

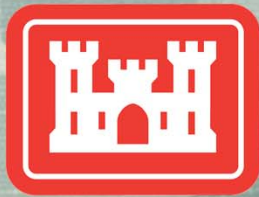
Former Camp Croft Public Meeting

Shawn Boone

Project Manager

U.S. Army Corps of Engineers,
Charleston District

November 15, 2011



US Army Corps of Engineers
BUILDING STRONG



Agenda

- Project Overview and Introduction
- Regulatory Oversight – DHEC
- Project Goals and Safety – USACE, Huntsville Engineering Center
- Investigation Methods – Zapata Engineering
- Rights of Entry – USACE



History

The infantry replacement Training Center in Spartanburg, South Carolina was activated on January 10, 1941. It was a training facility for all phases of combat and encompassed approximately 19,000 acres.



By July 1945, nearly 200,000 men had trained at the facility named “Camp Croft.”

In 1947, the camp was declared excess to the War Assets Administration, and parcels of the land were disposed of by sale or quitclaim to organizations, business interests, and former owners.



FUDS Program

- Congress established the Formerly Used Defense Sites (FUDS) Program in 1986.
- US Army Corps of Engineers manages the FUDS Program for Department of Defense (DoD).



FUDS Program

- Formerly Used Defense Sites
FUDS are properties that were formerly owned, leased, possessed by, or otherwise under the operational control of the DoD or military prior to October 1986.
- Locate sites through real estate research
 - ▶ Establish use through historical search, including archives searches and aerial photo analysis
 - ▶ Visual site inspections
- Prioritize sites for project execution



FUDS Site Inventory (Nationwide)

POTENTIAL PROJECT SITES

- Hazardous, Toxic and Radiological Waste (HTRW) ~5,000
- Containerized HTRW ~2,000
- Munitions and Explosives of Concern ~2,000
- Building Demolition/Debris Removal ~500



Munitions and Explosives of Concern (MEC)

Our focus is minimizing the safety hazards from MEC remaining at this FUDS site.

MEC and UXO:

- MEC consists of munitions and explosives, including fired and/or discarded items, explosive filler, etc.
- UXO is defined as *unexploded ordnance*
- UXO is a *subset of MEC*



Former Camp Croft Project Delivery Team

US Army Corps of Engineers, Charleston District

South Carolina Department of Health and Environmental Control

US Army Corps of Engineers, Huntsville Engineering and Support
Center

Zapata Incorporated

US Army Corps of Engineers, Savannah District

The Restoration Advisory Board and the General Public



Stakeholder Involvement

Stakeholders provide input throughout the project:

- Voice community concerns
- Participate on the Restoration Advisory Board (RAB)/attend RAB meetings
- Review and give input on technical reports

