



**US Army Corps
of Engineers®**
New York District

**Former Raritan Arsenal; Edison, New Jersey
Formerly Used Defense Site (FUDS)**

**Public Information Meeting
25 September 2013
Edison Municipal Complex • Edison Room (3rd Floor)
100 Municipal Boulevard • Edison, New Jersey**

Meeting Summary

Introduction

The meeting began at 7:10 pm. One member of the public and one local official attended the meeting. Ms. Sandra Piettro of the U.S. Army Corps of Engineers (USACE) welcomed everyone.

Ms. Piettro described the agenda for the evening's meeting, which included information on site history, an overview of recent site activity in Operable (Decision) Units and Areas, Site-wide Remedial Investigation/Feasibility Study, Fiscal Year (FY) 2013 milestones, FY 2014 planned activities, and funding.

Presentation/Site History

Ms. Piettro started her presentation by reviewing the history and mission of the Raritan Arsenal from 1917-1963. The arsenal was used for shipping and storage of ordnance material; providing general supplies to other arsenals and military facilities; and storing, modifying, and shipping military vehicles. It was closed in 1964 and most of the property was sold to private developers. The General Services Administration and Middlesex County retained 840 acres.

Presentation/Project Status

Ms. Piettro summarized the status of the six Operable (Decision) Units that are being addressed at the former Raritan Arsenal (see Attachment 1).

Site-wide Groundwater/ Indoor Air / Vapor Intrusion: The Feasibility Study (FS) is undergoing USACE review and will be submitted for NJDEP review in September 2013.

Monitoring continues for ongoing natural attenuation at six Groundwater Areas of Concern (AOCs 2, 4, 6, 8, 9 & 10). Monitored natural attenuation has shown decreasing contamination levels. With NJDEP concurrence, four AOCs (1, 3, 5 & 7) have been dropped from long term monitoring—no further action is required.

Monitoring continues for vapor mitigation systems in six industrial buildings and results are documented in annual reports; report #9 is being generated for submittal to NJDEP.



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Middlesex County College Property: The Remedial Investigation (RI) report was submitted to NJDEP for review in December 2012. NJDEP comments have been received and USACE is preparing responses to comments.

Thomas Edison Park: This area is being addressed under the Site-Wide RI/FS. Field investigation work will start October 2013, in the fenced enclosed portion of Area 10 (Part I). No additional work is needed in Areas 9 and 19.

Commercial/Industrial Area (Raritan Business Center): the Revised Draft RI report for USACE review is expected in winter 2013.

Area 5 (former Chemical Warfare Material Site): Additional field investigation work was completed in April 2013. The Draft RI report was submitted for USACE's review in September 2013. It will be submitted for NJDEP review in spring 2014.

EPA/GSA Property: A revised Draft RI report will be submitted for USACE's review in winter 2013. Additional samples are to be collected within Area 18A & 18B. The RI will be submitted for NJDEP review in spring 2014. Area 18D will be addressed separately under the Site-Wide RI/FS.

Undeveloped Wetlands Area: The Revised Draft RI Work Plan has been reviewed by USACE and was submitted to NJDEP in July 2013; the work plan documents and explains our field work investigations. NJDEP review will be completed in September 2013 and fieldwork will begin in late October/early November 2013.

The Site-Wide RI/FS will address Area 1, 6, 6A, 6B, 10, 10 Part I, 11, 12, 13 (Pier), 16, 18D, 9/19, the Crab islands and along the Raritan River on the Sayreville (south) side. USACE has held coordination meetings with the Mayor of the Township of Edison, various property owners, the Township of Edison emergency services (Department of Health, Office of Emergency Management (OEM), Police Department, and Fire Department), New Jersey Forest Fire Service (NJFFS), and the U.S. Coast Guard. The Coast Guard has posted a notice in the Federal Register informing the public that a Safety Zone for Military Munitions Recovery will be established along the Raritan River.

Ms. Piettro reviewed the status of FY 2013 milestones and the activities planned in FY 2014, which will include public information meetings in April 2014 and November 2014, and a Proposed Plan for public comments on the Middlesex County College property, followed by a Decision Document.



