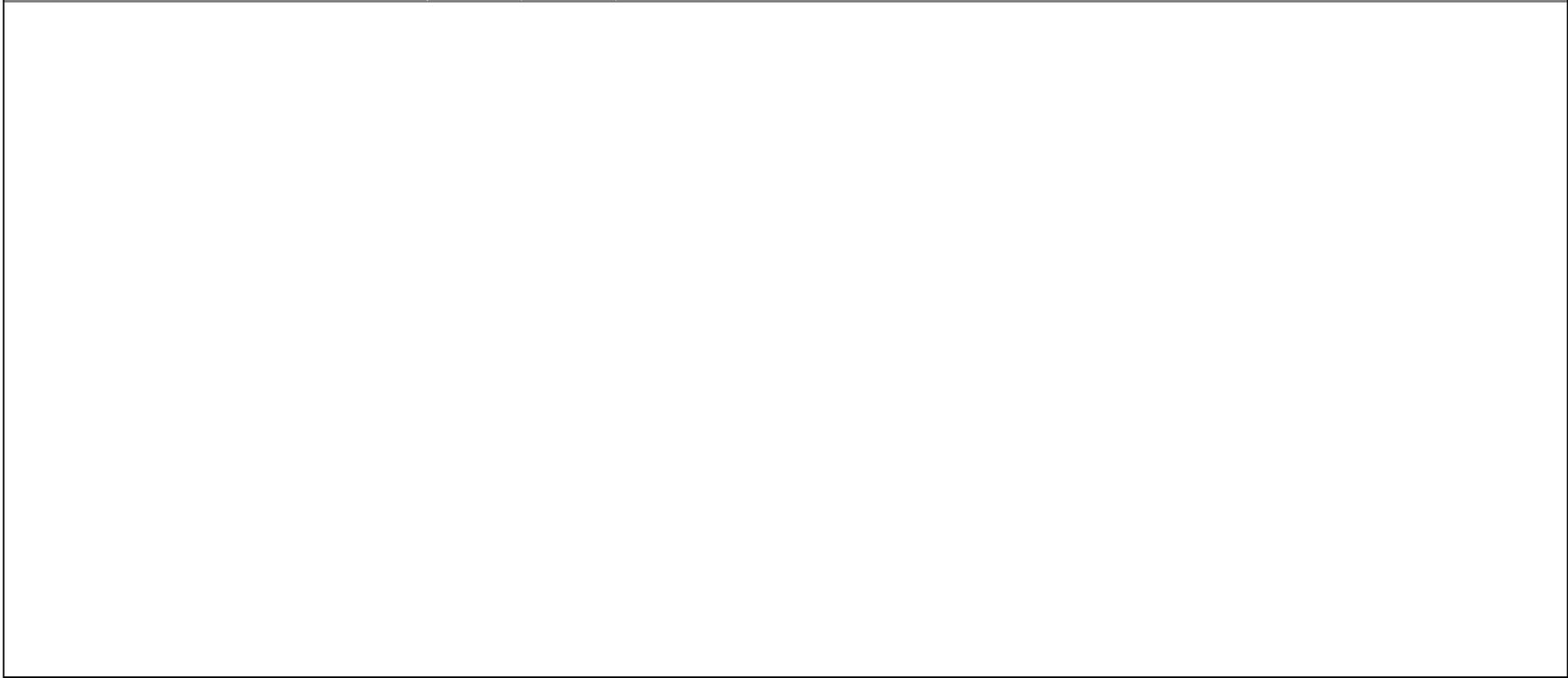
Schedule 3-2
Site 7 FY11-FY12 Schedule

ID	Task Name	Duration	Start	Finish	2010				2011				2012			
					Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	
1	CAX	2273 days	Mon 11/12/07	Wed 3/5/14												
2	Site 7	2273 days	Mon 11/12/07	Wed 3/5/14												
3	Removal Action	473 days	Mon 11/12/07	Thu 3/12/09												
4	RA WP	166 days	Mon 11/12/07	Fri 5/9/08												
5	Removal Action	105 days	Thu 2/21/08	Wed 6/4/08												
6	CCR	281 days	Thu 6/5/08	Thu 3/12/09												
7	Site Investigation	619 days	Fri 1/2/09	Mon 9/13/10												
8	CAX Site 7 WP	257 days	Fri 1/2/09	Tue 9/15/09												
9	Gov't Comments	78 days	Wed 9/16/09	Thu 12/3/09												
10	Issue Draft WP	54 days	Fri 12/4/09	Tue 1/26/10												
11	Regulatory Review	108 days	Wed 1/27/10	Fri 5/14/10												
12	Issue Draft Final WP	15 days	Mon 5/17/10	Mon 5/31/10												
13	Issue Final WP	15 days	Tue 6/1/10	Tue 6/15/10												
14	Field Investigation (and Laboratory)	90 days	Wed 6/16/10	Mon 9/13/10												
15	Site Investigation Report	210 days	Tue 9/14/10	Mon 4/11/11												
16	Preliminary SI Report	60 days	Tue 9/14/10	Fri 11/12/10												
17	Gov't Comments	32 days	Mon 11/15/10	Thu 12/16/10												
18	Issue Draft SI Report	21 days	Fri 12/17/10	Thu 1/6/11												
19	Regulatory Review	60 days	Fri 1/7/11	Mon 3/7/11												
20	Issue Draft Final SI Report	21 days	Tue 3/8/11	Mon 3/28/11												
21	Issue Final SI Report	14 days	Tue 3/29/11	Mon 4/11/11												
22	DD Signature Page for SI (or RI/FS/PP/ROD)	10 days	Tue 4/12/11	Thu 4/21/11												
23	Issue DD for Signature	10 days	Tue 4/12/11	Thu 4/21/11												
24	RI & FS/PP/ROD (if needed)	284 days	Tue 4/12/11	Fri 1/20/12												
25	Preliminary RI Work Plan	60 days	Tue 4/12/11	Fri 6/10/11												
26	Gov't Comments	30 days	Mon 6/13/11	Tue 7/12/11												
27	Issue Draft RI Work Plan	14 days	Wed 7/13/11	Tue 7/26/11												
28	Regulatory Review	62 days	Wed 7/27/11	Mon 9/26/11												
29	Issue Draft Final RI Work Plan	14 days	Tue 9/27/11	Mon 10/10/11												
30	Issue Final RI Work Plan	14 days	Tue 10/11/11	Mon 10/24/11												
31	Field Investigation (and Laboratory)	88 days	Tue 10/25/11	Fri 1/20/12												
32	RI Report	227 days	Mon 1/23/12	Wed 9/5/12												
33	Preliminary RI	60 days	Mon 1/23/12	Thu 3/22/12												
34	Gov't Comments	32 days	Fri 3/23/12	Mon 4/23/12												
35	Issue Draft RI Report	21 days	Tue 4/24/12	Mon 5/14/12												
36	Regulatory Review	60 days	Tue 5/15/12	Fri 7/13/12												
37	Issue Draft Final RI Report	22 days	Mon 7/16/12	Mon 8/6/12												
38	Issue Final RI Report	30 days	Tue 8/7/12	Wed 9/5/12												
39	FS	180 days	Thu 9/6/12	Mon 3/4/13												
40	Preliminary FS	47 days	Thu 9/6/12	Mon 10/22/12												
41	Gov't Comments	30 days	Tue 10/23/12	Wed 11/21/12												
42	Issue Draft FS	14 days	Thu 11/22/12	Wed 12/5/12												
43	Regulatory Review	61 days	Thu 12/6/12	Mon 2/4/13												
44	Issue Draft Final FS	14 days	Tue 2/5/13	Mon 2/18/13												
45	Issue Final FS	14 days	Tue 2/19/13	Mon 3/4/13												

Task Progress Summary External Tasks Deadline Split Milestone Project Summary External Milestone

Schedule 3-2
Site 7 FY11-FY12 Schedule

ID	Task Name	Duration	Start	Finish	2010				2011				2012			
					Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	
46	PP	213 days	Tue 3/5/13	Thu 10/3/13												
47	Preliminary PP	30 days	Tue 3/5/13	Wed 4/3/13												
48	Navy Review	30 days	Thu 4/4/13	Fri 5/3/13												
49	Issue Draft PP	31 days	Mon 5/6/13	Wed 6/5/13												
50	Regulatory/Legal Review	61 days	Thu 6/6/13	Mon 8/5/13												
51	Draft Final PP	15 days	Tue 8/6/13	Tue 8/20/13												
52	Public Comment Period	30 days	Wed 8/21/13	Thu 9/19/13												
53	Issue Final PP	14 days	Fri 9/20/13	Thu 10/3/13												
54	ROD	135 days	Fri 10/4/13	Wed 3/5/14												
55	Preliminary ROD	32 days	Fri 10/4/13	Mon 11/4/13												
56	Navy Review	15 days	Tue 11/5/13	Tue 11/19/13												
57	Issue Draft ROD	14 days	Wed 11/20/13	Tue 12/3/13												
58	Regulatory/Legal Review	60 days	Wed 12/4/13	Thu 2/13/14												
59	Issue ROD for Signature	14 days	Fri 2/14/14	Wed 3/5/14												



Task  Progress  Summary  External Tasks  Deadline 
 Split  Milestone  Project Summary  External Milestone 