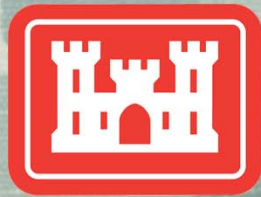


DHEC's Role at Camp Croft FUDs

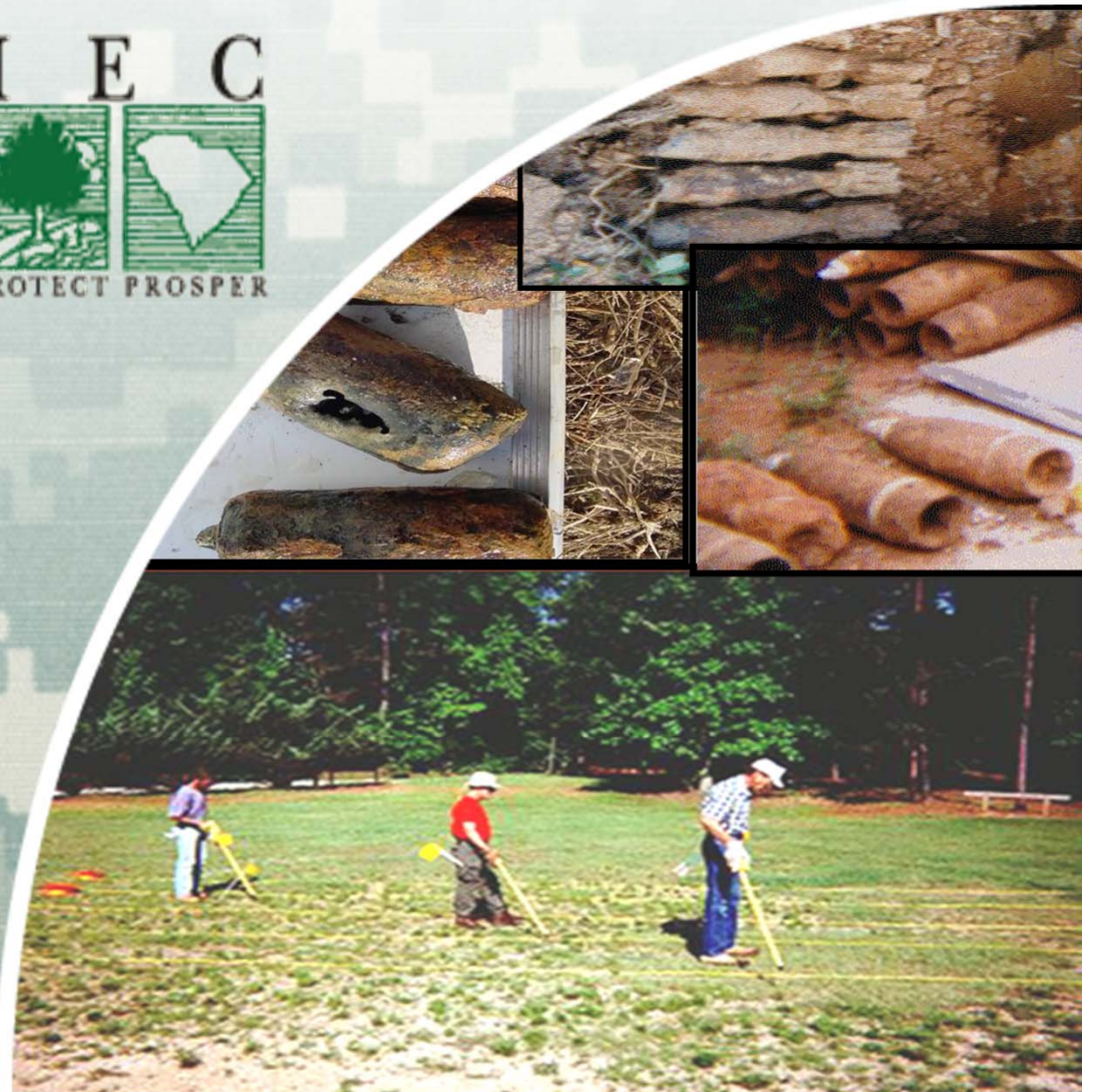
Susan Byrd

DHEC FUDs Project Manager

November 15, 2011



US Army Corps of Engineers
BUILDING STRONG



DHEC is working jointly with the Corps of Engineers

- Partnering Team Approach
- DHEC meets regularly with USACE to discuss all Formerly Used Defense Sites in SC such as Camp Croft