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She disclosed that to date, \$86.5 million has been spent on the Raritan cleanup (\$1.9M allocated in FY 2012, \$2M allocated in FY 2013) and the cost to complete is estimated as \$31.7 million, but that could change depending on findings of the Site-Wide RI/FS beginning this fall.

She went over the formal process for investigations and cleanup and reviewed the “3 Rs” of explosives safety: Recognize, Retreat, Report.

Additional information is available on the USACE former Raritan Arsenal webpage at www.nan.usace.army.mil/Raritan.

Presentation/Munitions Remedial Investigation (RI)

Mark Callaghan, Project Manager for CH2M HILL (USACE consultant) started his presentation with the 12 specific areas of focus for the RI and explained the three phases of investigation fieldwork (see Attachment 2).

Phase 1 will start in late October/early November 2013 and will consist of vegetation removal, surface clearance, and digital geophysical mapping of metallic objects that could be buried munitions. There is a remote possibility that a munitions item will be discovered on the surface. If it is safe to move, it would be moved to a remote location and detonated. If it is not safe to move, it will be detonated in place. With engineering controls (soil and sandbags over the item), it will not be a loud explosion.

Phase 2 will start in January 2014 and will consist of digging up selected anomalies (metallic objects) to determine if they are munitions or other metallic debris. Exclusion zones established so people don't wander into areas where munitions items might be dug up.

Phase 3 will start in June 2014 and will consist of sampling soil and analyzing for specific munitions compounds. After examining munitions, we will be able to determine what kinds of metals and explosives and analyze the samples specifically for those.

USACE is committed to investigating with utmost concern and to keeping everyone informed, and will schedule additional public meetings as needed.

Questions from Community Members and Answers Provided

(None)



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Meeting Summary


The meeting was adjourned at 7:40 pm.

Public Information Meeting


Former Raritan Arsenal

Edison, New Jersey

Sandra L. Piettro
Project Manager
USACE, New York District
25 September 2013




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Agenda

- Site History
- Operable (Decision) units
 - ▶ Site-wide Groundwater / Indoor Air
 - Groundwater Long Term Monitoring
 - Groundwater / Indoor Air / Vapor Intrusion Feasibility Study
 - Indoor Air / Vapor Mitigation Systems
 - ▶ Middlesex County College property
 - ▶ Thomas Edison Park / Area 9, 10 & 19 property
 - ▶ Commercial / Industrial Area
 - Area 5
 - ▶ USEPA / GSA property
 - ▶ Undeveloped Wetlands Area
- Site-wide Remedial Investigation / Feasibility Study
- Fiscal Year 2013* Milestones
- Fiscal Year 2014* Future Planned Activities
- Funding
- MMRP Safety Education

* FY 2013: 10/1/2012 – 9/30/2013
* FY 2014: 10/1/2013 – 9/30/2014







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Site History

- Mission of Arsenal from 1917-1963
 - shipping and storage of ordnance material;
 - general supplies to other arsenals and military facilities;
 - stored, modified, and shipped military vehicles.
- Decontamination process completed in October 1963.
- Arsenal closed 1964
- Upon disposition, Arsenal consisted of 3,234 acres, approximately 440 buildings, 2.8 million square feet.
- Site-wide network of over 62 miles of roads and railways.
- Government officials and citizens proposed an orderly conversion of property from military to civilian use.
- Group recommended two-thirds of Arsenal be targeted for future industrial use.
- In 1964, GSA sold 2,360 acres to private landowners.
- EPA/GSA, Middlesex County College and Thomas Edison Park retained 840 acres of former Arsenal property.

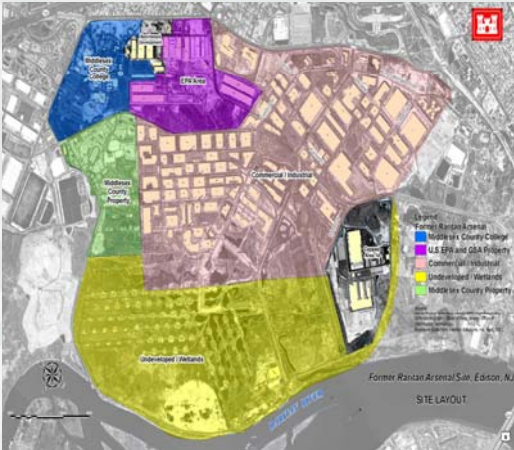





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Operable (Decision) Units




- Work at former Raritan Arsenal is organized into six (6) operable (decision) units:
 - Site-wide Groundwater/ Indoor Air / Vapor Intrusion
 - Middlesex County College property
 - Thomas Edison Park property
 - Commercial/Industrial Area
 - USEPA / GSA property
 - Undeveloped Wetlands Area
 - subject to change as remedial investigations progresses