Schedule 3-3
Site 9 FY11-FY12 Schedule

ID	Task Name	Duration	Start	2010				2011				2012			
				Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	
1	CAX	1949 days	Fri 7/11/08												
2	Site 9	1949 days	Fri 7/11/08												
3	Site Investigation	588 days	Fri 7/11/08												
4	CAX Site 4, 9, & AOC 3 Work Plan	148 days	Fri 7/11/08												
5	Gov't comments	15 days	Thu 1/8/09												
6	Issue Draft WP	57 days	Fri 1/23/09												
7	Regulatory Review	89 days	Mon 3/23/09												
8	Issue Draft Final WP	64 days	Mon 6/22/09												
9	Issue Final WP	51 days	Tue 8/25/09												
10	Field Investigation (and Laboratory)	116 days	Mon 10/26/09												
11	Site Investigation Report	330 days	Mon 2/22/10												
12	Preliminary SI Report	166 days	Mon 2/22/10												
13	Gov't comments	30 days	Mon 8/23/10												
14	Issue Draft SI Report	21 days	Wed 9/22/10												
15	Regulatory Review	62 days	Wed 10/13/10												
16	Issue Draft Final SI Report	21 days	Tue 12/14/10												
17	Issue Final SI Report	14 days	Tue 1/4/11												
18	EE/CA & DD (or RI/FS/PP/ROD)	168 days	Tue 1/18/11												
19	Preliminary EE/CA	45 days	Tue 1/18/11												
20	Gov't comments	15 days	Fri 3/4/11												
21	Issue Draft EE/CA	15 days	Mon 3/21/11												
22	Regulatory Review	30 days	Tue 4/5/11												
23	Issue Draft Final EE/CA	15 days	Thu 5/5/11												
24	Public Comment Period	32 days	Fri 5/20/11												
25	Issue Final EE/CA	14 days	Tue 6/21/11												
26	Implementation of EE/CA and Post-Construction Documentation	182 days	Tue 7/5/11												
27	Implementation of EE/CA & Preliminary CCR	92 days	Tue 7/5/11												
28	Gov't comments	14 days	Wed 10/5/11												
29	Issue Draft CCR	14 days	Wed 10/19/11												
30	Regulatory Review	30 days	Wed 11/2/11												
31	Issue Draft Final CCR	15 days	Fri 12/2/11												
32	Issue Final CCR	15 days	Mon 12/19/11												
33	DD	155 days	Tue 1/3/12												
34	Preliminary DD	32 days	Tue 1/3/12												
35	Gov't comments	15 days	Mon 2/6/12												
36	Issue Draft DD	15 days	Tue 2/21/12												
37	Regulatory Review	62 days	Wed 3/7/12												
38	Issue Draft Final DD	15 days	Tue 5/8/12												
39	Issue Final DD	14 days	Wed 5/23/12												

Task		Milestone		External Tasks	
Split		Summary		External Milestone	
Progress		Project Summary		Deadline	

Schedule 3-3
Site 9 FY11-FY12 Schedule

ID	Task Name	Duration	Start	2010				2011				2012		
				Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3
40	RI & FS/PP/ROD (or EE/CA & DD)	288 days	Tue 1/18/11											
41	Preliminary RI Work Plan	60 days	Tue 1/18/11											
42	Gov't comments	30 days	Mon 3/21/11											
43	Issue Draft RI Work Plan	14 days	Wed 4/20/11											
44	Regulatory Review	62 days	Wed 5/4/11											
45	Issue Draft Final RI Work Plan	15 days	Tue 7/5/11											
46	Issue Final RI Work Plan	15 days	Wed 7/20/11											
47	Field Investigation (and Laboratory)	90 days	Thu 8/4/11											
48	RI Report	209 days	Wed 11/2/11											
49	Preliminary RI	62 days	Wed 11/2/11											
50	Gov't comments	30 days	Tue 1/3/12											
51	Issue draft RI report	21 days	Thu 2/2/12											
52	Regulatory Review	61 days	Thu 2/23/12											
53	Issue draft final RI report	21 days	Tue 4/24/12											
54	Issue final RI report	14 days	Tue 5/15/12											
55	FS	182 days	Tue 5/29/12											
56	Preliminary FS	45 days	Tue 5/29/12											
57	Gov't comments	32 days	Fri 7/13/12											
58	Issue draft FS	14 days	Tue 8/14/12											
59	Regulatory Review	60 days	Tue 8/28/12											
60	Issue draft final FS	15 days	Mon 10/29/12											
61	Issue final FS	14 days	Tue 11/13/12											
62	PP	212 days	Tue 11/27/12											
63	Preliminary PP	30 days	Tue 11/27/12											
64	Gov't comments	30 days	Thu 12/27/12											
65	Issue Draft PP	30 days	Mon 1/28/13											
66	Regulatory/Legal Review	62 days	Wed 2/27/13											
67	Draft Final PP	14 days	Tue 4/30/13											
68	Public Comment Period	30 days	Tue 5/14/13											
69	Issue Final PP	14 days	Thu 6/13/13											
70	ROD	138 days	Thu 6/27/13											
71	Preliminary ROD	30 days	Thu 6/27/13											
72	Gov't comments	15 days	Mon 7/29/13											
73	Issue Draft ROD	15 days	Tue 8/13/13											
74	Regulatory/Legal Review	62 days	Wed 8/28/13											
75	Issue ROD for Signature	14 days	Tue 10/29/13											

Task		Milestone		External Tasks	
Split		Summary		External Milestone	
Progress		Project Summary		Deadline	

Schedule 3-4
Site 11 FY11-FY12 Schedule

ID	Task Name	Duration	Start	Finish	2010				2011				2012			
					Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	
1	CAX	1034 days?	Fri 2/15/08	Wed 12/15/10												
2	Site 11	1034 days?	Fri 2/15/08	Wed 12/15/10												
3	EE/CA	284 days	Fri 2/15/08	Mon 11/24/08												
4	Preliminary EE/CA	32 days	Fri 2/15/08	Mon 3/17/08												
5	Gov't Comments	14 days	Tue 3/18/08	Mon 3/31/08												
6	Issue Draft EE/CA	9 days	Tue 4/1/08	Wed 4/9/08												
7	Regulatory Review	64 days	Thu 4/10/08	Thu 6/12/08												
8	Issue Draft Final EE/CA	117 days	Fri 6/13/08	Tue 10/7/08												
9	Public Comment Period	30 days	Thu 10/16/08	Fri 11/14/08												
10	Issue Final EE/CA	8 days	Mon 11/17/08	Mon 11/24/08												
11	Implementation of EE/CA and Post-Construction Doc	730 days?	Mon 12/15/08	Wed 12/15/10												
12	Removal Action	131 days	Mon 12/15/08	Fri 4/24/09												
13	Removal Action Work Plan	59 days	Mon 12/15/08	Wed 2/11/09												
14	Removal Action	72 days	Thu 2/12/09	Fri 4/24/09												
15	Issue Draft CCR	85 days	Mon 4/27/09	Mon 7/20/09												
16	Gov't Comments	14 days	Tue 7/21/09	Mon 8/3/09												
17	Issue Draft Final CCR	16 days	Tue 8/4/09	Wed 8/19/09												
18	Regulatory Review	467 days?	Thu 8/20/09	Tue 11/30/10												
19	Issue Final CCR	15 days	Wed 12/1/10	Wed 12/15/10												
20	TM for Post-Construction Risk Evaluation for all Medi	102 days	Mon 6/15/09	Thu 9/24/09												
21	Preliminary TM	43 days	Mon 6/15/09	Mon 7/27/09												
22	Gov't Comments	4 days	Tue 7/28/09	Fri 7/31/09												
23	Issue Draft TM	4 days	Mon 8/3/09	Thu 8/6/09												
24	Regulatory Review	40 days	Fri 8/7/09	Tue 9/15/09												
25	Issue Final TM	9 days	Wed 9/16/09	Thu 9/24/09												
26	PP	252 days	Fri 9/25/09	Fri 6/4/10												
27	Preliminary PP	61 days	Fri 9/25/09	Wed 11/25/09												
28	Gov't Comments	40 days	Thu 11/26/09	Mon 1/4/10												
29	Issue Draft PP	11 days	Tue 1/5/10	Fri 1/15/10												
30	Regulatory / Legal Review	47 days	Mon 1/18/10	Fri 3/5/10												
31	Draft Final PP	30 days	Mon 3/8/10	Tue 4/6/10												
32	Public Comment Period	45 days	Sun 4/18/10	Tue 6/1/10												
33	Issue Final PP	3 days	Wed 6/2/10	Fri 6/4/10												
34	ROD	161 days	Wed 3/24/10	Tue 8/31/10												
35	Preliminary ROD	30 days	Wed 3/24/10	Thu 4/22/10												
36	Gov't Comments	29 days	Fri 4/23/10	Fri 5/21/10												
37	Issue Draft ROD	12 days	Mon 5/24/10	Fri 6/4/10												
38	Regulatory / Legal Review	60 days	Sat 6/5/10	Tue 8/3/10												
39	Draft Final ROD	14 days	Wed 8/4/10	Tue 8/17/10												
40	Issue ROD for Signature	14 days	Wed 8/18/10	Tue 8/31/10												