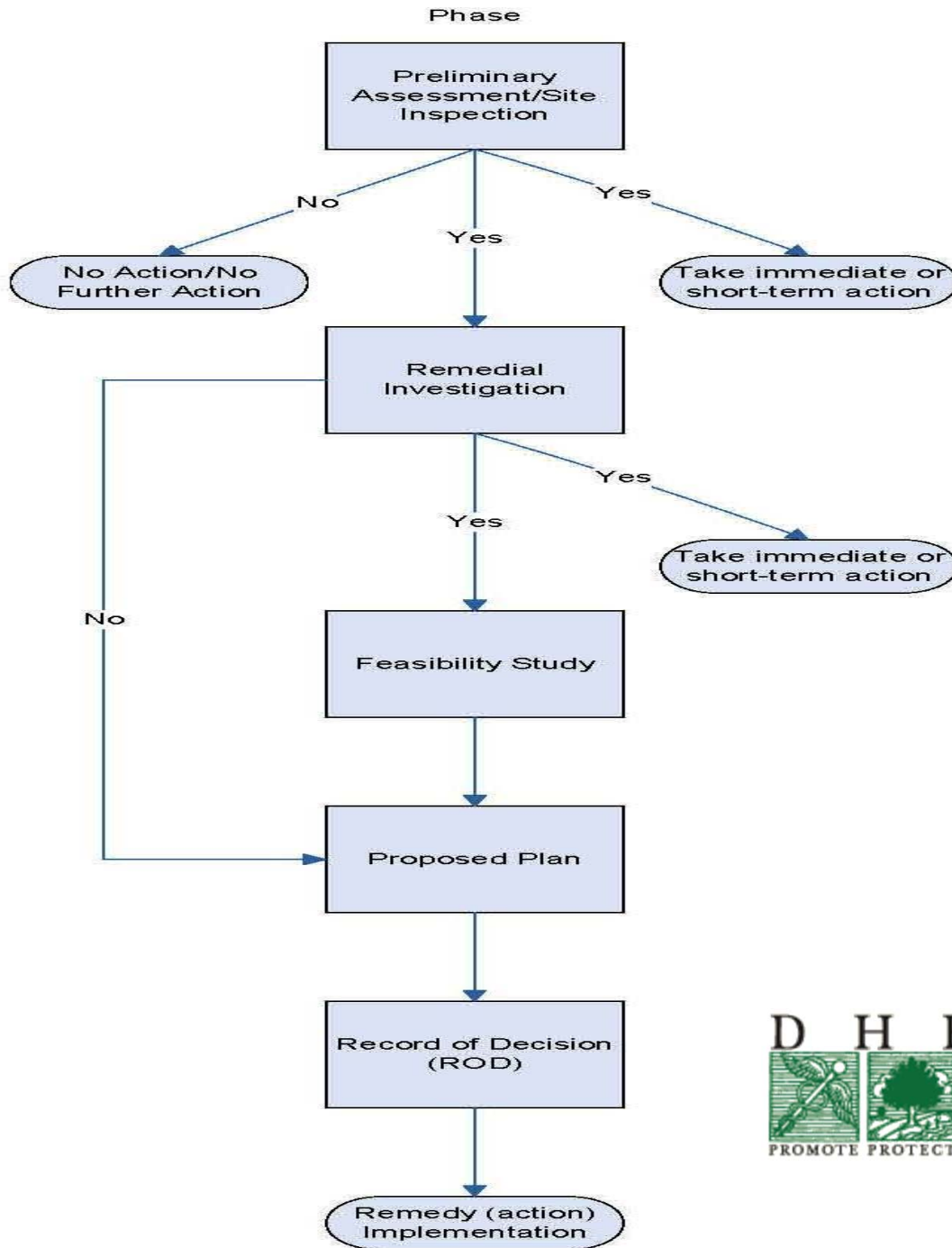
- DHEC provides input to assessments and cleanups based on available funding
- Reviews and provides input on contractor documents to ensure they meet State and Federal Cleanup Regulations



Regulation we use is CERCLA

- Also known as Superfund
- EPA Guidance





- DHEC provides specific input into sample locations and investigation details
- Ensures the final remedy is appropriate for land use such as residential, commercial, or industrial



- DHEC often meets with the public and participates in public meetings
- Available to answer questions and relay information to the Corp
- DHEC has a Regional Office in Spartanburg that can assist when needed



Contact DHEC

Susan Byrd
2600 Bull St
Columbia, SC 29201
(803)896-4188

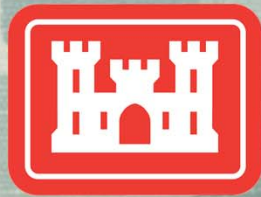


Former Camp Croft Project Goals & Public Safety

Teresa Carpenter

Camp Croft Public Meeting

15 November 2011



US Army Corps of Engineers
BUILDING STRONG



Former Camp Croft

- The infantry replacement Training Center in Spartanburg, South Carolina was activated on January 10, 1941. It was a training facility for all phases of combat and encompassed approximately 19,000 acres.
- By July 1945, nearly 200,000 men had trained at the facility named “Camp Croft.”
- In 1947, the camp was declared excess to the War Assets Administration, and parcels of the land were disposed of by sale or quitclaim to organizations, business interests, and former owners.



Former Camp Croft Project Goals

- The Primary Objective of this phase of work is to achieve acceptance of a Decision Document.

- Steps to get to a Final Decision document:
 - ▶ Remedial Investigation and Report
 - ▶ Feasibility Study Report
 - ▶ Proposed Plan
 - ▶ Decision Document



Former Camp Croft

Remedial Investigation and Feasibility Study

RI/FS

- Remedial Investigation
 - ▶ Characterize Nature and Extent of both MEC and MC at the Former Camp Croft.
 - ▶ Definitions
 - MEC- Munitions and Explosives of Concern
 - ▷ UXO
 - ▷ DMM
 - ▷ MC
 - MC- Munitions Constituents
 - MD- Munitions Debris



Remedial Investigation

- ▶ Nature- MEC and MC present
 - Identifies the type of MEC/MC remaining at the site from historic DoD use.
- ▶ Extent- Lateral and Vertical
 - Lateral - identifies the surface size of the area contaminated with MEC/MC
 - Extent - identifies to what depth the contamination (MEC/MC) is present.
- ▶ RI Report
 - The report will identify areas, if any, with a risk (MC) or hazard (MEC) to human health and the environment.