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Groundwater



- Groundwater / Indoor Air / Vapor Intrusion – Feasibility Study
 - Evaluate the need for, and possible alternatives to address final remedial actions for the groundwater contamination at Areas of Concerns (AOCs):
 - AOCs – 2, 4A, 4B, 6A, 6B, 6C, 8A/B, 8C, 8D, 9 & 10
 - AOCs 1, 3, 5 & 7 – no further action is required
 - Status:
 - USACE’s review – pending
 - NJDEP review – fall 2013




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Groundwater Long Term Monitoring

- Status
 - Monitoring 6 Groundwater (GW) Areas of Concerns (AOCs) for natural attenuation (2, 4, 6, 8, 9 & 10)
 - ❖ Sampling schedule for monitored natural attenuation:
 - First round of sampling – Summer 2010 – completed
 - Second round of sampling – Summer 2012 – completed
 - Future sampling – Summer 2017 – every five (5) years for thirty years (until 2042)
 - ❖ Monitored natural attenuation is a technique used to monitor or test the progress of concentration of contaminants in groundwater are decreasing without human involvement.
 - Based on previous sampling results showing decreasing concentration levels:
 - NJDEP concurred – 4 GW AOCs dropped from long term monitoring (AOCs 1, 3, 5 & 7) – no further action is required

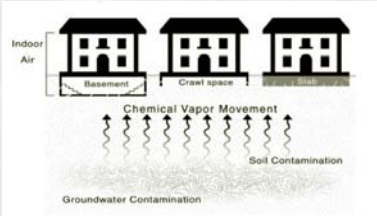


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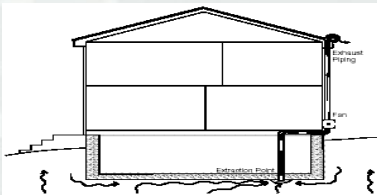
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Indoor Air / Vapor Intrusion

- What is Vapor Intrusion: volatile chemicals can evaporate from groundwater and soil and may build up in the indoor air of nearby buildings
- What is vapor mitigation system: its designed to reduce the air pressure beneath the building and keep vapors that may collect beneath the building from entering into building.
- Status:
 - Monitoring 6 industrial buildings for volatile organic compounds (VOCs) in indoor air and sub-slab soil gas
 - These results are documented in the Indoor Air Quality Reports; currently up to report #9
 - Report #9 is being generated for NJDEP submission



Subsurface Depressurization System



Middlesex County College property




- Generate a Remedial Investigation (RI) / Proposed Plan (PP) / Decision Document (DD)
 - Remedial Investigation report was submitted to NJDEP for review – December 2012;
 - NJDEP comments received; preparing response to comments;
 - Proposed Plan / Decision Document to be generated after Remedial investigation is final
 - During the Proposed Plan, USACE will present the cleanup strategy for public review & comment




Thomas Edison Park

(Area 9, 10, 19 property)




- This property is being addressed under the Site-Wide Remedial Investigation / Feasibility Study
 - Generate a Remedial Investigation (RI) / Feasibility Study (FS) / Proposed Plan (PP) / Decision Document (DD)
 - Fieldwork to commence – Fall (October) 2013
 - ❖ No field work in Area 9 & 19
 - ❖ Field work in Area 10 Part I (fenced enclosed area)




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Commercial / Industrial Area



- Generate a Remedial Investigation (RI) / Proposed Plan (PP) / Decision Document (DD)
 - Awaiting Revised Draft RI report to be review by USACE – Winter 2013;
 - NJDEP will review – Spring 2014;
 - The need for a Feasibility Study will be determined after the RI;
 - Proposed Plan / Decision Document to be generated after Remedial Investigation / Feasibility Study is final;
 - During the Proposed Plan, USACE will present the cleanup strategy for public review and comment .




