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# FORT STORY ARMY DEFENSE ENVIRONMENTAL RESTORATION PROGRAM INSTALLATION ACTION PLAN FORT STORY VA

10/25/2007

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# FY2007

## FORT STORY

Army Defense Environmental Restoration Program

Installation Action Plan

Printed 25 October 2007

# FY2007

## FORT STORY

## Army Defense Environmental Restoration Program

## Installation Action Plan

Printed 25 October 2007

# Table of Contents


Statement Of Purpose ..... 1

Approval ..... 2

Concurrence ..... 3

Acronyms ..... 4

Installation Information ..... 6

Cleanup Program Summary ..... 8

Installation Restoration Program ..... 9

- IRP Summary ..... 10
- IRP Contamination Assessment ..... 11
- IRP Previous Studies ..... 13
- IRP Installation Map(s) ..... 15

Installation Restoration Program Site Descriptions ..... 16

- FTSTY- 06 LARC 60 MAINTENANCE AREA ..... 17

Installation Restoration Program Response Complete (No Further Action) Sites Summary ..... 18

IRP Schedule ..... 19

- Installation Restoration Program Milestones ..... 19
- IRP Schedule Chart ..... 20

Installation Restoration Program Costs ..... 21

- IRP Prior Funding/Current Requirements ..... 21
- IRP Required Cost- to- Complete Chart ..... 22
- IRP Programmed Cost- to- Complete Chart ..... 23

Military Munitions Response Program ..... 24

- MMRP Summary ..... 25
- MMRP Contamination Assessment ..... 26
- MMRP Previous Studies ..... 27
- MMRP Installation Map(s) ..... 28

Military Munitions Response Program Site Descriptions ..... 29

- STORY- 001- R- 01 SMALL ARMS RANGE ..... 30

# Table of Contents

Military Munitions Response Program Response Complete (No Further Action) Sites Summary ..... 31

MMRP Schedule ..... 32

Military Munitions Response Program Milestones ..... 32

MMRP Schedule Chart ..... 33

MMRP Costs ..... 34

MMRP Prior Funding/Current Requirements ..... 34

MMRP Required Cost- to- Complete Chart ..... 35

MMRP Programmed Cost- to- Complete Chart ..... 36

Community Involvement ..... 37

# Statement of Purpose

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

In an effort to coordinate planning information between the restoration manager, US Army Environmental Command (USAEC), Fort Story, US Army Corp of Engineers (USACE), Naval Facilities Engineering Command Mid- Atlantic (NAVFAC MIDLANT), Virginia Department of Environmental Quality (VDEQ), the executing agencies, and the regulatory agencies, an IAP was completed. The IAP is used to track requirements, schedules and tentative budgets for all Army installation cleanup programs.

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

The following persons contributed to the formulation and completion of this Installation Action Plan for FORT STORY during a planning workshop/book update held on 7 February 2007:

| | |
|---|---|
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# Approval

See AEDB-R for Approval and Submittal of Data by Installation

# Concurrence

See AEDB-R for Approval and Submittal of Data by Program Manager

# Acronyms

| | |
|---|---|
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act of 1980 |
| CTT | Closed, Transferred, Transferring |
| cy | cubic yard |
| DD | Decision Document |
| DERP | Defense Environmental Restoration Program |
| DMM | Discarded Military Munitions |
| DoD | Department of Defense |
| ER, A | Environmental Restoration Account |
| FRA | Final Remedial Action |
| FS | Feasibility Study |
| FY | Fiscal Year |
| IAP | Installation Action Plan |
| IMCOM | Installation Management Command |
| IRA | Interim Remedial Action |
| IRP | Installation Restoration Program |
| JMM | James M. Montgomery |
| K | $1,000 |
| LARC | Lighter Amphibious Resupply Cargo |
| LOTS | Logistcs- Over- The- Shore |
| LTM | Long- Term Management |
| MC | Munitions Constituent |
| MEC | Munitions and Explosives of Concern |
| MMRP | Military Munitions Response Program |
| MRSPP | Munitions Response Prioritization Protocol |
| NAVFAC MIDLANT | Naval Facilities Engineering Command Mid- Atlantic |
| NFA | No Further Action |
| NPL | National Priorities List |
| PA | Preliminary Assessment |
| PCE | Tetrachloroethylene |
| PHEA | Public Health and Environmental Assessment |
| RA | Remedial Action |
| RA(C) | Remedial Action (Construction) |
| RA(O) | Remedial Action (Operation) |
| RAB | Restoration Advisory Board |
| RC | Response Complete |
| RD | Remedial Design |
| RI | Remedial Investigation |
| RI/FS | Remedial Investigation / Feasibility Study |
| RIP | Remedy In Place |
| RRSE | Relative Risk Site Evaluation |
| SI | Site Inspection |
| TPH | Total Petroleum Hydrocarbon |
| TRC | Technical Review Committee |
| USACE | US Army Corps of Engineers |
| USAEC | US Army Environmental Command |

# Acronyms

| | |
|---|---|
| USAEHA | US Army Environmental Hygiene Agency (currently called USACHPPM) |
| USATHAMA | US Army Toxic and Hazardous Materials Agency (currently called USAEC) |
| USEPA | US Environmental Protection Agency |
| UST | Underground Storage Tank |
| UXO | Unexploded Ordnance |
| VDEQ | Virginia Department of Enviromental Quality |
| VOC | Volatile Organic Compound |

# Installation Information

## Installation Locale

Installation Size (Acreage): 1450
City: Virginia Beach
County:
State: Virginia
Other Locale Information

Fort Story is located at the confluence of the Chesapeake Bay and the Atlantic Ocean, north of the resort area in the City of Virginia Beach, Virginia. Fort Story occupies an area of approximately 1,450 acres, and approximately 2,000 military personnel and civilians work, live or train at Fort Story. Based on 2000 estimates, the cities adjacent to Fort Story, which include Virginia Beach, Norfolk, and Chesapeake, have respective populations of 439,889, 241,000, and 199,184.

## Installation Mission

Fort Story, a sub- installation to Fort Eustis, is primarily used as the Army's only installation conducting Logistics- Over- The-Shore (LOTS) training. With the presence of the 11th Transportation Battalion (Terminal), a subordinate unit to the 7th Transportation Sustainment Brigade, LOTS and amphibious training occur routinely. Other active and reserve tenant units from the Army, Navy and Marines make Fort Story a joint training facility. Fort Story also serves as a testing site for new transportation doctrine, concepts and equipment.