Feasibility Study

- Develops a range of potential response alternatives to manage the MEC/MC hazards and risks identified in the RI Report, and analyzes those alternatives against nine criteria.
 - Overall Protection of Human Health and the Environment.
 - Compliance with Applicable Relevant and Appropriate Requirements.
 - Long-term effectiveness
 - Reduction of toxicity, mobility or volume through treatment.
 - Short term effectiveness
 - Implementability
 - Cost
 - State Regulator Acceptance
 - Community Acceptance



Proposed Plan

- Summarizes the recommended alternatives from the Feasibility Study and proposes the most appropriate alternative.
- Public review and comment period of 30 days is required.
 - ▶ Comments from the public are incorporated where necessary and the Proposed Plan is finalized.



Decision Document

- After the Proposed Plan has been finalized a Decision Document will be submitted finalizing the alternatives selected in the Proposed Plan.
- The district will then implement the selected remedy as funds become available.



SAFETY

It takes qualified, highly trained personnel to determine if an item is UXO, MEC or MD!



60MM Practice Mortar
MEC



Munitions Debris



BUILDING STRONG®

UXO Safety Procedures

The Three R's

Recognize

- Recognize when you may have encountered a munition.

Retreat

- Do not touch, move or disturb it, but carefully leave the area the way you entered.

Report

- Call 911! Immediately notify local law enforcement of what you saw and where you saw it.



SAFETY



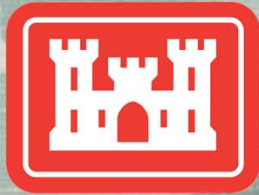
CALL 911



Investigative Methods

Jason Shiftlet

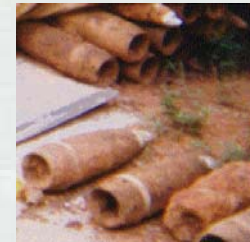
Director of Operations, MRS/ECRS Division
Zapata Incorporated



US Army Corps of Engineers
BUILDING STRONG

Investigation Methods

- Munitions and Explosives of Concern (MEC) is defined as:
 - ▶ Unexploded ordnance (UXO)
 - *10 U.S.C. 101(e)(5)*
 - ▶ Discarded military munitions (DMM)
 - *10 U.S.C. 2710(e)(2)*
 - ▶ Munitions constituents (MC) – at conc. high enough to pose an explosive hazard
 - *10 U.S.C. 2710(e)(3)*



Investigation Methods

- Munitions Debris (MD)
 - ▶ Remnants of munitions remaining after use, demilitarization, or disposal
 - Fragments
 - Penetrators
 - Projectiles
 - Casings
 - Links
 - Fins



Investigation Methods

- Munitions constituents (MC)
 - ▶ e.g., TNT or RDX
- Any material originating from UXO, DMM, or other military munitions, including:
 - ▶ explosive and non-explosive material, and
 - ▶ emission, degradation, or breakdown elements.



Investigation Methods

- Investigation must meet project-specific Data Quality Objectives (DQOs)
- DQOs are statements that define the;
 - ▶ quality, quantity and type of data required,
 - ▶ data collection method, and
 - ▶ acceptance criteria for those data.



Investigation Methods

- Investigative methods depend on;
 - ▶ Project goals,
 - ▶ Suspected munitions items,
 - ▶ Site conditions (present/future), and
 - ▶ Stakeholder input.
- Munitions items are generally;
 - ▶ Solid metallic material, and/or
 - ▶ Chemicals (concentrated or diffuse)



Investigation Methods

- Two primary “munitions” categories
 - ▶ Solid metallic material (potential MEC)
 - Digital data vs. Analog data
 - Intrusive investigation
 - ▶ Chemicals (MC)
 - Media sampling (soil, sediment, water)
 - Laboratory analysis



Investigation Methods

- Primary MEC investigative methods
 - ▶ DGM - Digital Geophysical Mapping
 - ▶ AIR - Analog Instrument-assisted Reconnaissance
 - ▶ Mag-and-Dig - Analog Instrument-assisted Intrusive Investigation