Task Progress Summary External Tasks Deadline

 Split Milestone Project Summary External Milestone

Schedule 3-5
AOC 1 FY11-FY12 Schedule

ID	Task Name	Duration	Start	Finish	2010				2011				2012			
					Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	
1	CAX	2274 days	Tue 7/10/07	Tue 11/19/13	[Summary bar]											
2	AOC 1	2274 days	Tue 7/10/07	Tue 11/19/13	[Summary bar]											
3	Site Investigation	533 days	Tue 7/10/07	Wed 2/11/09	[Summary bar]											
4	Various AOC Work Plan	45 days	Tue 7/10/07	Mon 9/10/07	[Task bar]											
5	Gov't comments	110 days	Tue 9/11/07	Wed 1/30/08	[Task bar]											
6	Issue Draft WP	29 days	Thu 1/31/08	Thu 2/28/08	[Task bar]											
7	Regulatory Review	169 days	Fri 2/29/08	Fri 8/15/08	[Task bar]											
8	Issue Draft Final WP	24 days	Mon 8/18/08	Wed 9/10/08	[Task bar]											
9	Issue Final WP	34 days	Thu 9/11/08	Tue 10/14/08	[Task bar]											
10	Field Investigation (and Laboratory)	120 days	Wed 10/15/08	Wed 2/11/09	[Task bar]											
11	Site Investigation Report	697 days	Thu 2/12/09	Mon 1/10/11	[Summary bar]											
12	Preliminary SI Report	554 days	Thu 2/12/09	Fri 8/20/10	[Task bar]											
13	Gov't comments	30 days	Mon 8/23/10	Tue 9/21/10	[Task bar]											
14	Issue Draft SI Report	14 days	Wed 9/22/10	Tue 10/5/10	[Task bar]											
15	Regulatory Review	62 days	Wed 10/6/10	Mon 12/6/10	[Task bar]											
16	Issue Draft Final SI Report	21 days	Tue 12/7/10	Mon 12/27/10	[Task bar]											
17	Issue Final SI Report	14 days	Tue 12/28/10	Mon 1/10/11	[Task bar]											
18	EE/CA and/or DD (or RI/FS/PP/ROD)	193 days	Tue 1/11/11	Fri 7/22/11	[Summary bar]											
19	Preliminary EE/CA	45 days	Tue 1/11/11	Thu 2/24/11	[Task bar]											
20	Gov't comments	14 days	Fri 2/25/11	Thu 3/10/11	[Task bar]											
21	Issue Draft EE/CA	14 days	Fri 3/11/11	Thu 3/24/11	[Task bar]											
22	Regulatory Review	60 days	Fri 3/25/11	Mon 5/23/11	[Task bar]											
23	Issue Draft Final EE/CA	15 days	Tue 5/24/11	Tue 6/7/11	[Task bar]											
24	Public Comment Period	30 days	Wed 6/8/11	Thu 7/7/11	[Task bar]											
25	Issue Final EE/CA	15 days	Fri 7/8/11	Fri 7/22/11	[Task bar]											
26	Implementation of EE/CA and Post-Construction Documentation	179 days	Mon 7/25/11	Thu 1/19/12	[Summary bar]											
27	Implementation of EE/CA & Preliminary CCR	89 days	Mon 7/25/11	Fri 10/21/11	[Task bar]											
28	Gov't comments	15 days	Mon 10/24/11	Mon 11/7/11	[Task bar]											
29	Issue Draft CCR	14 days	Tue 11/8/11	Mon 11/21/11	[Task bar]											
30	Regulatory Review	30 days	Tue 11/22/11	Wed 12/21/11	[Task bar]											
31	Issue Draft Final CCR	15 days	Thu 12/22/11	Thu 1/5/12	[Task bar]											
32	Issue Final CCR	14 days	Fri 1/6/12	Thu 1/19/12	[Task bar]											
33	DD	151 days	Fri 1/20/12	Mon 6/18/12	[Summary bar]											
34	Preliminary DD	32 days	Fri 1/20/12	Mon 2/20/12	[Task bar]											
35	Gov't comments	14 days	Tue 2/21/12	Mon 3/5/12	[Task bar]											
36	Issue Draft DD	14 days	Tue 3/6/12	Mon 3/19/12	[Task bar]											
37	Regulatory Review	60 days	Tue 3/20/12	Fri 5/18/12	[Task bar]											
38	Issue Draft Final DD	15 days	Mon 5/21/12	Mon 6/4/12	[Task bar]											
39	Issue Final DD	14 days	Tue 6/5/12	Mon 6/18/12	[Task bar]											

Task Progress Summary External Tasks Deadline

Split Milestone Project Summary External Milestone

Schedule 3-5
AOC 1 FY11-FY12 Schedule

ID	Task Name	Duration	Start	Finish	2010				2011				2012		
					Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3
40	RI & FS/PP/ROD (or Housekeeping Removal Action & DD)	287 days	Tue 1/11/11	Mon 10/24/11					[Summary bar]						
41	Preliminary RI Work Plan	60 days	Tue 1/11/11	Fri 3/11/11					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
42	Gov't comments	30 days	Mon 3/14/11	Tue 4/12/11					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
43	Issue Draft RI Work Plan	14 days	Wed 4/13/11	Tue 4/26/11					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
44	Regulatory Review	62 days	Wed 4/27/11	Mon 6/27/11					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
45	Issue Draft Final RI Work Plan	14 days	Tue 6/28/11	Mon 7/11/11					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
46	Issue Final RI Work Plan	14 days	Tue 7/12/11	Mon 7/25/11					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
47	Field Investigation (and Laboratory)	91 days	Tue 7/26/11	Mon 10/24/11					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
48	RI Report	210 days	Tue 10/25/11	Mon 5/21/12					[Summary bar]						
49	Preliminary RI	60 days	Tue 10/25/11	Fri 12/23/11					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
50	Gov't comments	30 days	Mon 12/26/11	Tue 1/24/12					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
51	Issue draft RI report	21 days	Wed 1/25/12	Tue 2/14/12					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
52	Regulatory Review	62 days	Wed 2/15/12	Mon 4/16/12					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
53	Issue draft final RI report	21 days	Tue 4/17/12	Mon 5/7/12					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
54	Issue final RI report	14 days	Tue 5/8/12	Mon 5/21/12					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
55	FS	182 days	Tue 5/22/12	Mon 11/19/12					[Summary bar]						
56	Preliminary FS	45 days	Tue 5/22/12	Thu 7/5/12					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
57	Gov't comments	32 days	Fri 7/6/12	Mon 8/6/12					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
58	Issue draft FS	14 days	Tue 8/7/12	Mon 8/20/12					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
59	Regulatory Review	60 days	Tue 8/21/12	Fri 10/19/12					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
60	Issue draft final FS	15 days	Mon 10/22/12	Mon 11/5/12					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
61	Issue final FS	14 days	Tue 11/6/12	Mon 11/19/12					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
62	PP	227 days	Tue 11/20/12	Thu 7/4/13					[Summary bar]						
63	Preliminary PP	30 days	Tue 11/20/12	Wed 12/19/12					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
64	Gov't comments	30 days	Thu 12/20/12	Fri 1/18/13					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
65	Issue Draft PP	30 days	Mon 1/21/13	Tue 2/19/13					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
66	Regulatory/Legal Review	62 days	Wed 2/20/13	Mon 4/22/13					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
67	Draft Final PP	14 days	Tue 4/23/13	Mon 5/6/13					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
68	Public Comment Period	45 days	Tue 5/7/13	Thu 6/20/13					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
69	Issue Final PP	14 days	Fri 6/21/13	Thu 7/4/13					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
70	ROD	138 days	Fri 7/5/13	Tue 11/19/13					[Summary bar]						
71	Preliminary ROD	32 days	Fri 7/5/13	Mon 8/5/13					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
72	Gov't comments	15 days	Tue 8/6/13	Tue 8/20/13					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
73	Issue Draft ROD	14 days	Wed 8/21/13	Tue 9/3/13					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
74	Regulatory/Legal Review	62 days	Wed 9/4/13	Mon 11/4/13					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]
75	Issue ROD for Signature	15 days	Tue 11/5/13	Tue 11/19/13					[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]	[Task bar]

Task Progress Summary External Tasks Deadline Split Milestone Project Summary External Milestone

Schedule 3-6
AOC 2 FY11-FY12 Schedule

ID	Task Name	Duration	Start	Finish	2010				2011				2012			
					Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	
1	CAX	2274 days	Tue 7/10/07	Tue 11/19/13												
2	AOC 2	2274 days	Tue 7/10/07	Tue 11/19/13												
3	Site Investigation	533 days	Tue 7/10/07	Wed 2/11/09												
4	Various AOC Work Plan	45 days	Tue 7/10/07	Mon 9/10/07												
5	Gov't comments	110 days	Tue 9/11/07	Wed 1/30/08												
6	Issue Draft WP	29 days	Thu 1/31/08	Thu 2/28/08												
7	Regulatory Review	169 days	Fri 2/29/08	Fri 8/15/08												
8	Issue Draft Final WP	24 days	Mon 8/18/08	Wed 9/10/08												
9	Issue Final WP	34 days	Thu 9/11/08	Tue 10/14/08												
10	Field Investigation (and Laboratory)	120 days	Wed 10/15/08	Wed 2/11/09												
11	Site Investigation Report	697 days	Thu 2/12/09	Mon 1/10/11												
12	Preliminary SI Report	554 days	Thu 2/12/09	Fri 8/20/10												
13	Gov't comments	30 days	Mon 8/23/10	Tue 9/21/10												
14	Issue Draft SI Report	14 days	Wed 9/22/10	Tue 10/5/10												
15	Regulatory Review	62 days	Wed 10/6/10	Mon 12/6/10												
16	Issue Draft Final SI Report	21 days	Tue 12/7/10	Mon 12/27/10												
17	Issue Final SI Report	14 days	Tue 12/28/10	Mon 1/10/11												
18	Implementation of Housekeeping Removal Action and Post-Construction Documentation (or RI/FS/PP/ROD)	182 days	Tue 1/11/11	Mon 7/11/11												
19	Implementation of Removal Action & Preliminary CCR	91 days	Tue 1/11/11	Mon 4/11/11												
20	Gov't comments	15 days	Tue 4/12/11	Tue 4/26/11												
21	Issue Draft CCR	14 days	Wed 4/27/11	Tue 5/10/11												
22	Regulatory Review	30 days	Wed 5/11/11	Thu 6/9/11												
23	Issue Draft Final CCR	15 days	Fri 6/10/11	Fri 6/24/11												
24	Issue Final CCR	15 days	Mon 6/27/11	Mon 7/11/11												
25	DD	147 days	Tue 7/12/11	Mon 12/5/11												
26	Preliminary DD	30 days	Tue 7/12/11	Wed 8/10/11												
27	Gov't comments	14 days	Thu 8/11/11	Wed 8/24/11												
28	Issue Draft DD	14 days	Thu 8/25/11	Wed 9/7/11												
29	Regulatory Review	61 days	Thu 9/8/11	Mon 11/7/11												
30	Issue Draft Final DD	14 days	Tue 11/8/11	Mon 11/21/11												
31	Issue Final DD	14 days	Tue 11/22/11	Mon 12/5/11												