Based on the 2005 Base Realignment and Closure (BRAC) decision, Fort Story is scheduled for realignment as a Joint Basing Initiative. US Navy will be the lead.

## Lead Organization

IMCOM - Northeast

## Lead Executing Agencies for Installation

USACE, Baltimore District.

USACE, Norfolk District

USACE, Omaha District

Army Contracting Agency - Northern Region Contracting Center (NRCC)

Directorate of Contracting (DOC) at Fort Eustis

## Regulator Participation

State VDEQ, Federal Facilities Program

## National Priorities List (NPL) Status

No NPL Sites have been identified

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

Lack of outstanding cleanup issues or activities does not warrant establishment of a RAB.

## Installation Program Summaries

### IRP

Primary Contaminants of Concern: Metals, Petroleum, Oil and Lubricants, Volatiles

Affected Media of Concern: Groundwater

Estimated Date for Remedy- In- Place (RIP)/Response Complete (RC): 200709/200709

Prior Funding: $6,163.0 K

Current Requirements: $.0 K

Future Requirements: $256.0 K

### MMRP

Primary Contaminants of Concern: Metals

Affected Media of Concern: Soil

Estimated Date for Remedy- In- Place (RIP)/Response Complete (RC): 201709/201709

Prior Funding: $.0 K

Current Requirements: $141.6 K

Future Requirements: $631.0 K

# Cleanup Program Summary

## Installation Historic Activity

Fort Story is an active installation owned and operated by the Department of the Army and is the home of the 11th Transportation Battalion. Currently, Fort Story is not slated for base closure. Tenant activities at Fort Story include the Army Reserve, Navy, and Marine Corps. The US Coast Guard operates the Cape Henry Lighthouse, which is located within the Installation boundary on Department of Transportation property.

Fort Story became a military installation in 1914 and was integrated into the Coastal Defenses of the Chesapeake Bay during World War I. After the war, Fort Story was inactive until the start of World War II. As World War II approached, Fort Story began extensive development. Nearly 50 percent of the existing facilities were constructed during this period. By September of 1944, Fort Story began to transition from a heavy artillery base to a convalescent center for returning soldiers. The hospital operated until 1946 when conversion of Fort Story to an amphibious training facility was begun. Fort Story's present mission is to provide facilities and logistical services for amphibious operations and training.

CURRENT ACTIVITY: Currently, environmental investigations at Fort Story are being funded through the IRP. The VDEQ reviews these IRP efforts. Fort Story is currently not on the NPL. There has been no community interest in restoration activities at Fort Story so no TRC or RAB has been formed.

IRP Prior Year Progress:
A Final Decision Document (DD) requiring No Further Action (NFA) was signed for the Firefighter Training Area and the Auto Craft Building Area in August 2004. Results from a pilot scale treatability study, which was conducted from the summer of 2003 through the summer of 2004, were used to evaluate remedial alternatives at the Lighterage Amphibious Resupply Cargo (LARC) 60 Maintenance Area site. A Draft Feasibility Study (FS) Report was submitted for regulatory review in March 2005. The Draft FS Report proposed in- situ chemical oxidation of groundwater contamination as the selected alternative. Army requested the draft document be pulled back in FY06 for revisions. Revisions are underway and the installation is seeking a NFA DD.

IRP Future Plan of Action: Following completion of the FS, a NFA DD will be proposed.

Military Munitions Response Program (MMRP) Prior Year Progress:
The Preliminary Assessment (PA) is completed at all sites.

MMRP Future Plan of Action:
The installation plans to complete the Site Inspection (SI) by FY08 and execute follow on phases/actions as required in the individual site cleanup strategy.

## Installation Program Cleanup Progress

### IRP

| | |
|---|---|
| Prior Year Progress: | Submitted draft FS for LARC 60 site in MAR 05. Army requested the draft document pulled back in FY06 for revisions. Revisions are underway and the installation is seeking NFA. |
| Future Plan of Action: | Achieve approval for NFA at LARC 60 and complete DD. |

### MMRP

| | |
|---|---|
| Prior Year Progress: | Site Inspection (SI) initiated in FY07. |
| Future Plan of Action: | SI to be completed in FY08. |

# FORT STORY

## Army Defense Environmental Restoration Program
## Installation Restoration Program

# IRP Summary

Installation Total Army Environmental Database- Restoration (AEDB- R) Sites/RC Sites: 11/10

Installation Site Types with Future and/or Underway Phases

1 Surface Impoundment/Lagoon

(FTSTY- 06)

Most Widespread Contaminants of Concern

Metals, Petroleum, Oil and Lubricants, Volatiles

Media of Concern

Groundwater

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

| Site ID | Site Name | Action | Remedy | FY | Cost |
|---|---|---|---|---|---|
| FTSTY- 13 | ATLANTIC STREET GAS STATION (4 USTS) | FRA | WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS | 1993 | $29.0 K |
| FTSTY- 14 | BLOCK 600 USTS (39 USTS) | FRA | WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS | 1993 | $229.5 K |
| FTSTY- 04 | FIRE TRAINING AREA | IRA | BIOREMEDIATION | 1994 | $310.0 K |
| FTSTY- 04 | FIRE TRAINING AREA | IRA | WASTE REMOVAL - SOILS | 1994 | $310.0 K |
| FTSTY- 06 | LARC 60 MAINTENANCE AREA | IRA | WASTE REMOVAL - SOILS | 1994 | $183.0 K |
| FTSTY- 15 | 80TH DIV RESERVE SITE | IRA | WASTE REMOVAL - SOILS | 1995 | $460.3 K |

Total Environmental Restoration, Army (ER,A) Funding

Prior Funding: $6,163.0 K

Current Requirements: $.0 K

Future Requirements: $256.0 K

Duration of IRP

Date of IRP Inception: 198704

Estimated Date for Remedy- In- Place (RIP)/Response Complete (RC): 200709/200709

Date of IRP completion including Long Term Management (LTM): 201208

# IRP Contamination Assessment

## Contamination Assessment Overview

Contamination assessments at Fort Story started in 1977 when the US Army Environmental Hygiene Agency (USAEHA) conducted a landfill study at one sanitary landfill at Fort Story and two Fort Eustis sanitary landfills. The USAEHA study at Fort Story addressed potential contamination at Landfill #3 and Pond (FTSTY- 03) to determine if the leachate generated at the landfill could be impacting water quality in the nearby freshwater pond. The investigation concluded that the landfill was not causing any local problems.