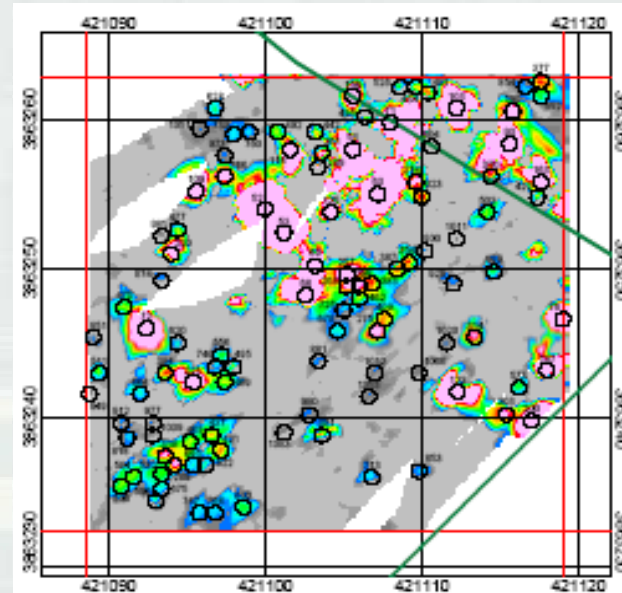
Investigation Methods

- Possible MEC Investigation Methods
 - ▶ Nearly 100% Coverage
 - An entire area is surveyed
 - May require significant brush/tree removal
 - ▶ Transects (~1m wide)
 - Roughly evenly-spaced parallel pathways
 - Transect spacing varies; less invasive
 - ▶ Meandering path (~1m wide)
 - Path of least resistance
 - Misses areas difficult to access



Investigation Methods

- Digital Geophysical Mapping (DGM)
 - ▶ Data are digitally recorded and analyzed



Investigation Methods

- Analog Instrument-assisted Surveys
 - ▶ Audible signal indicates metallic item
 - ▶ AIR – audible signals are only counted
 - ▶ Mag-and-Dig – audible signals are intrusively investigated.



Investigation Methods

- Investigation Problem Statement:
 - ▶ Determine the nature and extent of munitions and explosives of concern (MEC) within each MRS and AoPI.



Investigation Methods

- At the Former Camp Croft, each MRS and AoPI was evaluated independently.
- Areas of investigation were selected based on;
 - ▶ Historical documents,
 - ▶ Available technology,
 - ▶ Site condition,
 - ▶ Land use, and
 - ▶ Professional judgment.



Investigation Methods

- Transect spacing determined using statistical software (VSP)
 - ▶ VSP allows us to balance risk and error
- VSP inputs based on explosive items we're likely to encounter, based on site experience and professional judgment
 - ▶ MKII grenade
 - ▶ Rifle grenade
 - ▶ 60mm Mortar