Task		Milestone		External Tasks	
Split		Summary		External Milestone	
Progress		Project Summary		Deadline	

Schedule 3-6
AOC 2 FY11-FY12 Schedule

ID	Task Name	Duration	Start	Finish	2010				2011				2012		
					Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3
32	RI & FS/PP/ROD (or Housekeeping Removal Action & DD)	287 days	Tue 1/11/11	Mon 10/24/11											
33	Preliminary RI Work Plan	60 days	Tue 1/11/11	Fri 3/11/11											
34	Gov't comments	30 days	Mon 3/14/11	Tue 4/12/11											
35	Issue Draft RI Work Plan	14 days	Wed 4/13/11	Tue 4/26/11											
36	Regulatory Review	62 days	Wed 4/27/11	Mon 6/27/11											
37	Issue Draft Final RI Work Plan	14 days	Tue 6/28/11	Mon 7/11/11											
38	Issue Final RI Work Plan	14 days	Tue 7/12/11	Mon 7/25/11											
39	Field Investigation (and Laboratory)	91 days	Tue 7/26/11	Mon 10/24/11											
40	RI Report	210 days	Tue 10/25/11	Mon 5/21/12											
41	Preliminary RI	60 days	Tue 10/25/11	Fri 12/23/11											
42	Gov't comments	30 days	Mon 12/26/11	Tue 1/24/12											
43	Issue draft RI report	21 days	Wed 1/25/12	Tue 2/14/12											
44	Regulatory Review	62 days	Wed 2/15/12	Mon 4/16/12											
45	Issue draft final RI report	21 days	Tue 4/17/12	Mon 5/7/12											
46	Issue final RI report	14 days	Tue 5/8/12	Mon 5/21/12											
47	FS	182 days	Tue 5/22/12	Mon 11/19/12											
48	Preliminary FS	45 days	Tue 5/22/12	Thu 7/5/12											
49	Gov't comments	32 days	Fri 7/6/12	Mon 8/6/12											
50	Issue draft FS	14 days	Tue 8/7/12	Mon 8/20/12											
51	Regulatory Review	60 days	Tue 8/21/12	Fri 10/19/12											
52	Issue draft final FS	15 days	Mon 10/22/12	Mon 11/5/12											
53	Issue final FS	14 days	Tue 11/6/12	Mon 11/19/12											
54	PP	227 days	Tue 11/20/12	Thu 7/4/13											
55	Preliminary PP	30 days	Tue 11/20/12	Wed 12/19/12											
56	Gov't comments	30 days	Thu 12/20/12	Fri 1/18/13											
57	Issue Draft PP	30 days	Mon 1/21/13	Tue 2/19/13											
58	Regulatory/Legal Review	62 days	Wed 2/20/13	Mon 4/22/13											
59	Draft Final PP	14 days	Tue 4/23/13	Mon 5/6/13											
60	Public Comment Period	45 days	Tue 5/7/13	Thu 6/20/13											
61	Issue Final PP	14 days	Fri 6/21/13	Thu 7/4/13											
62	ROD	138 days	Fri 7/5/13	Tue 11/19/13											
63	Preliminary ROD	32 days	Fri 7/5/13	Mon 8/5/13											
64	Gov't comments	15 days	Tue 8/6/13	Tue 8/20/13											
65	Issue Draft ROD	14 days	Wed 8/21/13	Tue 9/3/13											
66	Regulatory/Legal Review	62 days	Wed 9/4/13	Mon 11/4/13											
67	Issue ROD for Signature	15 days	Tue 11/5/13	Tue 11/19/13											

Task		Milestone		External Tasks	
Split		Summary		External Milestone	
Progress		Project Summary		Deadline	

Schedule 3-7
AOC 3 FY11-FY12 Schedule

ID	Task Name	Duration	Start	2010				2011				2012			
				Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	
1	CAX	1949 days	Fri 7/11/08												
2	AOC 3	1949 days	Fri 7/11/08												
3	Site Investigation	588 days	Fri 7/11/08												
4	CAX Site 4, 9, & AOC 3 Work Plan	148 days	Fri 7/11/08												
5	Gov't comments	15 days	Thu 1/8/09												
6	Issue Draft WP	57 days	Fri 1/23/09												
7	Regulatory Review	89 days	Mon 3/23/09												
8	Issue Draft Final WP	64 days	Mon 6/22/09												
9	Issue Final WP	51 days	Tue 8/25/09												
10	Field Investigation (and Laboratory)	116 days	Mon 10/26/09												
11	Site Investigation Report	330 days	Mon 2/22/10												
12	Preliminary SI Report	166 days	Mon 2/22/10												
13	Gov't comments	30 days	Mon 8/23/10												
14	Issue Draft SI Report	21 days	Wed 9/22/10												
15	Regulatory Review	62 days	Wed 10/13/10												
16	Issue Draft Final SI Report	21 days	Tue 12/14/10												
17	Issue Final SI Report	14 days	Tue 1/4/11												
18	EE/CA & DD (or RI/FS/PP/ROD)	168 days	Tue 1/18/11												
19	Preliminary EE/CA	45 days	Tue 1/18/11												
20	Gov't comments	15 days	Fri 3/4/11												
21	Issue Draft EE/CA	15 days	Mon 3/21/11												
22	Regulatory Review	30 days	Tue 4/5/11												
23	Issue Draft Final EE/CA	15 days	Thu 5/5/11												
24	Public Comment Period	32 days	Fri 5/20/11												
25	Issue Final EE/CA	14 days	Tue 6/21/11												
26	Implementation of EE/CA and Post-Construction Documentation	182 days	Tue 7/5/11												
27	Implementation of EE/CA & Preliminary CCR	92 days	Tue 7/5/11												
28	Gov't comments	14 days	Wed 10/5/11												
29	Issue Draft CCR	14 days	Wed 10/19/11												
30	Regulatory Review	30 days	Wed 11/2/11												
31	Issue Draft Final CCR	15 days	Fri 12/2/11												
32	Issue Final CCR	15 days	Mon 12/19/11												
33	DD	155 days	Tue 1/3/12												
34	Preliminary DD	32 days	Tue 1/3/12												
35	Gov't comments	15 days	Mon 2/6/12												
36	Issue Draft DD	15 days	Tue 2/21/12												
37	Regulatory Review	62 days	Wed 3/7/12												
38	Issue Draft Final DD	15 days	Tue 5/8/12												
39	Issue Final DD	14 days	Wed 5/23/12												

Task		Milestone		External Tasks	
Split		Summary		External Milestone	
Progress		Project Summary		Deadline	

Schedule 3-7
AOC 3 FY11-FY12 Schedule

ID	Task Name	Duration	Start	2010				2011				2012				
				Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3		
40	RI & FS/PP/ROD (or EE/CA & DD)	288 days	Tue 1/18/11													
41	Preliminary RI Work Plan	60 days	Tue 1/18/11													
42	Gov't comments	30 days	Mon 3/21/11													
43	Issue Draft RI Work Plan	14 days	Wed 4/20/11													
44	Regulatory Review	62 days	Wed 5/4/11													
45	Issue Draft Final RI Work Plan	15 days	Tue 7/5/11													
46	Issue Final RI Work Plan	15 days	Wed 7/20/11													
47	Field Investigation (and Laboratory)	90 days	Thu 8/4/11													
48	RI Report	209 days	Wed 11/2/11													
49	Preliminary RI	62 days	Wed 11/2/11													
50	Gov't comments	30 days	Tue 1/3/12													
51	Issue draft RI report	21 days	Thu 2/2/12													
52	Regulatory Review	61 days	Thu 2/23/12													
53	Issue draft final RI report	21 days	Tue 4/24/12													
54	Issue final RI report	14 days	Tue 5/15/12													
55	FS	182 days	Tue 5/29/12													
56	Preliminary FS	45 days	Tue 5/29/12													
57	Gov't comments	32 days	Fri 7/13/12													
58	Issue draft FS	14 days	Tue 8/14/12													
59	Regulatory Review	60 days	Tue 8/28/12													
60	Issue draft final FS	15 days	Mon 10/29/12													
61	Issue final FS	14 days	Tue 11/13/12													
62	PP	212 days	Tue 11/27/12													
63	Preliminary PP	30 days	Tue 11/27/12													
64	Gov't comments	30 days	Thu 12/27/12													
65	Issue Draft PP	30 days	Mon 1/28/13													
66	Regulatory/Legal Review	62 days	Wed 2/27/13													
67	Draft Final PP	14 days	Tue 4/30/13													
68	Public Comment Period	30 days	Tue 5/14/13													
69	Issue Final PP	14 days	Thu 6/13/13													
70	ROD	138 days	Thu 6/27/13													
71	Preliminary ROD	30 days	Thu 6/27/13													
72	Gov't comments	15 days	Mon 7/29/13													
73	Issue Draft ROD	15 days	Tue 8/13/13													
74	Regulatory/Legal Review	62 days	Wed 8/28/13													
75	Issue ROD for Signature	14 days	Tue 10/29/13													