An Installation Assessment report for Fort Story was completed in September 1982 and an Update to the Installation Assessment was completed in September 1988. The purpose of the Installation Assessments was to identify areas where toxic and hazardous materials may have been used, and where the potential for off- post migration may exist. The 1988 report identified several sites (FTSTY- 04, FTSTY- 07, and FTSTY- 12) but recommended no further remedial investigations (RIs) be conducted at these sites. Aerial photographic imagery was also conducted and indicated no major environmental problems. The report concluded that groundwater contamination has occurred in the vicinity of Landfill #3 and recommended the review of the water quality data that was being collected to determine if any further actions may be required. The report also recommended developing a ground water quality monitoring plans for the two other abandoned Landfills #1 and #2 (FTSTY- 01 and FTSTY- 02).

Between 1987 and 1988, a series of studies and Hazardous Waste Consultations were conducted by USAEHA and US Army Toxic and Hazardous Material Agency (USATHAMA) at Landfill #3 to identify potential contamination that may exist and to provide recommendations for future action. The groundwater analytical results from Landfill #3 showed no contamination from organic priority pollutant compounds. Metals were detected but the reports concluded that a contamination problem did not exist; therefore, no further monitoring was recommended at the site.

In January 1990, James M. Montgomery, Consulting Engineers (JMM) initiated a RI/Public Health and Environmental Assessment (PHEA), which addressed contamination at Landfill #3 and Pond (FTSTY- 03). This evaluation involved several phases of activity, such as collecting additional environmental data to characterize site conditions, determining the nature and extent of contamination at the site, and assessing the baseline human health and environmental risks posed by constituents detected in site media. The information collected during the RI/PHEA study supported the decision for NFA at the site.

JMM conducted a SI of the Block 600 Underground Storage Tank (UST) Area (FTSTY- 14), which involved the sampling of the UST contents and collecting groundwater samples from 10 temporary well points that were installed for the project. The data collected during this effort provided the necessary data to prepare plans and specifications for a UST removal (REM) action, which has since been completed.

In January 1992, JMM completed a PA/SI study for eight sites at Fort Story, including the following RMIS sites: FTSTY- 01, - 02, - 04, - 05, - 06, and - 07. The PA/SI activities at Fort Story were designed to confirm the presence or absence of significant contamination in site soils, sediments, groundwater and surface waters, qualitatively assess the potential for contaminant migration into the surrounding wetland areas, and define future investigations or other actions required. The report recommended additional confirmatory sampling at FTSTY- 02 and a RI/FS be conducted on FTSTY- 04, - 05, - 06 and - 07. A NFA was recommended at FTSTY- 01 (Landfill #1).

In August 1992, JMM submitted final plans, specifications, and cost estimates for the removal of five USTs at the Atlantic Street Gas Station (FTSTY- 13). Plans were also submitted for the removal of the USTs and contaminated soil at the Block 600 UST Site (FTSTY- 14). Both UST REM projects were completed in December 1993.

In January 1993, JMM completed a PA/SI at the LACV- 30 Wetlands Area (FTSTY- 12). Analytical results from the LACV- 30 field sampling effort were used to confirm the presence or absence of significant contamination in site soils, sediments, groundwater and surface waters; to assess the potential for contaminant migration into the surrounding wetland areas; and to determine future investigations or actions that may be required. Based on all data collected during this PA/SI evaluation, there is no evidence indicating that operations at the LACV- 30 Site have contributed significant hazardous substance releases to environmental media. Therefore a recommendation of "NFA" was selected for the LACV- 30 Site.

In October 1992, an Interim Remedial Action (IRA) was initiated at the Fire Fighting Training Area (FTSTY- 04) and the LARC- 60 Maintenance Area (FTSTY- 06) and the project was completed in November 1994. Approximately 410 cubic yards (cy) of contaminated soil was removed from the Fire Fighting Training Area and transported the LARC- 60 Area for treatment. Contaminated soil was also removed from the LARC- 60 sandbox area. A total of 15,000 cy of soil was bioremediated on- site and 85 cy were transported to a disposal facility.

# IRP Contamination Assessment

## Contamination Assessment Overview

In July 1994, an IRA was initiated at the 80th Division Reserve Site (FTSTY- 15) for the removal of petroleum contaminated soil. The project was completed in April 1995. Approximately 2,660 cy of contaminated soil was excavated and transport off- site for thermal treatment. Clean fill material was then used to backfill the area. Tetrachloroethylene (PCE) contaminated soil was encountered in one area. The PCE soil was put in a roll- off, analyzed and disposed of as a Resource Conservation and Recovery Act (RCRA) hazardous waste. During the June 2000 IAP meeting with VDEQ, it was determine the 80th Division Reserve Site was not ER,A eligible.

In July 1994, a RI was initiated and scoped for the Fire Training Area (FTSTY- 04), LARC 60 Maintenance Area (FTSTY- 06), and the Former Auto Craft Shop (FTSTY- 07). This project was developed based on the recommendations from the January 1992 PA/SI. A Draft RI Report was prepared in December 1995 and sent to VDEQ for review and comments.

At the Fire Training Area, limited volatile organic compounds (VOCs), semi- volatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH) and metals were detected in surface and subsurface soils but they were below the US Environmental Protection Agency (USEPA) risk screening criteria. The PCE, total lead and total arsenic were detected in the groundwater above USEPA risk screening criteria. The results of the baseline risk assessment did not identify receptors or potentially exposed populations, so NFA was recommended at this site. Additional sampling was conducted in 2000 to support the recommendation.

A Draft DD recommending NFA was submitted in March 2003 for regulatory review. The DD was finalized in August 2004.

At the LARC- 60 Maintenance Area, no compounds were detected in soils or sediment above EPA risk screening criteria; however, PCE, trichloroethene (TCE), Cis 1,2- chloroethene, toluene, total lead, total and dissolved manganese and total and dissolved arsenic were detected in the groundwater above the USEPA risk screening criteria. There are no exposure pathways or exposed population for the groundwater or surface water at this site, so NFA was also recommended. VDEQ, however, did not agree. In March 2000, additional sampling was conducted to determine if natural attenuation was taking place. In August 2000, VDEQ stated some sort of groundwater remediation would be necessary to address the groundwater contamination. In that same year, a FS was awarded. A Treatability Study was awarded in September 2001. Results were used to evaluate remedial alternatives at the site. A Draft FS Report was submitted for regulatory review in March 2005. The Draft FS Report proposes in- situ chemical oxidation of groundwater contamination as the selected alternative.