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Area 5

(Former Chemical Warfare Materiel {CWM} site)



- Generate a Remedial Investigation (RI) / Proposed Plan (PP) / Decision Document (DD)
 - Work Plan & Work Plan addendum – completed April 2013;
 - NJDEP completed their review – May 2013;
 - Field investigation work – completed May 2013;
 - Draft Remedial Investigation (RI) report was submitted for USACE's review – Sept 2013;
 - RI submission to NJDEP – Spring 2014;
 - Proposed Plan / Decision Document to be generated after RI is final;
 - During the Proposed Plan, USACE will present the cleanup strategy for public review & comment.




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USEPA / GSA property

(Area 1 and 18A thru G)



- Generate a Remedial Investigation (RI) / Feasibility Study (FS) / Proposed Plan (PP) / Decision Document (DD)
 - A revised Draft Remedial Investigation report will be submitted for USACE's review – Winter 2013;
 - Additional samples are to be collected within Area 18A & 18B;
 - NJDEP review – Spring 2014;
 - Area 18D will be addressed separately under the Site-Wide Remedial Investigation / Feasibility Study.




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Undeveloped Wetlands Area

(Area 6, 6A, 6B, 11, 12, 13, 16)



- Generate a Remedial Investigation (RI) / Feasibility Study (FS) / Proposed Plan (PP) / Decision Document (DD)
 - A Revised Draft – Remedial Investigation / Feasibility Study Work Plan has been reviewed by USACE & submitted to NJDEP – July 2013;
 - Work plan documents & explains our field work investigations
 - NJDEP review – Sept 2013;
 - Field investigation work to commence – fall (October) 2013;
 - Field findings will be documented in the RI report;
 - After RI is finalized, we will develop and evaluate cleanup options within a Feasibility Study;
 - Proposed Plan / Decision Document to be generated after Remedial Investigation / Feasibility Study is approved by NJDEP and final; and
 - During the Proposed Plan, USACE will present the cleanup strategy for public review & comment.




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Site-wide Remedial Investigation / Feasibility Study

(Area 1, 6, 6A, 6B, 10, 10 Part I, 11, 12, 13 (Pier), 16, 18D, 9/19, the Crab islands and along the Raritan River at Sayreville side)



- Coordination meetings :
 - Met with the Mayor and staff members of the Township of Edison; and
 - Met with various property owners;
 - Met with Township of Edison (Dept of Health, Office of Emergency Management (OEM), NJFFS, Police Dept and Fire Dept);
 - Met with US Coast Guard (USCG)
 - USCG has posted a notice with the Federal Register informing the public that a Safety Zone; Military Munitions Recovery, is in place along the Raritan River, Raritan, NJ
 - Federal Register is a daily publication of the US federal government that issues proposed and final administrative regulations of federal agencies.



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FY 2013 Milestones

- Groundwater Compliance Monitoring Progress Report
- Ecological Risk Management Report
- Feasibility Study – Groundwater / Indoor Air (Vapor Intrusion)
- Indoor Air Quality report #7
- Indoor Air Quality report #8
- Work Plan & Work Plan Addendum: Area 5 – Remedial Investigation / Feasibility Study
- Remedial Investigation & Remedial Actions Summary Report – Middlesex County College
- Work Plan: Site-wide Remedial Investigation / Feasibility Study
- Explosives Site Plan: Site-wide Remedial Investigation / Feasibility Study
- Commence fieldwork activities at various areas
- Community Relations Plan
- Stakeholders – Working Group Meetings – April and September 2013
- Public Information Meetings – January and September 2013
- Safety Coordination Meeting with Edison and Sayreville – September 2013



FY 2014 Future Planned Activities

- Management Action Plan
- Implementation Land Use Plan
- Proposed Plan – Groundwater / Indoor Air (Vapor Intrusion) for public comments
- Annual Indoor Air Quality report #9
- Annual Indoor Air Quality report #10
- Proposed Plan – Middlesex County College for public comments
- Decision Document – Middlesex County College
- Remedial Investigation & Remedial Actions Summary Report – Thomas Edison Park
- Remedial Investigation & Remedial Actions Summary Report – Commercial / Industrial Area
- Remedial Investigation & Remedial Actions Summary Report – USEPA / GSA property
- Remedial Investigation report – Area 5
- Remedial Investigation report – Site-wide – Munitions and/or Hazardous, Toxic Waste
- Stakeholders – Working Group Meetings – March and October 2014
- Public Information Meetings – April and November 2014