Task		Milestone		External Tasks	
Split		Summary		External Milestone	
Progress		Project Summary		Deadline	

Schedule 3-8
AOC 6 FY11-FY12 Schedule

ID	Task Name	Duration	Start	Finish	2010				2011				2012			
					Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	
1	CAX	2274 days	Tue 7/10/07	Tue 11/19/13												
2	AOC 6	2274 days	Tue 7/10/07	Tue 11/19/13												
3	Site Investigation	533 days	Tue 7/10/07	Wed 2/11/09												
4	Various AOC Work Plan	45 days	Tue 7/10/07	Mon 9/10/07												
5	Gov't comments	110 days	Tue 9/11/07	Wed 1/30/08												
6	Issue Draft WP	29 days	Thu 1/31/08	Thu 2/28/08												
7	Regulatory Review	169 days	Fri 2/29/08	Fri 8/15/08												
8	Issue Draft Final WP	24 days	Mon 8/18/08	Wed 9/10/08												
9	Issue Final WP	34 days	Thu 9/11/08	Tue 10/14/08												
10	Field Investigation (and Laboratory)	120 days	Wed 10/15/08	Wed 2/11/09												
11	Site Investigation Report	697 days	Thu 2/12/09	Mon 1/10/11												
12	Preliminary SI Report	554 days	Thu 2/12/09	Fri 8/20/10												
13	Gov't comments	30 days	Mon 8/23/10	Tue 9/21/10												
14	Issue Draft SI Report	14 days	Wed 9/22/10	Tue 10/5/10												
15	Regulatory Review	62 days	Wed 10/6/10	Mon 12/6/10												
16	Issue Draft Final SI Report	21 days	Tue 12/7/10	Mon 12/27/10												
17	Issue Final SI Report	14 days	Tue 12/28/10	Mon 1/10/11												
18	EE/CA and/or DD (or RI/FS/PP/ROD)	193 days	Tue 1/11/11	Fri 7/22/11												
19	Preliminary EE/CA	45 days	Tue 1/11/11	Thu 2/24/11												
20	Gov't comments	14 days	Fri 2/25/11	Thu 3/10/11												
21	Issue Draft EE/CA	14 days	Fri 3/11/11	Thu 3/24/11												
22	Regulatory Review	60 days	Fri 3/25/11	Mon 5/23/11												
23	Issue Draft Final EE/CA	15 days	Tue 5/24/11	Tue 6/7/11												
24	Public Comment Period	30 days	Wed 6/8/11	Thu 7/7/11												
25	Issue Final EE/CA	15 days	Fri 7/8/11	Fri 7/22/11												
26	Implementation of EE/CA and Post-Construction Documentation	179 days	Mon 7/25/11	Thu 1/19/12												
27	Implementation of EE/CA & Preliminary CCR	89 days	Mon 7/25/11	Fri 10/21/11												
28	Gov't comments	15 days	Mon 10/24/11	Mon 11/7/11												
29	Issue Draft CCR	14 days	Tue 11/8/11	Mon 11/21/11												
30	Regulatory Review	30 days	Tue 11/22/11	Wed 12/21/11												
31	Issue Draft Final CCR	15 days	Thu 12/22/11	Thu 1/5/12												
32	Issue Final CCR	14 days	Fri 1/6/12	Thu 1/19/12												
33	DD	151 days	Fri 1/20/12	Mon 6/18/12												
34	Preliminary DD	32 days	Fri 1/20/12	Mon 2/20/12												
35	Gov't comments	14 days	Tue 2/21/12	Mon 3/5/12												
36	Issue Draft DD	14 days	Tue 3/6/12	Mon 3/19/12												
37	Regulatory Review	60 days	Tue 3/20/12	Fri 5/18/12												
38	Issue Draft Final DD	15 days	Mon 5/21/12	Mon 6/4/12												
39	Issue Final DD	14 days	Tue 6/5/12	Mon 6/18/12												

Task Progress Summary External Tasks Deadline

 Split Milestone Project Summary External Milestone

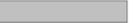
Schedule 3-8
AOC 6 FY11-FY12 Schedule

ID	Task Name	Duration	Start	Finish	2010				2011				2012			
					Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	
40	RI & FS/PP/ROD (or Housekeeping Removal Action & DD)	287 days	Tue 1/11/11	Mon 10/24/11												
41	Preliminary RI Work Plan	60 days	Tue 1/11/11	Fri 3/11/11												
42	Gov't comments	30 days	Mon 3/14/11	Tue 4/12/11												
43	Issue Draft RI Work Plan	14 days	Wed 4/13/11	Tue 4/26/11												
44	Regulatory Review	62 days	Wed 4/27/11	Mon 6/27/11												
45	Issue Draft Final RI Work Plan	14 days	Tue 6/28/11	Mon 7/11/11												
46	Issue Final RI Work Plan	14 days	Tue 7/12/11	Mon 7/25/11												
47	Field Investigation (and Laboratory)	91 days	Tue 7/26/11	Mon 10/24/11												
48	RI Report	210 days	Tue 10/25/11	Mon 5/21/12												
49	Preliminary RI	60 days	Tue 10/25/11	Fri 12/23/11												
50	Gov't comments	30 days	Mon 12/26/11	Tue 1/24/12												
51	Issue draft RI report	21 days	Wed 1/25/12	Tue 2/14/12												
52	Regulatory Review	62 days	Wed 2/15/12	Mon 4/16/12												
53	Issue draft final RI report	21 days	Tue 4/17/12	Mon 5/7/12												
54	Issue final RI report	14 days	Tue 5/8/12	Mon 5/21/12												
55	FS	182 days	Tue 5/22/12	Mon 11/19/12												
56	Preliminary FS	45 days	Tue 5/22/12	Thu 7/5/12												
57	Gov't comments	32 days	Fri 7/6/12	Mon 8/6/12												
58	Issue draft FS	14 days	Tue 8/7/12	Mon 8/20/12												
59	Regulatory Review	60 days	Tue 8/21/12	Fri 10/19/12												
60	Issue draft final FS	15 days	Mon 10/22/12	Mon 11/5/12												
61	Issue final FS	14 days	Tue 11/6/12	Mon 11/19/12												
62	PP	227 days	Tue 11/20/12	Thu 7/4/13												
63	Preliminary PP	30 days	Tue 11/20/12	Wed 12/19/12												
64	Gov't comments	30 days	Thu 12/20/12	Fri 1/18/13												
65	Issue Draft PP	30 days	Mon 1/21/13	Tue 2/19/13												
66	Regulatory/Legal Review	62 days	Wed 2/20/13	Mon 4/22/13												
67	Draft Final PP	14 days	Tue 4/23/13	Mon 5/6/13												
68	Public Comment Period	45 days	Tue 5/7/13	Thu 6/20/13												
69	Issue Final PP	14 days	Fri 6/21/13	Thu 7/4/13												
70	ROD	138 days	Fri 7/5/13	Tue 11/19/13												
71	Preliminary ROD	32 days	Fri 7/5/13	Mon 8/5/13												
72	Gov't comments	15 days	Tue 8/6/13	Tue 8/20/13												
73	Issue Draft ROD	14 days	Wed 8/21/13	Tue 9/3/13												
74	Regulatory/Legal Review	62 days	Wed 9/4/13	Mon 11/4/13												
75	Issue ROD for Signature	15 days	Tue 11/5/13	Tue 11/19/13												

Task		Progress		Summary		External Tasks		Deadline	
Split		Milestone		Project Summary		External Milestone			