At the Former Auto Craft Shop, chloroform was the only compound detected in the groundwater above the USEPA risk screening criteria. No constituents were detected in the soil or sediments above the USEPA risk screening criteria; therefore, NFA was recommended. In August 2000, VDEQ sent the Installation a letter, which supported the recommendations that NFA is warranted at the Auto Craft Shop. A DD recommending NFA was submitted in March 2003 for regulatory review. The VDEQ recommended sampling two wells for chloroform and manganese. Sampling was conducted in August 2003. Chloroform was not detected and manganese was detected slightly above the USEPA risk based concentrations. Based upon these results, NFA was warranted at the site. The DD was finalized in August 2004.

## Cleanup Exit Strategy

A Draft FS Report for the LARC 60 Maintenance Area was submitted for regulatory review in March 2005. The Draft FS Report proposes in- situ chemical oxidation of groundwater contamination (injection of reagent) as the selected alternative. The VDEQ comments were received in December 2005. Army requested the draft document be pulled back in FY06 for revisions. Revisions are underway and the installatio nis seeking NFA DD.

# IRP Previous Studies

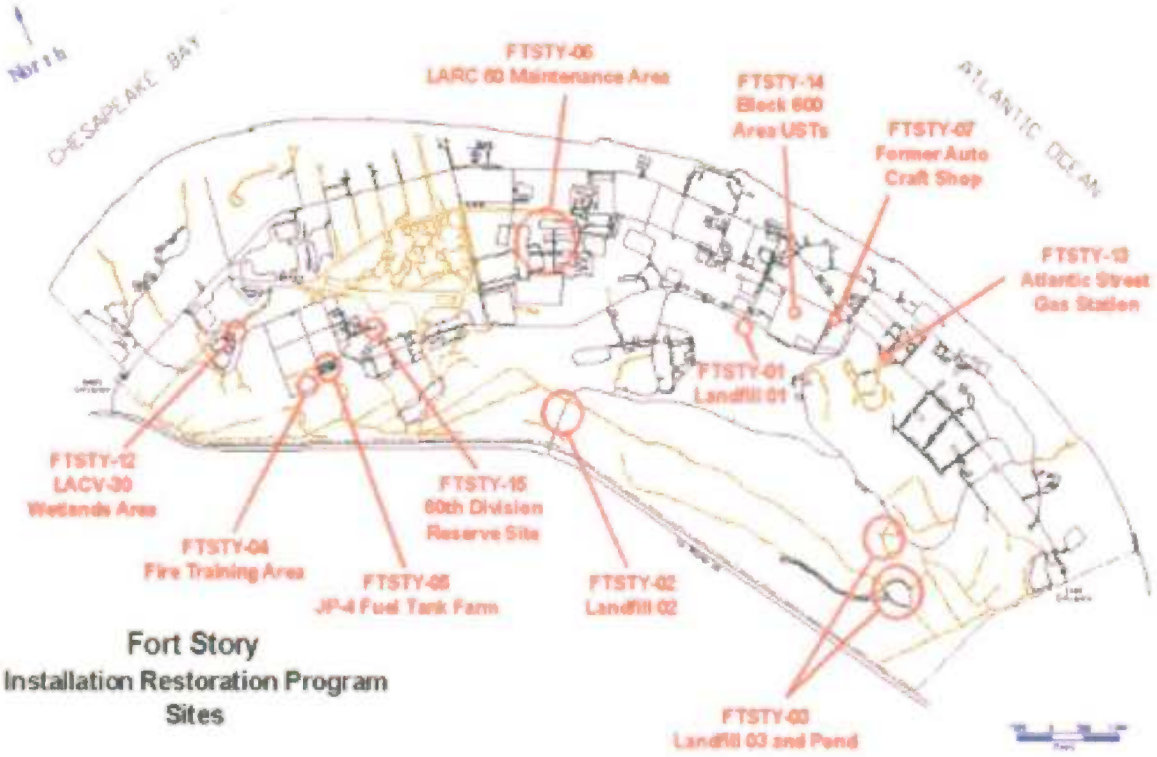
| | Title | Author | Date |
|---|---|---|---|
| 1982 | | | |
| | Aberdeen Proving Ground, Potable Recreational Water Quality Survey No. 31- 61- 0110- 83 Fort Eustis (and Fort Story) Virginia | United States Army Toxic and Hazardous Materials Agency (USATHAMA) | NOV- 1982 |
| 1987 | | | |
| | Hazardous Waste Consultation No. 37- 26- 0173- 89, Fort Eustis and Fort Story | USAEHA | JUN- 1987 |
| | Geohydrologic Study, No. 38- 26- 0828- 88, Sanitary Landfill Investigation, Fort Story | USAEHA | OCT- 1987 |
| | Aberdeen Proving Ground, Geohydrologic Study, No. 38- 26- 0828- 88, Sanitary Landfill Investigation, Fort Story | USATHAMA | OCT- 1987 |
| | Landfill Study No. 26- 0031- 78, Fort Eustis | US Army Environmental Hygiene Agency (USAEHA) | NOV- 1987 |
| 1988 | | | |
| | Update of the Initial Installation Assessment of Ft. Story, Final Report | Environmental Science and Engineering (ESE) | SEP- 1988 |
| | Update of the Initial Installation Assessment of Fort Story, Hendry, C.D., Newman, K.G., and Becker | K.A. Environmental Science and Engineering, Inc., USATHAMA | SEP- 1988 |
| 1989 | | | |
| | Hazardous Waste Consultation, No. 37- 26- 0173- 89, Fort Eustis and Fort Story, June 22- 25, 1987, Memorandum for Record | USAEHA | JAN- 1989 |
| 1991 | | | |
| | Final SI Report - Initial Site Investigation and Design for UST REM, Block 600, Fort Story | James M. Montgomery (JMM) | JAN- 1991 |
| 1992 | | | |
| | Final SI Report for the Fort Story PA/SI and Fort Story NIKE PA/SI | JMM | JAN- 1992 |
| | Final Site Investigation Report, LACV- 30 Maintenance Facility Wetlands Area, Fort Story | JMM | DEC- 1992 |
| | Final RI/Public Health and Environmental Assessment Report, Fort Story | JMM | DEC- 1992 |
| 1994 | | | |
| | Final Site Assessment Report, 80th Division LARC 60 Area, Ft Story | JMM | MAY- 1994 |
| | Site Characterization Report, 80th Division LARC 60 Area, Ft Story | ERC | JUN- 1994 |
| | Final Report, Fire Training Area No. 4 and LARC Area, Ft Story | IT Corporation | NOV- 1994 |
| 1995 | | | |
| | Final Report, 80th Division REM Action, Fort Story | IT Corporation | AUG- 1995 |
| | Final Confirmatory Studies for Site 2 - Landfill 2, Ft Story | Montgomery Watson | NOV- 1995 |
| | Draft Remedial Investigation Report, Firefighting Training Area, LARC 60 Maintenance Area, Auto Craft Building Area, Ft Story | Malcolm Pirnie | DEC- 1995 |
| 1996 | | | |
| | Draft Report Remedial Investigation Human Health and Ecological Risk Assessments, Firefighting | | JAN- 1996 |
| | Draft Report Remedial Investigation Ecological Risk Assessment, Firefighting Training Area, LARC 60 | Malcolm Pirnie | SEP- 1996 |