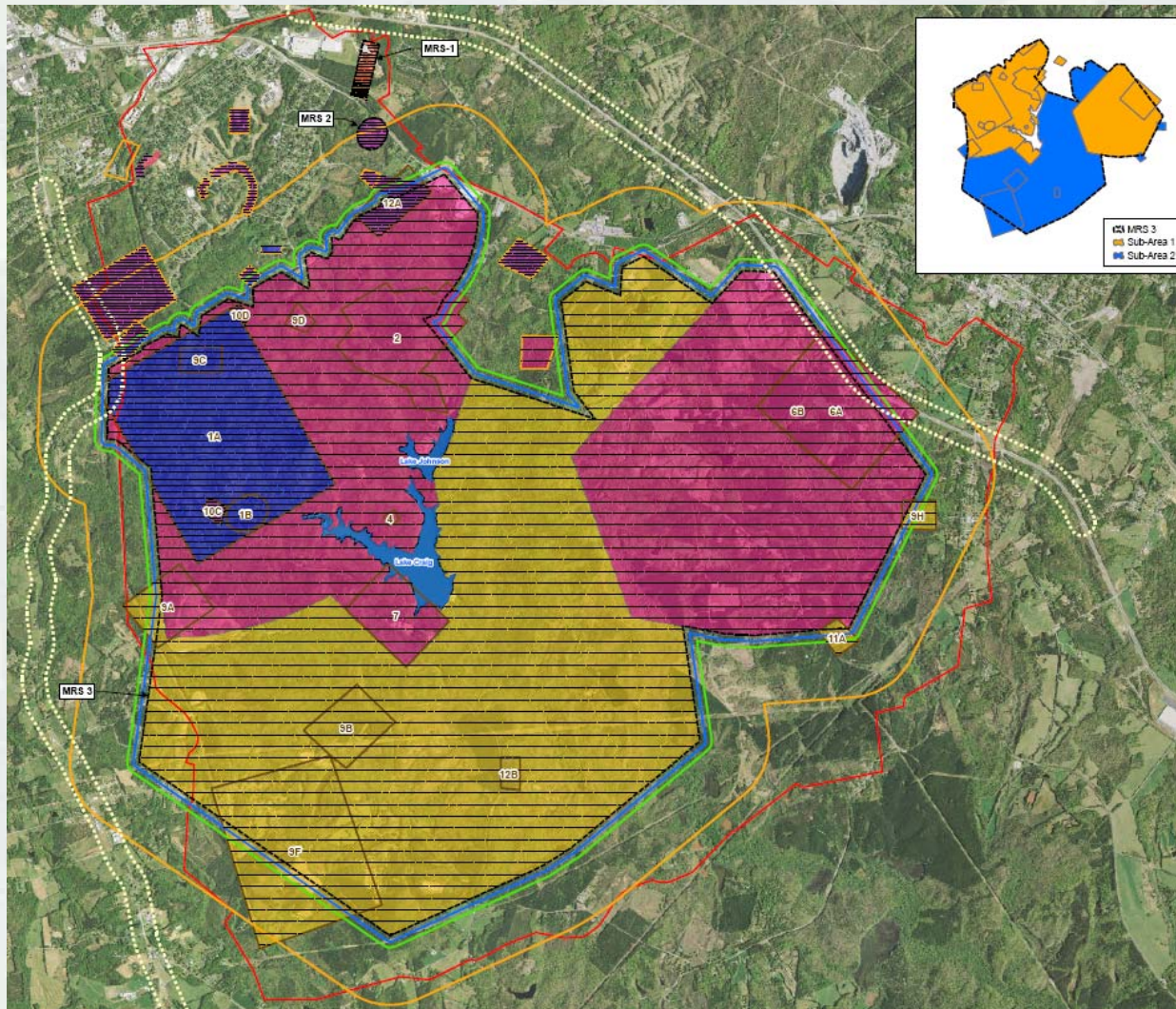


Investigation Methods

- Our approach generally follows;
 - ▶ Transects set at various spacings
 - AIR for anomaly density and surface MEC type
 - Mag-and-Dig for anomaly density and MEC type
 - ▶ Grids placed in high, medium and low density areas
 - Mag-and-Dig grids at AIR transects
 - DGM grids at Mag-and-Dig transects
 - ▶ MC samples from areas with high anomaly density concentrations