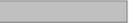
Schedule 3-9
AOC 7 FY11-FY12 Schedule

ID	Task Name	Duration	Start	Finish	2010				2011				2012			
					Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	
1	CAX	2274 days	Tue 7/10/07	Tue 11/19/13												
2	AOC 7	2274 days	Tue 7/10/07	Tue 11/19/13												
3	Site Investigation	533 days	Tue 7/10/07	Wed 2/11/09												
4	Various AOC Work Plan	45 days	Tue 7/10/07	Mon 9/10/07												
5	Gov't comments	110 days	Tue 9/11/07	Wed 1/30/08												
6	Issue Draft WP	29 days	Thu 1/31/08	Thu 2/28/08												
7	Regulatory Review	169 days	Fri 2/29/08	Fri 8/15/08												
8	Issue Draft Final WP	24 days	Mon 8/18/08	Wed 9/10/08												
9	Issue Final WP	34 days	Thu 9/11/08	Tue 10/14/08												
10	Field Investigation (and Laboratory)	120 days	Wed 10/15/08	Wed 2/11/09												
11	Site Investigation Report	697 days	Thu 2/12/09	Mon 1/10/11												
12	Preliminary SI Report	554 days	Thu 2/12/09	Fri 8/20/10												
13	Gov't comments	30 days	Mon 8/23/10	Tue 9/21/10												
14	Issue Draft SI Report	14 days	Wed 9/22/10	Tue 10/5/10												
15	Regulatory Review	62 days	Wed 10/6/10	Mon 12/6/10												
16	Issue Draft Final SI Report	21 days	Tue 12/7/10	Mon 12/27/10												
17	Issue Final SI Report	14 days	Tue 12/28/10	Mon 1/10/11												
18	EE/CA and/or DD (or R/FS/PP/ROD)	193 days	Tue 1/11/11	Fri 7/22/11												
19	Preliminary EE/CA	45 days	Tue 1/11/11	Thu 2/24/11												
20	Gov't comments	14 days	Fri 2/25/11	Thu 3/10/11												
21	Issue Draft EE/CA	14 days	Fri 3/11/11	Thu 3/24/11												
22	Regulatory Review	60 days	Fri 3/25/11	Mon 5/23/11												
23	Issue Draft Final EE/CA	15 days	Tue 5/24/11	Tue 6/7/11												
24	Public Comment Period	30 days	Wed 6/8/11	Thu 7/7/11												
25	Issue Final EE/CA	15 days	Fri 7/8/11	Fri 7/22/11												
26	Implementation of EE/CA and Post-Construction Documentation	179 days	Mon 7/25/11	Thu 1/19/12												
27	Implementation of EE/CA & Preliminary CCR	89 days	Mon 7/25/11	Fri 10/21/11												
28	Gov't comments	15 days	Mon 10/24/11	Mon 11/7/11												
29	Issue Draft CCR	14 days	Tue 11/8/11	Mon 11/21/11												
30	Regulatory Review	30 days	Tue 11/22/11	Wed 12/21/11												
31	Issue Draft Final CCR	15 days	Thu 12/22/11	Thu 1/5/12												
32	Issue Final CCR	14 days	Fri 1/6/12	Thu 1/19/12												
33	DD	151 days	Fri 1/20/12	Mon 6/18/12												
34	Preliminary DD	32 days	Fri 1/20/12	Mon 2/20/12												
35	Gov't comments	14 days	Tue 2/21/12	Mon 3/5/12												
36	Issue Draft DD	14 days	Tue 3/6/12	Mon 3/19/12												
37	Regulatory Review	60 days	Tue 3/20/12	Fri 5/18/12												
38	Issue Draft Final DD	15 days	Mon 5/21/12	Mon 6/4/12												
39	Issue Final DD	14 days	Tue 6/5/12	Mon 6/18/12												

Task  Progress  Summary  External Tasks  Deadline 
 Split  Milestone  Project Summary  External Milestone 

Schedule 3-9
AOC 7 FY11-FY12 Schedule

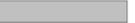
ID	Task Name	Duration	Start	Finish	2010				2011				2012		
					Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3
40	RI & FS/PP/ROD (or Housekeeping Removal Action & DD)	287 days	Tue 1/11/11	Mon 10/24/11											
41	Preliminary RI Work Plan	60 days	Tue 1/11/11	Fri 3/11/11											
42	Gov't comments	30 days	Mon 3/14/11	Tue 4/12/11											
43	Issue Draft RI Work Plan	14 days	Wed 4/13/11	Tue 4/26/11											
44	Regulatory Review	62 days	Wed 4/27/11	Mon 6/27/11											
45	Issue Draft Final RI Work Plan	14 days	Tue 6/28/11	Mon 7/11/11											
46	Issue Final RI Work Plan	14 days	Tue 7/12/11	Mon 7/25/11											
47	Field Investigation (and Laboratory)	91 days	Tue 7/26/11	Mon 10/24/11											
48	RI Report	210 days	Tue 10/25/11	Mon 5/21/12											
49	Preliminary RI	60 days	Tue 10/25/11	Fri 12/23/11											
50	Gov't comments	30 days	Mon 12/26/11	Tue 1/24/12											
51	Issue draft RI report	21 days	Wed 1/25/12	Tue 2/14/12											
52	Regulatory Review	62 days	Wed 2/15/12	Mon 4/16/12											
53	Issue draft final RI report	21 days	Tue 4/17/12	Mon 5/7/12											
54	Issue final RI report	14 days	Tue 5/8/12	Mon 5/21/12											
55	FS	182 days	Tue 5/22/12	Mon 11/19/12											
56	Preliminary FS	45 days	Tue 5/22/12	Thu 7/5/12											
57	Gov't comments	32 days	Fri 7/6/12	Mon 8/6/12											
58	Issue draft FS	14 days	Tue 8/7/12	Mon 8/20/12											
59	Regulatory Review	60 days	Tue 8/21/12	Fri 10/19/12											
60	Issue draft final FS	15 days	Mon 10/22/12	Mon 11/5/12											
61	Issue final FS	14 days	Tue 11/6/12	Mon 11/19/12											
62	PP	227 days	Tue 11/20/12	Thu 7/4/13											
63	Preliminary PP	30 days	Tue 11/20/12	Wed 12/19/12											
64	Gov't comments	30 days	Thu 12/20/12	Fri 1/18/13											
65	Issue Draft PP	30 days	Mon 1/21/13	Tue 2/19/13											
66	Regulatory/Legal Review	62 days	Wed 2/20/13	Mon 4/22/13											
67	Draft Final PP	14 days	Tue 4/23/13	Mon 5/6/13											
68	Public Comment Period	45 days	Tue 5/7/13	Thu 6/20/13											
69	Issue Final PP	14 days	Fri 6/21/13	Thu 7/4/13											
70	ROD	138 days	Fri 7/5/13	Tue 11/19/13											
71	Preliminary ROD	32 days	Fri 7/5/13	Mon 8/5/13											
72	Gov't comments	15 days	Tue 8/6/13	Tue 8/20/13											
73	Issue Draft ROD	14 days	Wed 8/21/13	Tue 9/3/13											
74	Regulatory/Legal Review	62 days	Wed 9/4/13	Mon 11/4/13											
75	Issue ROD for Signature	15 days	Tue 11/5/13	Tue 11/19/13											

Task  Progress  Summary  External Tasks  Deadline 

Split  Milestone  Project Summary  External Milestone 

Schedule 3-10
AOC 8 FY11-FY12 Schedule

ID	Task Name	Duration	Start	Finish	2010				2011				2012			
					Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	
1	CAX	2274 days	Tue 7/10/07	Tue 11/19/13												
2	AOC 8	2274 days	Tue 7/10/07	Tue 11/19/13												
3	Site Investigation	533 days	Tue 7/10/07	Wed 2/11/09												
4	Various AOC Work Plan	45 days	Tue 7/10/07	Mon 9/10/07												
5	Gov't comments	110 days	Tue 9/11/07	Wed 1/30/08												
6	Issue Draft WP	29 days	Thu 1/31/08	Thu 2/28/08												
7	Regulatory Review	169 days	Fri 2/29/08	Fri 8/15/08												
8	Issue Draft Final WP	24 days	Mon 8/18/08	Wed 9/10/08												
9	Issue Final WP	34 days	Thu 9/11/08	Tue 10/14/08												
10	Field Investigation (and Laboratory)	120 days	Wed 10/15/08	Wed 2/11/09												
11	Site Investigation Report	697 days	Thu 2/12/09	Mon 1/10/11												
12	Preliminary SI Report	554 days	Thu 2/12/09	Fri 8/20/10												
13	Gov't comments	30 days	Mon 8/23/10	Tue 9/21/10												
14	Issue Draft SI Report	14 days	Wed 9/22/10	Tue 10/5/10												
15	Regulatory Review	62 days	Wed 10/6/10	Mon 12/6/10												
16	Issue Draft Final SI Report	21 days	Tue 12/7/10	Mon 12/27/10												
17	Issue Final SI Report	14 days	Tue 12/28/10	Mon 1/10/11												
18	EE/CA and/or DD (or R/FS/PP/ROD)	193 days	Tue 1/11/11	Fri 7/22/11												
19	Preliminary EE/CA	45 days	Tue 1/11/11	Thu 2/24/11												
20	Gov't comments	14 days	Fri 2/25/11	Thu 3/10/11												
21	Issue Draft EE/CA	14 days	Fri 3/11/11	Thu 3/24/11												
22	Regulatory Review	60 days	Fri 3/25/11	Mon 5/23/11												
23	Issue Draft Final EE/CA	15 days	Tue 5/24/11	Tue 6/7/11												
24	Public Comment Period	30 days	Wed 6/8/11	Thu 7/7/11												
25	Issue Final EE/CA	15 days	Fri 7/8/11	Fri 7/22/11												
26	Implementation of EE/CA and Post-Construction Documentation	179 days	Mon 7/25/11	Thu 1/19/12												
27	Implementation of EE/CA & Preliminary CCR	89 days	Mon 7/25/11	Fri 10/21/11												
28	Gov't comments	15 days	Mon 10/24/11	Mon 11/7/11												
29	Issue Draft CCR	14 days	Tue 11/8/11	Mon 11/21/11												
30	Regulatory Review	30 days	Tue 11/22/11	Wed 12/21/11												
31	Issue Draft Final CCR	15 days	Thu 12/22/11	Thu 1/5/12												
32	Issue Final CCR	14 days	Fri 1/6/12	Thu 1/19/12												
33	DD	151 days	Fri 1/20/12	Mon 6/18/12												
34	Preliminary DD	32 days	Fri 1/20/12	Mon 2/20/12												
35	Gov't comments	14 days	Tue 2/21/12	Mon 3/5/12												
36	Issue Draft DD	14 days	Tue 3/6/12	Mon 3/19/12												
37	Regulatory Review	60 days	Tue 3/20/12	Fri 5/18/12												
38	Issue Draft Final DD	15 days	Mon 5/21/12	Mon 6/4/12												
39	Issue Final DD	14 days	Tue 6/5/12	Mon 6/18/12												