# IRP Previous Studies

| | Title | Author | Date |
|---|---|---|---|
| 1996 | | | |
| | Maintenance Area, Auto Craft Building Area, Fort Story | | |
| | Draft Report Remedial Investigation Human Health Risk Assessment, Firefighting Training Area, LARC 60 Maintenance Area, Auto Craft Building Area, Fort Story | Malcolm Pirnie | SEP- 1996 |
| 1997 | | | |
| | Training Area, LARC 60 Maintenance Area, Auto Craft Building Area, Ft Story | Malcolm Pirnie | AUG- 1997 |
| | Final Work Plan, Ground Water Sampling and Analysis, Landfill No. 2, Fort Story | Malcolm Pirnie | AUG- 1997 |
| 1998 | | | |
| | Preliminary Draft Letter Report for Groundwater Sampling and Analysis Landfill No. 2 | Malcolm Pirnie | APR- 1998 |
| 1999 | | | |
| | Preliminary Draft Work Plan Addendum, Field Investigation Plan, Site- Specific Chemical Data Acquisition Plan, Site- Specific Site Safety And Health Plan, Remedial Investigation, Fire Training Are, LARC 60 Maintenance Area, Fort Story | Malcolm Pirnie | AUG- 1999 |
| 2002 | | | |
| | Remedial Investigation Report, Fire Training Area, LARC 60, and Auto Craft Sites, Fort Story, Virginia | Malcolm Pirnie | DEC- 2002 |
| 2003 | | | |
| | Draft DD, Fire Training Area and Auto Craft Sites, Fort Story, Virginia | Malcolm Pirnie | MAR- 2003 |
| | Draft Work Plan Addendum, Treatability Study, LARC 60 Maintenance Area, Fort Story, Virginia | Malcolm Pirnie | MAY- 2003 |
| | Final Groundwater Sampling and Analysis Report, Landfill No. 2 | Malcolm Pirnie | AUG- 2003 |
| 2004 | | | |
| | Final DD (Firefighter Training Area (FTA) and Auto Craft Building Area) | Malcolm Pirnie | AUG- 2004 |
| | Preliminary Draft FS, LARC 60 Maintenance Area | Malcolm Pirnie | DEC- 2004 |
| 2005 | | | |
| | Draft FS, LARC 60 Maintenance Area | Malcolm Pirnie | MAR- 2005 |
| 2006 | | | |
| | Revised Draft FS LARC 60 Maintenance Area | Malcolm Pirnie | DEC- 2006 |

# IRP Installation Map(s)

Fort Story IRP Sites




**Fort Story**
**Installation Restoration Program**
**Sites**

# FORT STORY

## Installation Restoration Program

## Site Descriptions

# FTSTY- 06
# LARC 60 MAINTENANCE AREA

## STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals, Petroleum, Oil and Lubricants, Volatiles

Media of Concern: Groundwater

| Phases | Start | End |
|---|---|---|
| PA | 198909 | 199201 |
| SI | 198909 | 199201 |
| RI/FS | 199407 | 200709 |
| IRA | 199210 | 199408 |
| LTM | 200808 | 201208 |

RIP Date: N/A

RC Date: 200709

## SITE DESCRIPTION

The LARC- 60 Maintenance Area is the maintenance and wash rack area for LARC vehicles. Presently, this is the only facility on the East Coast available to the Army Transportation Corps for amphibious training. It is located in the central portion of the post. The site includes the area around Buildings 1081, 1082, 1083 and 1084 just south of the Directorate of Public Works building near the intersection Atlantic Ave and Okinawa Road.
This site was investigated under a 3 site RI, finalized in December 2002.

Submitted draft FS for the LARC- 60 site in Mar 05. Army requested the draft document be pulled back in FY06 for revisions. Results of the risk assessment indicate a slightly elevated risk to potential future residential groundwater users. However, the Army has recently revised its policy regarding potential future risk to residential receptors. As such, the FS will be withdrawn and revised to reflect current and most likely expected future use and will be submitted for regulator review. The current land use is industrial and future use is not anticipated to change. Revisions are underway and the installation is seeking NFA.

(NOTE: Phases have changed in AEDB- R. During previous data calls, the RD, RA were included and funds were obligated under the RD in FY03 and FY04; however, since the Army has recently revised its policy regarding potential future risk to residential receptors an action is not anticipated at this site. The phase schedule was changed during the Spring 2007 data call to reflect the RI/FS phase as underway followed by LTM.)

## CLEANUP/EXIT STRATEGY

Future efforts will be focused on the completion of the FS. Army requested the draft document be pulled back in FY06 for revisions. Revisions are underway and the installation is seeking NFA DD.