Investigation Methods



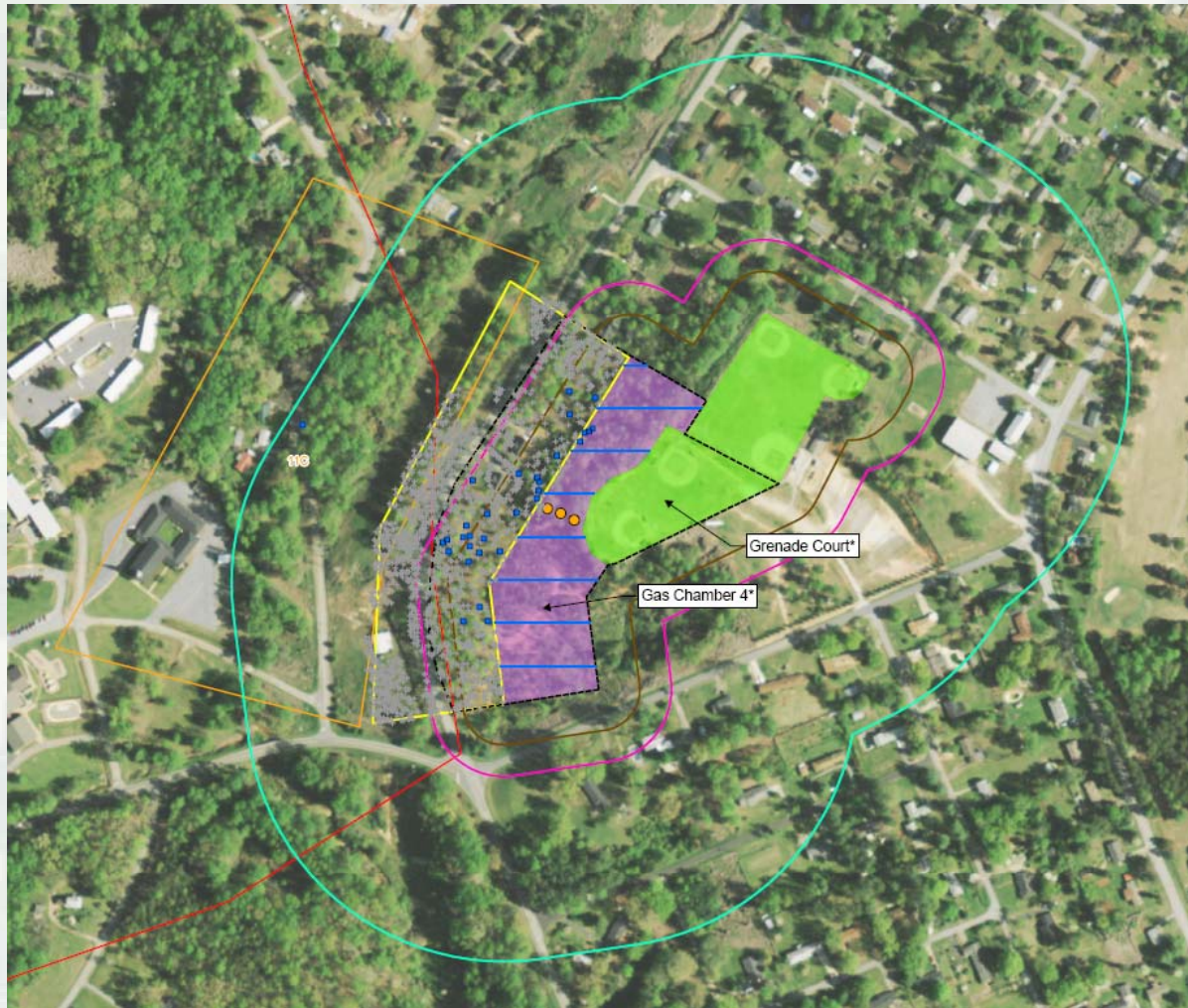
KEY

- Transects
- Buffer* (450 ft)
- 450 ft HFD (Unintentional Detonation)
155mm M107, Comp. B filled
- 2,630 ft MFD (Intentional Detonation)
155mm M107, Comp. B filled
- 220 ft MSD (Intentional Detonation,
Mitigated with Sandbags),
155mm M107 Comp. B filled
- Former OOU
- MRS
- Areas of Potential Interest
- Approximate Former Camp Croft Boundary
- Lake
- Trash Pile - No Investigation
- DGM (100%)
- AIR (16.24m Transect Spacing)
- AIR (36m Transect Spacing)
- AIR (135m Transect Spacing)
- Mag & Dig (36m Transect Spacing)
- Mag & Dig (73m Transect Spacing)
- Mag & Dig (135m Transect Spacing)

* Buffer is based upon the greater of the HFD or MSD. No intrusive operations will be conducted in the buffer zone.



Investigation Methods



Work Plans for the Remedial Investigation/Feasibility Study Former Camp Croft, Spartanburg, SC Area of Potential Interest 11C		
Project Number	Date	Exhibit
00017	SEPTEMBER 2011	10

KEY

- + CD
- MD
- ~ Transsects
- Fosholes (Observed During Site Visit)
- 113 ft HFD (Unintentional Detonation) M9A1 Rifle Grenade
- 709 ft MFD (Intentional Detonation) M9A1 Rifle Grenade
- 200 ft MSD (Intentional Detonation, Mitigated with Sandbags)
- ZARATA-revised OOU 11C Boundary
- Removal Action OOU 11C Boundary
- Areas of Potential Interest
- Approximate Former Camp Croft Boundary
- <all other values>

N
W — E
S

0 150 300 Feet



Investigation Methods

- The Project team will evaluate the data collected from transects.
- Transect data will provide;
 - ▶ The extent of MEC concentration,
 - ▶ Likely target or firing point locations,
 - ▶ A basis for more detailed grid (50 ft by 50 ft) investigation, and
 - ▶ A basis for selecting MC sampling locations.



Investigation Methods

- MEC investigation in grids
 - ▶ Grids will generally be 50 ft by 50 ft.
 - ▶ Grids will be 100% inspected.
 - ▶ Grids will be evaluated by
 - DGM, or
 - Mag-and-Dig.
- Grid data will be used to refine nature of MEC.