Task		Progress		Summary		External Tasks		Deadline	
Split		Milestone		Project Summary		External Milestone			

Schedule 3-10
AOC 8 FY11-FY12 Schedule

ID	Task Name	Duration	Start	Finish	2010				2011				2012		
					Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3
40	RI & FS/PP/ROD (or Housekeeping Removal Action & DD)	287 days	Tue 1/11/11	Mon 10/24/11											
41	Preliminary RI Work Plan	60 days	Tue 1/11/11	Fri 3/11/11											
42	Gov't comments	30 days	Mon 3/14/11	Tue 4/12/11											
43	Issue Draft RI Work Plan	14 days	Wed 4/13/11	Tue 4/26/11											
44	Regulatory Review	62 days	Wed 4/27/11	Mon 6/27/11											
45	Issue Draft Final RI Work Plan	14 days	Tue 6/28/11	Mon 7/11/11											
46	Issue Final RI Work Plan	14 days	Tue 7/12/11	Mon 7/25/11											
47	Field Investigation (and Laboratory)	91 days	Tue 7/26/11	Mon 10/24/11											
48	RI Report	210 days	Tue 10/25/11	Mon 5/21/12											
49	Preliminary RI	60 days	Tue 10/25/11	Fri 12/23/11											
50	Gov't comments	30 days	Mon 12/26/11	Tue 1/24/12											
51	Issue draft RI report	21 days	Wed 1/25/12	Tue 2/14/12											
52	Regulatory Review	62 days	Wed 2/15/12	Mon 4/16/12											
53	Issue draft final RI report	21 days	Tue 4/17/12	Mon 5/7/12											
54	Issue final RI report	14 days	Tue 5/8/12	Mon 5/21/12											
55	FS	182 days	Tue 5/22/12	Mon 11/19/12											
56	Preliminary FS	45 days	Tue 5/22/12	Thu 7/5/12											
57	Gov't comments	32 days	Fri 7/6/12	Mon 8/6/12											
58	Issue draft FS	14 days	Tue 8/7/12	Mon 8/20/12											
59	Regulatory Review	60 days	Tue 8/21/12	Fri 10/19/12											
60	Issue draft final FS	15 days	Mon 10/22/12	Mon 11/5/12											
61	Issue final FS	14 days	Tue 11/6/12	Mon 11/19/12											
62	PP	227 days	Tue 11/20/12	Thu 7/4/13											
63	Preliminary PP	30 days	Tue 11/20/12	Wed 12/19/12											
64	Gov't comments	30 days	Thu 12/20/12	Fri 1/18/13											
65	Issue Draft PP	30 days	Mon 1/21/13	Tue 2/19/13											
66	Regulatory/Legal Review	62 days	Wed 2/20/13	Mon 4/22/13											
67	Draft Final PP	14 days	Tue 4/23/13	Mon 5/6/13											
68	Public Comment Period	45 days	Tue 5/7/13	Thu 6/20/13											
69	Issue Final PP	14 days	Fri 6/21/13	Thu 7/4/13											
70	ROD	138 days	Fri 7/5/13	Tue 11/19/13											
71	Preliminary ROD	32 days	Fri 7/5/13	Mon 8/5/13											
72	Gov't comments	15 days	Tue 8/6/13	Tue 8/20/13											
73	Issue Draft ROD	14 days	Wed 8/21/13	Tue 9/3/13											
74	Regulatory/Legal Review	62 days	Wed 9/4/13	Mon 11/4/13											
75	Issue ROD for Signature	15 days	Tue 11/5/13	Tue 11/19/13											

Task  Progress  Summary  External Tasks  Deadline 
 Split  Milestone  Project Summary  External Milestone 

Schedule 3-11
AOC 9 FY11-FY12 Schedule

ID	Task Name	Duration	Start	2010				2011				2012			
				Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	
1	CAX	2478 days	Tue 7/13/10	[Summary bar]											
2	AOC 9	2478 days	Tue 7/13/10	[Summary bar]											
3	Site Investigation	1015 days	Tue 7/13/10	[Summary bar]											
4	UFP-SAP	238 days	Tue 7/13/10	[Summary bar]											
5	Preliminary UFP-SAP	91 days	Tue 7/13/10	[Task bar]											
6	Gov't comments	21 days	Tue 10/12/10	[Task bar]											
7	Issue Draft UFP-SAP	30 days	Mon 11/8/10	[Task bar]											
8	Regulatory Review	62 days	Wed 12/8/10	[Task bar]											
9	Issue Final UFP-SAP	28 days	Tue 2/8/11	[Task bar]											
10	Step 1 Field Investigation (and Laboratory)	91 days	Tue 3/8/11	[Task bar]											
11	Step 1 Tech Memo	84 days	Tue 6/7/11	[Summary bar]											
12	Preliminary Draft Tech Memo	30 days	Tue 6/7/11	[Task bar]											
13	Gov't comments	7 days	Thu 7/7/11	[Task bar]											
14	Issue Draft Tech Memo	7 days	Thu 7/14/11	[Task bar]											
15	Regulatory Review	30 days	Thu 7/21/11	[Task bar]											
16	Issue Final Tech Memo	8 days	Mon 8/22/11	[Task bar]											
17	UFP-SAP Addendum for Step 2	168 days	Tue 8/30/11	[Summary bar]											
18	Preliminary Draft UFP-SAP Addendum	15 days	Tue 8/30/11	[Task bar]											
19	Gov't comments	21 days	Wed 9/14/11	[Task bar]											
20	Issue Draft UFP-SAP Addendum	30 days	Wed 10/5/11	[Task bar]											
21	Regulatory Review	60 days	Fri 11/4/11	[Task bar]											
22	Issue Final UFP-SAP Addendum	29 days	Mon 1/16/12	[Task bar]											
23	Step 2 Field Investigation (and Laboratory)	91 days	Tue 2/14/12	[Task bar]											
24	Step 2 Tech Memo	84 days	Tue 5/15/12	[Summary bar]											
25	Preliminary Draft Tech Memo	30 days	Tue 5/15/12	[Task bar]											
26	Gov't comments	7 days	Thu 6/14/12	[Task bar]											
27	Issue Draft Tech Memo	7 days	Thu 6/21/12	[Task bar]											
28	Regulatory Review	30 days	Thu 6/28/12	[Task bar]											
29	Issue Final Tech Memo	8 days	Mon 7/30/12	[Task bar]											
30	UFP-SAP Addendum for Step 3	168 days	Tue 8/7/12	[Summary bar]											
31	Preliminary Draft UFP-SAP Addendum	15 days	Tue 8/7/12	[Task bar]											
32	Gov't comments	21 days	Wed 8/22/12	[Task bar]											
33	Issue Draft UFP-SAP Addendum	30 days	Wed 9/12/12	[Task bar]											
34	Regulatory Review	60 days	Fri 10/12/12	[Task bar]											
35	Issue Final UFP-SAP Addendum	29 days	Mon 12/24/12	[Task bar]											
36	Step 3 Field Investigation (and Laboratory)	91 days	Tue 1/22/13	[Task bar]											
37	Site Investigation Report	326 days	Tue 4/23/13	[Summary bar]											
38	Preliminary SI Report	120 days	Tue 4/23/13	[Task bar]											
39	Gov't comments	30 days	Wed 8/21/13	[Task bar]											
40	Issue Draft SI Report	28 days	Fri 9/20/13	[Task bar]											

Task		Progress		Summary		External Tasks		Deadline	
Split		Milestone		Project Summary		External Milestone			

Schedule 3-11
AOC 9 FY11-FY12 Schedule

ID	Task Name	Duration	Start	2010				2011				2012				
				Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3		
41	Regulatory Review	60 days	Fri 10/18/13													
42	Issue Draft Final SI Report	28 days	Tue 12/17/13													
43	Issue Final SI Report	60 days	Mon 1/20/14													
44	Remedial Investigation	596 days	Mon 4/14/14													
45	UFP-SAP	299 days	Mon 4/14/14													
46	Preliminary RI UFP-SAP	90 days	Mon 4/14/14													
47	Gov't comments	30 days	Mon 8/18/14													
48	Issue Draft RI UFP-SAP	30 days	Mon 9/29/14													
49	Regulatory Review	61 days	Mon 11/10/14													
50	Issue Draft Final RI UFP-SAP	28 days	Tue 2/3/15													
51	Issue Final RI UFP-SAP	60 days	Fri 3/13/15													
52	Field Investigation (and Laboratory)	90 days	Fri 6/5/15													
53	RI Report	207 days	Fri 10/9/15													
54	Preliminary RI	60 days	Fri 10/9/15													
55	Gov't comments	30 days	Fri 1/1/16													
56	Issue draft RI report	21 days	Fri 2/12/16													
57	Regulatory Review	61 days	Mon 3/14/16													
58	Issue draft final RI report	21 days	Tue 6/7/16													
59	Issue final RI report	14 days	Wed 7/6/16													
60	Feasibility Study	178 days	Tue 7/26/16													
61	Preliminary FS	45 days	Tue 7/26/16													
62	Gov't comments	30 days	Tue 9/27/16													
63	Issue draft FS	14 days	Tue 11/8/16													
64	Regulatory Review	60 days	Mon 11/28/16													
65	Issue draft final FS	15 days	Mon 2/20/17													
66	Issue final FS	14 days	Mon 3/13/17													
67	Proposed Plan	225 days	Fri 3/31/17													
68	Preliminary PP	30 days	Fri 3/31/17													
69	Gov't comments	30 days	Fri 5/12/17													
70	Issue Draft PP	30 days	Fri 6/23/17													
71	Regulatory/Legal Review	62 days	Fri 8/4/17													
72	Draft Final PP	14 days	Tue 10/31/17													
73	Public Comment Period	45 days	Mon 11/20/17													
74	Issue Final PP	14 days	Mon 1/22/18													
75	ROD	138 days	Fri 2/9/18													
76	Preliminary ROD	32 days	Fri 2/9/18													
77	Gov't comments	15 days	Tue 3/27/18													
78	Issue Draft ROD	14 days	Tue 4/17/18													
79	Regulatory/Legal Review	62 days	Mon 5/7/18													
80	Issue ROD for Signature	15 days	Wed 8/1/18													