Funding

■ Raritan funding:

▶ Funding spent:

\$ 86.5 M

▶ Allocated, 2012:

\$1.9 M


▶ Allocated, 2013:

\$ 2 M

▶ Cost to Complete:

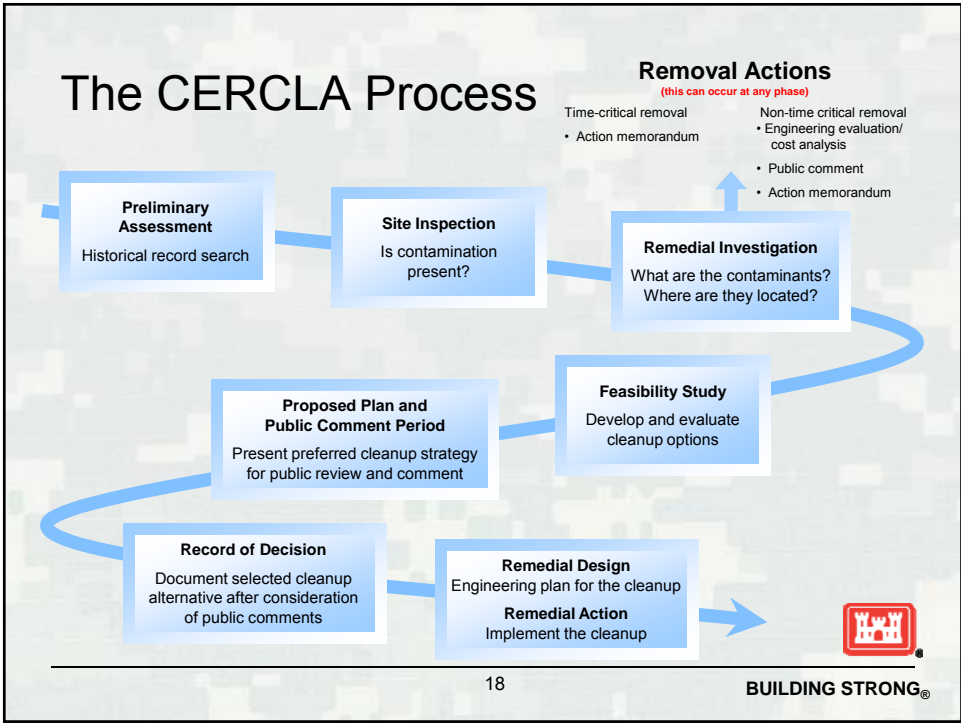
\$ 31.7 M*

* subject to change as remedial investigations progresses



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MMRP (Ordnance) Safety Education

- The USACE remains committed to protecting public safety by reducing the risk presented by the presence of military munitions to the maximum extent possible.
- "3Rs" of explosives safety
 - ▶ RECOGNIZE — when you may have encountered a munition
 - ▶ RETREAT — do not touch, move or disturb it, but leave the area
 - ▶ REPORT — call 911 and advise the police what you saw and where you saw it



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USACE's former Raritan Arsenal webpage
at:

www.nan.usace.army.mil/Raritan



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Former Raritan Arsenal Remedial Investigation Overview



Presentation for Public Information Meeting – September 25, 2013


Remedial Investigation/Feasibility Study (RI/FS)
Former Raritan Arsenal
Edison, New Jersey
Contract # W912DY-09-D-0060, Task Order 003

A Munitions Remedial Investigation is Beginning



The purpose of this presentation is to present an overview of this upcoming investigation.