Investigation Methods

- Munitions Constituents (MC) Sampling
 - ▶ Soil, sediment, and water are sent to labs



Investigation Methods

- MC samples will be collected in areas with high anomaly densities (>97%).
- MC samples are often analyzed for;
 - ▶ Explosives, including PETN and NG
 - ▶ Select metals (Copper, Antimony, Lead, Zinc)
 - ▶ White phosphorus (if necessary)



Investigation Methods

- MC Quality Control/Assurance (QC/QA)
 - ▶ QC Duplicates – 1:10
 - ▶ QA Splits – 1:10
 - ▶ MS/MSD – 1:20
 - ▶ Equipment rinstate – 1 per day per matrix
 - ▶ Temperature blanks – 1 per cooler
- Analytical data are evaluated by a third-party independent contractor



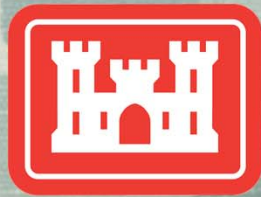
Investigation Methods

- Risk Assessments
- MEC Hazard Analysis (MEC HA)
 - ▶ Severity, Accessibility, and Sensitivity
- Human Health Risk Assessment (MC)
 - ▶ Data compared to current EPA RSLs
- Ecological Risk Assessment (MC)
 - ▶ Data compared to current EPA Eco-SSLs



Right of Entry

Michael Bauman
Real Estate Division
USACE Savannah District



US Army Corps of Engineers
BUILDING STRONG



Right of Entry

DEPARTMENT OF THE ARMY
RIGHT OF ENTRY FOR
ENVIRONMENTAL ASSESSMENT AND RESPONSE

Former Camp Croft Project, SC
Project No. I04SC001603
(Project, Installation or Activity)

DACA21-9-12-
(ROE Contract No)

(Agent/Owner(s) Name and Address)

(Location of Property/Parcels)

The undersigned, herein called the "Owner", in consideration for the mutual benefits of the work described below, hereby grants to the UNITED STATES OF AMERICA, hereinafter called the "Government", a right-of-entry upon the following terms and conditions:

1. The Owner hereby grants to the Government an irrevocable and assignable right to enter in, on, over and across the land described on the attached marked Exhibit "A", for a period not to exceed twenty-four months (24) months, beginning with the date of the fieldwork scheduled for this project terminating with the earlier completion of the remediation or the filing of a notice of termination in the local land records by the representative of the United States in charge of the Former Camp Croft Military Installation Project, South Carolina, for use by the United States, its representatives, agents, contractors and assigns, as a work area for environmental investigation and response; including the right to store, move, and remove equipment and supplies; investigate collect samples; excavate and remove ordnance and explosive waste, pollutants, hazardous substances, contaminated soil, containerized waste, and replace with uncontaminated soil; dispose of ordnance and explosive waste by detonation and response on said lands; subject to existing easements for public roads and highways, public utilities, railroads and pipelines; reserving, however, to the landowner(s), their heirs, executors, administrators, successors and assigns, all such right, title, interest and privilege as may be used and enjoyed without interfering with or abridging the rights and right-of-entry hereby acquired.

2. The owner agrees to provide The United States of America and its assigned contractor's reasonable access to the above property, depicted on the attached Exhibit "A", subject to and in consideration of the following conditions, limitations and covenants.

3. All tools, equipment, and other property taken upon or placed upon the described land by the Government shall remain the property of the Government and may be removed by the Government at any time within a reasonable period prior to the expiration of this permit or right-of-entry.

4. If any action of the Government's employees or agents in the exercise of this right-of-entry result in damage to the real property, the Government will, in its sole discretion, either repair such damage or make an appropriate settlement with the owner. In no event shall such repair or settlement exceed the fair market value of the fee title to the real property at the time immediately preceding such damage. The Government's liability under this clause is subject to the availability of appropriations for such payment, and nothing contained in this agreement may be considered as implying that Congress will at a later date appropriate funds sufficient to meet any deficiencies. The provisions of this clause are without prejudice to any rights the Owner may have to make a claim under applicable laws for any damages other than those provided for herein.

5. The land subject to this right-of-entry is located in the County of Spartanburg, State of South Carolina, is particularly described as follows: Tax Map Number per attached Exhibit A.

WITNESS MY HAND AND SEAL THIS ____ day of _____, 2011

(Print Owner(s) Name(s))

(Sign Owner(s) Name(s))

UNITED STATES OF AMERICA

By _____

Right of Entry

- The document will not be recorded.
- The Government can not except “Verbal Agreements”
- The document protects the landowner and grants the Government access to perform the work.



Right of Entry

- Stephen Bruce – Realty Specialist

Stephen.w.bruce@usace.army.mil

912-652-5201

- Michael Bauman – Realty Specialist

Michael.p.bauman@usace.army.mil

912-652-5904

USACE – Savannah District

PO Box 889

100 W Oglethorpe Ave

Savannah, GA 31402



SAFETY



CALL 911