Task		Progress		Summary		External Tasks		Deadline	
Split		Milestone		Project Summary		External Milestone			

SECTION 4

References

- Baker Environmental, Inc. (Baker). 1994. *Site Investigation Report, Sites 1, 10, and 11, Naval Weapons Station Yorktown Cheatham Annex, Williamsburg, Virginia*. November. (Admin Record (AR) No.: 000140C).
- Baker. 1997. *Site Screening Process Report, Sites 1, 10, and 11*. September. (AR No.: 000131C).
- Baker. 1999a. *Draft Final No Further Response Action Planned Decision Document Site 9 – Transformer Storage Area, Naval Weapons Station Yorktown Cheatham Annex, Williamsburg, Virginia*. December. (AR No.: 001223).
- Baker. 1999b. *Final Field Investigation Report, Site 1 and AOC 2 Naval Weapons Station Yorktown Cheatham Annex, Williamsburg, Virginia*. September. (AR No.: 001217).
- Baker. 2000. *Removal Closeout Report, Site 11 – Bone Yard, Naval Weapons Station Yorktown Cheatham Annex, Williamsburg, Virginia*. April. (AR No.: 001477).
- Baker. 2001a. *Final Pond Study Report, Naval Weapons Station Yorktown Cheatham Annex, Williamsburg, Virginia*. August. (AR No.: 001212).
- Baker. 2001b. *Final Site Inspection Report, Site 4 and AOC 1, Naval Weapons Station Yorktown Cheatham Annex, Williamsburg, Virginia*. May. (AR No.: 001291).
- Baker. 2001c. *Final Field Investigation Report, Site 7 and AOC 2, Naval Weapons Station Yorktown Cheatham Annex, Williamsburg, Virginia*. March. (AR No.: 001348).
- Baker. 2002. *Trenching Letter Report, Site 1, Site 4, and AOC 2, Naval Weapons Station Yorktown Cheatham Annex, Williamsburg, Virginia*. June. (AR No.: 001234).
- Baker. 2003. *Final No Further Response Action Planned Decision Document for Sites 2, 3, 5, 6, 8, and 10, Naval Weapons Station Yorktown, Cheatham Annex Site*. September. (AR No.: 001373).
- Baker. 2004a. *Final No Further Response Action Planned Decision Document for Site 12, Naval Weapons Station Yorktown Cheatham Annex, Williamsburg, Virginia*. March. (AR No.: 001428).
- Baker. 2004b. *Trenching and Limited Investigation Report, Site 7N, Naval Weapons Station Yorktown Cheatham Annex, Williamsburg, Virginia*. June. (AR No.: 001479).
- Baker. 2004c. *Action Memorandum Time-Critical Removal Action, Site 7N – Old DuPont Disposal Area, Naval Weapons Station Yorktown Cheatham Annex, Williamsburg, Virginia*. June. (AR No.: 001592).
- Baker. 2005. *Screening-level Ecological Risk Assessment Report for Sites 4 and 9, Naval Weapons Station Yorktown Cheatham Annex, Williamsburg, Virginia*. June. (AR No.: 001565).
- Baker. 2006. *Updated Final Community Relations Plan, Naval Weapons Station Yorktown, Yorktown, Virginia and Cheatham Annex, Williamsburg, Virginia*. September. (AR No.: 001925).

- Baker. 2007. *Remedial Investigation, Site 11 – Bone Yard, Naval Weapons Station Yorktown Cheatham Annex, Williamsburg, Virginia*. April. (AR No.: 002171).
- Bhate Associates (Bhate). 2005. *Final Explosives Safety Submission, Shoreline Stabilization/Geotextile Tube Installation at IR Site 7 – Old DuPont Disposal Area, Naval Weapons Station Yorktown, Cheatham Annex, Yorktown, Virginia*. December. (AR No.: 001865).
- Bhate. 2007a. *Project Completion Report, Site 1 – Landfill Near Incinerator and Site 7 – Old DuPont Disposal Area, Naval Weapons Station Yorktown Cheatham Annex, Yorktown, Virginia*. December. (AR Nos.: 002195, 002196, 002197, and 002198).
- Bhate. 2007b. *Final UXO Remediation After Action Report, Shoreline Stabilization/Geotextile Tube Installation at IR Site 7– Old DuPont Disposal Area, Naval Weapons Station Yorktown Cheatham Annex, Yorktown, Virginia*. April. (AR No.: 000041).
- Brockman, A. R., D. L. Nelms, G. E. Harlow, Jr., and J. J. Gildea. 1997. *Geohydrology of the Shallow Aquifer System. Naval Weapons Station Yorktown, Yorktown, Virginia*. Prepared in cooperation with the Naval Weapons Station Yorktown Base Civil Engineer, Environmental Directorate. USGS Water Resources Investigation Report 97-4188. (Not a CERCLA/AR document)
- C. C. Johnson & Associates, Inc. and CH2M Hill. 1984. *Initial Assessment Study of Naval Supply Center (Norfolk) Cheatham Annex and Yorktown Fuels Division*. February. (AR No.: 000247).
- CH2M HILL. 2008a. *Expanded Site Inspection Report for the Closed MWR Skeet Range and the Closed Marine Pistol and Rifle Range, Naval Weapons Station Yorktown and Cheatham Annex, Williamsburg, Virginia*. March. (AR No.: 002180).
- CH2M HILL. 2008b. *Engineering Evaluation/Cost Analysis, Site 11 – Bone Yard, Naval Weapons Station Yorktown Cheatham Annex, Williamsburg, Virginia*. November. (AR No.: 002285).
- CH2M HILL. 2008c. *Final Work Plan for Site Investigation, Various Areas of Concern, Naval Weapons Station Yorktown Cheatham Annex, Williamsburg, Virginia*. October. (AR No.: 002282).
- CH2M HILL. 2009a. *Final Community Involvement Plan, Naval Weapons Station Yorktown and Cheatham Annex*. August. (AR No.: 000013).
- CH2M HILL. 2009b. *Final Technical Memorandum, Consensus for No Further Action in Soil and Groundwater, Site 11 – Bone Yard, Naval Weapons Station Yorktown, Cheatham Annex, Williamsburg, Virginia*. September. (AR. No.: 000023).
- Dames & Moore. 1986. *Confirmation Study Step 1A (Verification), Round One, Naval Supply Center, Naval Weapons Station Yorktown Cheatham Annex, Williamsburg, Virginia*. June. (AR No.: 000256).
- Dames & Moore. 1988. *Confirmation Study Step 1A (Verification), Round Two, Naval Supply Center, Naval Weapons Station Yorktown Cheatham Annex, Williamsburg, Virginia*. June. (AR No.: 000259).

- Dames & Moore. 1991. *Final Remedial Investigation Interim Report, Fleet and Industrial Supply Center (Norfolk), Naval Weapons Station Yorktown Cheatham Annex, Williamsburg, Virginia*. February. (AR No.: 000812).
- Malcolm Pirnie. 2006. *Final Preliminary Assessment, Naval Weapons Station Yorktown – Cheatham Annex, Virginia*. April. (AR No.: 001942).
- Roy F. Weston, Inc. 1999a. *Data Acquisition/Summary Report, Penniman Shell Loading Plant, Williamsburg, Virginia*. October. (AR No.: 000162C).
- Roy F. Weston, Inc. 1999b. *Final Site Inspection Narrative Report Penniman Shell Loading Plant, Williamsburg, Virginia*. August. (AR No.: 000161C).
- Shaw Environmental and Infrastructure (Shaw). 2006. *Completion Letter Report for Housekeeping Actions at CAX Site 1 and AOC 7, Cheatham Annex, Williamsburg, Virginia*. June. (AR No.: 001903).
- Shaw. 2009a. *Final Construction Completion Report: Soil and Debris Removal at Site 7, Cheatham Annex, Naval Weapons Station, Williamsburg, Virginia*. September. (AR No.: 002419).
- Shaw. 2009b. *Final Construction Completion Report, Hot Spot Removal Action at Site 11, Cheatham Annex, Yorktown Naval Weapons Station, Williamsburg, Virginia*. December. (AR No. 000043).
- Speiran and Hughes. 2001. *Hydrology and Water Quality of the Shallow Aquifer System, Yorktown Battlefield, Colonial National Historical Park at Yorktown, Virginia*. September. (Not a CERCLA/AR document).
- United States Environmental Protection Agency, Commonwealth of Virginia, and United States Department of the Navy. 2005. *Federal Facility Agreement for Naval Weapons Station Yorktown Cheatham Annex*. March. (AR No.: 001666).