# Response Complete (No Further Action) Summary

| Site ID | Site Name | NFA Date | Documentation |
|---|---|---|---|
| FTSTY- 01 | CLOSED LANDFILL 1 | 199201 | Fort Story PA/SI and Fort Story NIKE PA/SI document dated JAN 92 recommended NFA |
| FTSTY- 02 | CLOSED LANDFILL 2 | 200409 | Installation has requested a "No Further Action" concurrence letter from VDEQ on numerous occassions; however, VDEQ has never submitted such a letter. |
| FTSTY- 03 | LANDFILL 3 (CLOSED) AND POND | 199212 | Remedial Investigation/Public Health and Environmental Assessment dated DEC 92 (James M. Montgomery) |
| FTSTY- 04 | FIRE TRAINING AREA | 200209 | Decision Document dated AUG 04 (Malcolm Pirnie, Inc.) |
| FTSTY- 05 | JP- 4 FUEL TANK FARM | 199201 | This site was determined ineligible for ER,A funds after PA/SI was completed in JAN 92. Site was addressed under UST program. |
| FTSTY- 07 | AUTO CRAFT SHOP | 200209 | Decision Document dated AUG 04 (Malcolm Pirnie, Inc.) |
| FTSTY- 12 | LACV 30 WETLANDS AREA | 199207 | Final PA/SI for LACV- 30 Maintenance Facility Wetlands Area, dated DEC 92 |
| FTSTY- 13 | ATLANTIC STREET GAS STATION (4 USTS) | 199312 | SI performed. Tank removed in DEC 93 and site closed under VA UST Program. |
| FTSTY- 14 | BLOCK 600 USTS (39 USTS) | 199312 | SI performed which located 30 of 39 suspected USTs. Site/tanks closed out under UST program. |
| FTSTY- 15 | 80TH DIV RESERVE SITE | 199510 | Site determined ineligible for ER,A in 1990. Site has since been moved to AEDB- CC. |

# IRP Schedule

Date of IRP Inception: 198704

Past Phase Completion Milestones

| | |
|---|---|
| 1988 | |
| PA | (FTSTY- 03 - LANDFILL 3 (CLOSED) AND POND) |
| SI | (FTSTY- 03 - LANDFILL 3 (CLOSED) AND POND) |
| 1991 | |
| ISC | (FTSTY- 13 - ATLANTIC STREET GAS STATION (4 USTS), FTSTY- 14 - BLOCK 600 USTS (39 USTS)) |
| INV | (FTSTY- 13 - ATLANTIC STREET GAS STATION (4 USTS), FTSTY- 14 - BLOCK 600 USTS (39 USTS)) |
| 1992 | |
| SI | (FTSTY- 01 - CLOSED LANDFILL 1, FTSTY- 04 - FIRE TRAINING AREA, FTSTY- 05 - JP- 4 FUEL TANK FARM, FTSTY- 06 - LARC 60 MAINTENANCE AREA, FTSTY- 07 - AUTO CRAFT SHOP, FTSTY- 12 - LACV 30 WETLANDS AREA) |
| PA | (FTSTY- 01 - CLOSED LANDFILL 1, FTSTY- 04 - FIRE TRAINING AREA, FTSTY- 05 - JP- 4 FUEL TANK FARM, FTSTY- 06 - LARC 60 MAINTENANCE AREA, FTSTY- 07 - AUTO CRAFT SHOP, FTSTY- 12 - LACV 30 WETLANDS AREA) |
| DES | (FTSTY- 13 - ATLANTIC STREET GAS STATION (4 USTS), FTSTY- 14 - BLOCK 600 USTS (39 USTS)) |
| 1993 | |
| RI/FS | (FTSTY- 03 - LANDFILL 3 (CLOSED) AND POND) |
| 1994 | |
| PA | (FTSTY- 15 - 80TH DIV RESERVE SITE) |
| IMP(C) | (FTSTY- 13 - ATLANTIC STREET GAS STATION (4 USTS), FTSTY- 14 - BLOCK 600 USTS (39 USTS)) |
| SI | (FTSTY- 15 - 80TH DIV RESERVE SITE) |
| IRA | (FTSTY- 04 - FIRE TRAINING AREA, FTSTY- 06 - LARC 60 MAINTENANCE AREA) |
| 1996 | |
| SI | (FTSTY- 02 - CLOSED LANDFILL 2) |
| IRA | (FTSTY- 15 - 80TH DIV RESERVE SITE) |
| PA | (FTSTY- 02 - CLOSED LANDFILL 2) |
| 2002 | |
| RI/FS | (FTSTY- 04 - FIRE TRAINING AREA, FTSTY- 07 - AUTO CRAFT SHOP) |
| 2004 | |
| LTM | (FTSTY- 02 - CLOSED LANDFILL 2) |

Projected Phase Completion Milestones

See attached schedule

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

| Site ID | Site Name | ROD/DD Title | ROD/DD Date |
|---|---|---|---|
| FTSTY- 06 | LARC 60 MAINTENANCE AREA | LARC 60 Maintenance Area DD | 20080815 |

Final RA(C) Completion Date: 199312

NPL Deletion Date: N/A

Schedule for Next Five- Year Review: N/A

Estimated Completion Date of IRP at Installation (including LTM phase): 201208

# FORT STORY IRP Schedule

= phase underway

| SITE ID | SITE NAME | PHASE | FY08 | FY09 | FY10 | FY11 | FY12 | FY13+ |
|---|---|---|---|---|---|---|---|---|
| FTSTY- 06 | LARC 60 MAINTENANCE AREA | PA | | | | | | |
| | | SI | | | | | | |
| | | RI/FS | | | | | | |
| | | IRA | | | | | | |
| | | LTM | | | | | | |

# IRP Costs

Total Funding through FY 2004: $5,765.0 K

Prior Funding

| FY | Phase | Site ID | Obligations | FY Total |
|---|---|---|---|---|
| 2006 | RA(C) | FTSTY- 06 | $305.0 K | $398.0 K |
| | RA(O) | FTSTY- 06 | $93.0 K | |

TOTAL PRIOR FUNDING: $6,163.0 K

Current Requirements

| FY | Phase | Site ID | Requirements | FY Total |
|---|---|---|---|---|

TOTAL CURRENT REQUIREMENTS: $.0 K

TOTAL FUTURE REQUIREMENTS: $256.0 K

TOTAL PROGRAM COST: $6,419.0 K

Required Cost- to- Complete

| SITE ID | SITE NAME | Phase | FY08 | FY09 | FY10 | FY11 | FY12 | FY13 | FY14 | | Out Yrs | Site Total | Description of Work |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FTSTY- 06 | LARC 60 MAINTENANCE AREA | LTM | 47 | 47 | 47 | 48 | 67 | | | | | 256 | Five Year Review; Monitoring, System Water- VOCs |
| Totals | | | 47 | 47 | 47 | 48 | 67 | | | | | 256 | |