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Public
Informed

Focus of the Remedial Investigation






- Since 1989, numerous investigations and removal actions have been completed at the former Raritan Arsenal.
- This RI/FS focuses on 12 specific areas of the former Arsenal, with the purpose to:
 - Characterize the nature and extent (*i.e., what is it, and where is it*) of munitions and explosives of concern (MEC), munitions constituents (MC), and other hazardous and toxic wastes that are specifically related to a known/documented Department of Defense release.
 - Perform human health and ecological risk evaluations, as well as complete a MEC hazard assessment.
 - Collect sufficient data to define remedial alternatives within the Feasibility Study.

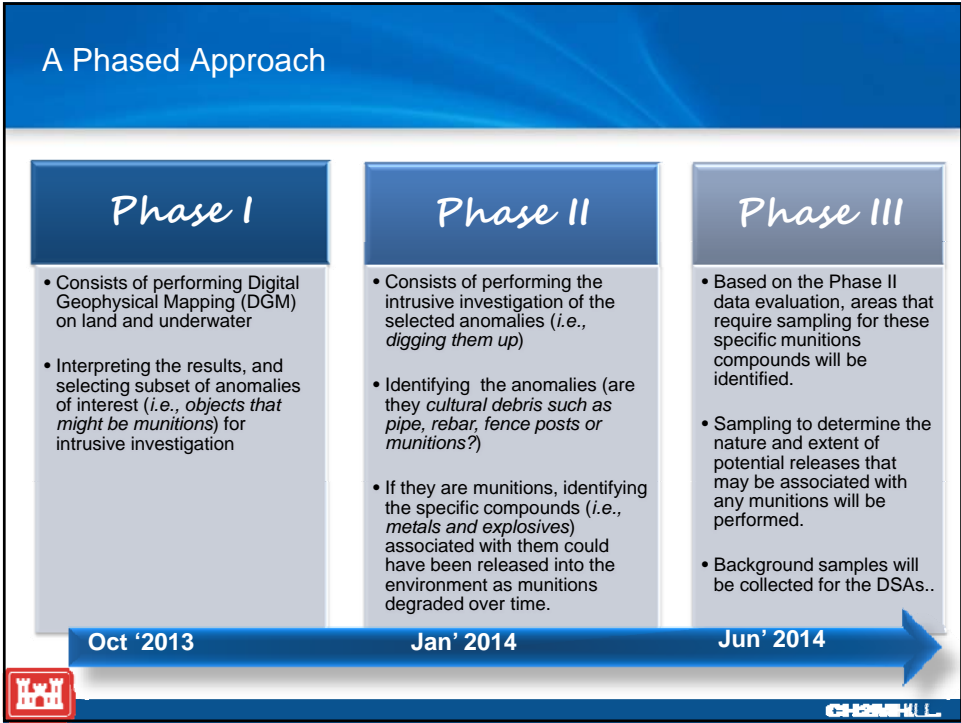


Specific Areas of Focus

Area ID	Name of Area	Acreage
Area 1	Former Demolition Area	0.57
Areas 6, 6A, 6B	Former Burning Ground and Impoundment Area	130
Area 10	Former Wastewater Treatment and Magazine Area	140
Area 11	Former Dredged Material and Explosives Area	11
Area 12	Former Dredged Material and Explosive Detonation Area	82
Area 13	Submerged Dock Area	23
Area 16	Former Magazine Area	277
Area 18D	Trench of Shell Casings	31
Areas 9 and 19	Former Magazine Areas	294
DSA	Dredge Spoils Area	645










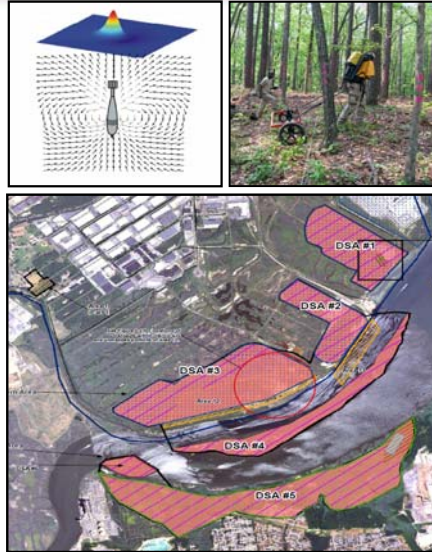
Phase I – Site Preparation and DGM (Oct – Dec 2013)

- Phase I is scheduled to start in October 2013.
- Vegetation will first be cut and cleared to allow for surface clearance and Digital Geophysical Mapping (DGM).
- Surface clearance is walking the areas to be investigated and picking up metallic objects on the surface that could interfere with the DGM.
- In the event a munitions item is discovered on the surface.
 - If it is deemed safe to move, it will be moved to a remote location where it will be destroyed.
 - If it is not safe to move, engineering controls such as sandbags, soil, etc will be used to conduct a safe controlled detonation



What is Digital Geophysical Mapping or DGM?