Programmed Cost- to- Complete

| SITE ID | SITE NAME | Phase | Start Date | End Date | FY08 | FY09 | FY10 | FY11 | FY12 | FY13 | FY14 | | Out Yrs | Site Total | Description of Work |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FTSTY-06 | LARC 60 MAINTENANCE AREA | LTM | 200808 | 201208 | 47 | 47 | 47 | 48 | 67 | | | | | 256 | Five Year Review; Monitoring, System Water-VOCs |
| Totals | | | | | 47 | 47 | 47 | 48 | 67 | | | | | 256 | |

# FORT STORY

## Army Defense Environmental Restoration Program
## Military Munitions Response Program

# MMRP Summary

Installation Total Army Environmental Database- Restoration (AEDB- R) Sites/RC Sites: 1/0

Installation Site Types with Future and/or Underway Phases

1 Small Arms Range

(STORY- 001- R- 01)

Most Widespread Contaminants of Concern

Metals

Media of Concern

Soil

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

| Site ID | Site Name | Action | Remedy | FY | Cost |
|---|---|---|---|---|---|
| N/A | | | | | |

Total Environmental Restoration, Army (ER,A) Funding

Prior Funding: $.0 K

Current Requirements: $141.6 K

Future Requirements: $631.0 K

Duration of MMRP

Date of MMRP Inception: 200111

Estimated Date for Remedy- In- Place (RIP)/Response Complete (RC): 201709/201709

Date of MMRP completion including Long Term Management (LTM): 201709

# MMRP Contamination Assessment

## Contamination Assessment Overview

The Department of Defense (DoD) has established the MMRP under Defense Environmental Restoration Program (DERP) to address DoD sites with munitions and explosives of concern (MEC) including unexploded ordnance (UXO), discarded military munitions (DMM), and munitions constituents (MC).

The United States (US) Army's (Army) inventory of Closed, Transferring, and Transferred (CTT) Military ranges and sites, has identified sites eligible for action under MMRP.

The MMRP eligible sites include other than operational ranges where UXO, DMM and MC is known or suspected and the release occurred prior to September 30, 2002. Properties classified as operational ranges are not eligible and, therefore, are excluded from the MMRP program.

The MMRP began in the 1990s as a result of key drivers such as processes outlined in the National Contingency Plan (40 CFR 300) as authorized by the Comprehensive Environmental Response, Liability Act of 1980, 42 US Code (U.S.C.) 9605, as amended by the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99- 499, (hereinafter CERCLA).

The process began with three phases of range inventories. Phase 1 consisted of installations completing an initial data call. USAEC managed the implementation Phases 2 and 3 of the MMRP inventory.

The Phase 2 inventory dealt with active and inactive range considerations. The Phase 3 Army Range Inventory was completed at Fort Story in May 2003. The inventory identified one site as eligible for the MMRP. The Phase 3 inventory serves as the PA under CERCLA. A SI is scheduled to begin in October 2006.

## Cleanup Exit Strategy

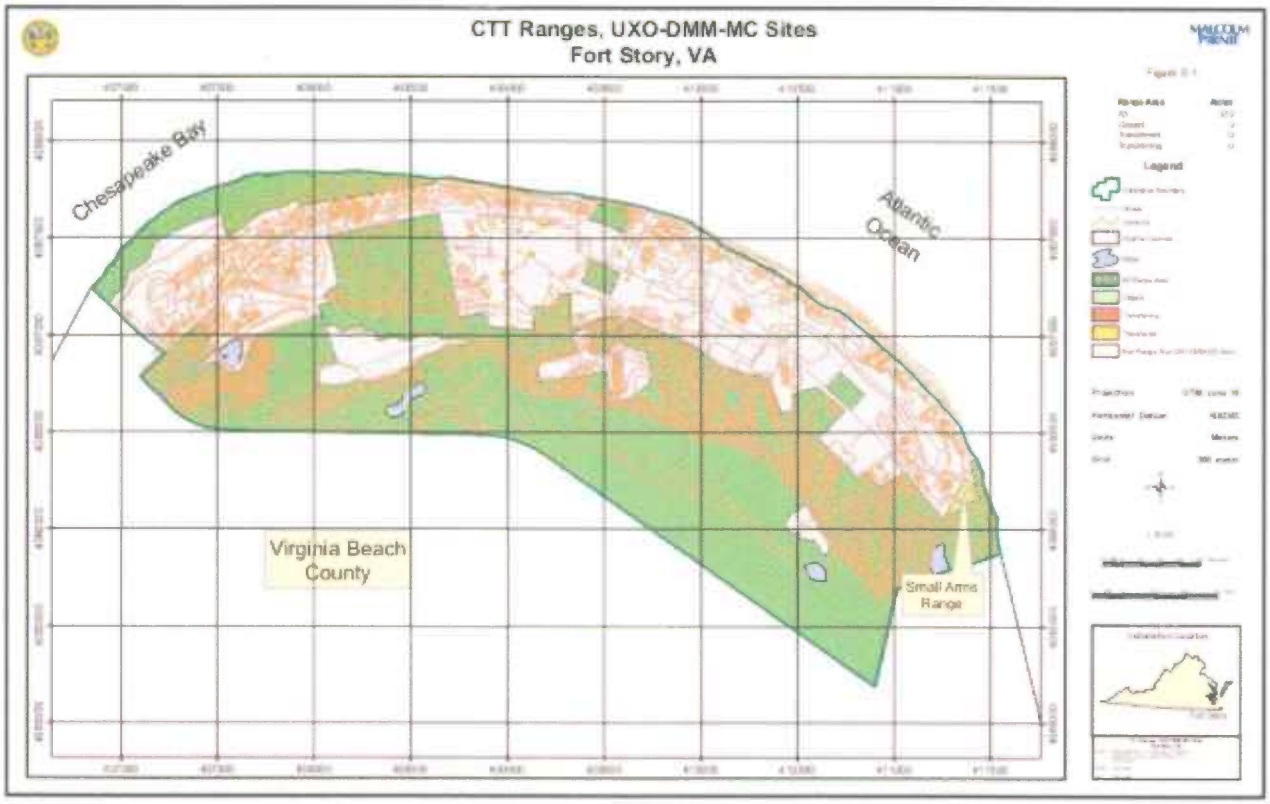
The installation plans to complete the SI in 2008 and execute follow- on phases/actions as required in the site cleanup strategy.

# MMRP Previous Studies

| | Title | Author | Date |
|---|---|---|---|
| 2002 | Final CTT Range/Site Inventory Report, Fort Story, Virginia | Malcolm Pirnie | AUG- 2002 |

# MMRP Installation Map(s)

Fort Story MMRP Sites



# FORT STORY

## Military Munitions Response Program

## Site Descriptions

# STORY- 001- R- 01
# SMALL ARMS RANGE

## STATUS

Regulatory Driver: CERCLA

MRSPP Score: Evaluation pending

Contaminants of Concern: Metals

Media of Concern: Soil

| Phases | Start | End |
|---|---|---|
| PA | 200111 | 200305 |
| SI | 200703 | 200809 |
| RI/FS | 201410 | 201509 |
| RD | 201510 | 201609 |
| RA(C) | 201610 | 201709 |

RIP Date: N/A

RC Date: 201709

## SITE DESCRIPTION

The Small Arms Range was established during the early 1940s for rifle and pistol training. The range covered approx. five acres. However, only three acres are included in the CTT inventory because the remainder is classifiend as A/I range. The Small Arms Range is located roughly 800 feet northeast of the installation's east entrance. The range has sixteen firing points that fired northeast toward the water.

## CLEANUP/EXIT STRATEGY

Army and DoD experience indicates that contamination on small arms ranges is primarily lead in soils and that remediation of these sites would primarily consist of excavation, off- site transportation, stabilization, and disposal. No MEC components would be expected at small arms ranges; therefore, they are not included in the estimate. Although the types of small arms ranges and patterns of contamination can vary, assumptions for this cost- to- complete estimate were based on the characteristics of a typical pistol and/or rifle MMRP range.

# Response Complete (No Further Action) Summary

| Site ID | Site Name | NFA Date | Documentation |
|---|---|---|---|
| There are no NFA sites | | | |

# MMRP Schedule

Date of MMRP Inception: 200111

Past Phase Completion Milestones

2003

PA (STORY- 001- R- 01 - SMALL ARMS RANGE)

Projected Phase Completion Milestones

See attached schedule

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

To Be Determined

Final RA(C) Completion Date: 201709

NPL Deletion Date: N/A

Schedule for Next Five- Year Review: N/A

Estimated Completion Date of MMRP at Installation (including LTM phase): 201709

# FORT STORY MMRP Schedule

= phase underway

| SITE ID | SITE NAME | PHASE | FY08 | FY09 | FY10 | FY11 | FY12 | FY13+ |
|---|---|---|---|---|---|---|---|---|
| STORY- 001- R-01 | SMALL ARMS RANGE | PA | | | | | | |
| | | SI | | | | | | |
| | | RI/FS | | | | | | |
| | | RD | | | | | | |
| | | RA(C) | | | | | | |

## MMRP Costs

Total Funding through FY 2004: $25.0 K

Prior Funding

| FY | Phase | Site ID | Obligations | FY Total |
|---|---|---|---|---|

TOTAL PRIOR FUNDING: $.0 K

Current Requirements

| FY | Phase | Site ID | Requirements | FY Total |
|---|---|---|---|---|
| 2007 | SI | STORY- 001- R- 01 | $141.6 K | $141.6 K |

TOTAL CURRENT REQUIREMENTS: $141.6 K

TOTAL FUTURE REQUIREMENTS: $631.0 K

TOTAL PROGRAM COST: $772.6 K

Required Cost- to- Complete

| SITE ID | SITE NAME | Phase | FY08 | FY09 | FY10 | FY11 | FY12 | FY13 | FY14 | | Out Yrs | Site Total | Description of Work |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STORY- 001- R- 01 | SMALL ARMS RANGE | RI/FS | | | | | | | | | 517 | 517 | Feasibility Study; Groundwater Monitoring Well, Unconsolidated; Remedial Investigation |
| | | RD | | | | | | | | | 4 | 4 | Remedial Design |
| | | RA(C) | | | | | | | | | 110 | 110 | Off- site Transportation and Landfill Disposal, Hazardous Solids with Stabilization; Excavation, No Sidewall Protection |
| Totals | | | | | | | | | | | 631 | 631 | |

Programmed Cost- to- Complete

| SITE ID | SITE NAME | Phase | Start Date | End Date | FY08 | FY09 | FY10 | FY11 | FY12 | FY13 | FY14 | | Out Yrs | Site Total | Description of Work |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STORY-001- R-01 | SMALL ARMS RANGE | RI/FS | 201410 | 201509 | | | | | | | | | 517 | 517 | Feasibility Study; Groundwater Monitoring Well, Unconsolidated; Remedial Investigation |
| | | RD | 201510 | 201609 | | | | | | | | | 4 | 4 | Remedial Design |
| | | RA(C) | 201610 | 201709 | | | | | | | | | 110 | 110 | Off- site Transportation and Landfill Disposal, Hazardous Solids with Stabilization; Excavation, No Sidewall Protection |
| Totals | | | | | | | | | | | | | 631 | 631 | |

# Community Involvement

Technical Review Committee (TRC): None

Restoration Advisory Board (RAB): No

Reason Not Established: Lack of outstanding cleanup issues or activities does not warrant establishment of a RAB.

Community Involvement Plan (Date Published):

Additional Community Involvement Information

Fort Story is not on the NPL. All restoration activities are coordinated with VDEQ. They review scope of services before contracts are award for investigations. This ensures all aspects including sampling analysis are covered. This coordination reduces the likely hood of additional sampling or change orders after a contact has been awarded.

The surrounding community of Virginia Beach or the VDEQ has not expressed interest in establishing a TRC or RAB. There have been no efforts by Fort Story in soliciting interest because of the very limited restoration activities at the post.

Administrative Record is located at

Fort Eustis Environmental Office

Information Repository is located at

Fort Eustis Groninger Library: Bldg 1313 Washington Blvd
Grissom Library: 366 DeShazor Drive, Newport News, VA

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

TAPP Title: N/A

Potential TAPP: There is no interest in the TAPP Program.