- Geophysical technicians slowly walk over the areas to be investigated using Electromagnetic Induction (EMI) instruments.
- DGM is not intrusive, and does not require that anything buried in the subsurface (*under the ground or under the river bottom*) is disturbed.
- Subsurface anomalies are recorded electronically, and a digital map is created so anomalies can be located in the next phase of the investigation.
- Skilled geophysicists, and munitions experts analyze the data collected, and select subsurface anomalies that could be munitions and should therefore be further investigated.



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Phase II – Intrusive Investigation (Jan – Mar 2014)






- Phase II (*scheduled to start in January 2014*) will begin once subsurface anomalies have been identified, prioritized and selected for investigation.
 - UXO technicians will reacquire anomalies using surveying equipment.
 - Anomalies are then carefully excavated using a combination of hand tools (*e.g., shovels, trowels*) and heavy equipment (*e.g., tracked excavators, backhoes*).
 - UXO teams identify the anomalies and determine whether they are munitions or cultural debris (*i.e., metals pipe, fence posts, etc.*)
 - Munitions are then inspected and a determination is made whether they can be moved, or will need to be destroyed in place.
- For safety reasons during these intrusive investigations, exclusion zones are established to keep “non-essential personnel” out of the areas that are being actively investigated.



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Phase II – Intrusive Investigation (Jan – Mar 2014)

- Currently, it is anticipated that intrusive investigations of anomalies will be required in the following areas:
 - Area 10
 - Area 12
 - Area 13
 - Area 18D
 - Dredge Spoils Areas
 - These are places where sediments that were dredged from the river may have been deposited in the 1950s.



Phase III – Sampling & Analysis (June – July 2014)

- Following the identification and classification of any munitions which are recovered during Phase II.
- Munitions experts and scientists will identify the types of compounds (*i.e., the specific metals and explosives*) that make up those recovered munitions'.
- Environmental samples will then be collected and analyzed for those specific compounds to ensure that they have not been released into the environment.



Schedule				
Phase	Task	Duration (business days)	Projected Start	Projected Finish
Work Planning	Submission of Draft-Final Work Plan (Rev 2)	0 days	Fri - 08/02/13	Mon - 08/05/13
	NJDEP Review	30 days	Mon - 08/05/13	Fri - 09/13/13
	Preparation of Responses to NJDEP Comments	10 days	Mon - 09/16/13	Fri - 09/27/13
	Preparation of Final Work Plan	26 days	Mon - 09/16/13	Mon - 10/21/13
Phase I	Mobilization and Site Set-up	5 days	Tue - 10/22/13	Mon - 10/28/13
	River Based Digital Geophysical Mapping (DGM) Surveys	5 days	Mon - 10/28/13	Fri - 11/01/13
	Terrestrial Surveying, Vegetation Clearance & Surface Clearance	27 days	Mon - 10/28/13	Thu - 12/04/13
	Terrestrial DGM	24 days	Thu - 11/14/13	Tue - 12/17/13
Phase II	River Based MEC Investigation	23 days	Mon - 01/06/14	Thu - 02/06/14
	Terrestrial MEC Investigation	36 days	Thu - 02/06/14	Fri - 03/28/14
	QAPP Addendum	50 days	Fri - 03/28/14	Fri - 06/06/14
Phase III	Surface and Subsurface Soil Sampling	15 days	Mon - 06/09/14	Mon - 06/30/14
	Laboratory Analysis and Data Validation	40 days	Mon - 06/30/14	Mon - 08/25/14



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Safety and Coordination

- The US Army Corps of Engineers
 - Is committed to investigating these areas with the utmost concern for the safety of the public.
 - Is committed to keeping the general public, stakeholders, and local government informed about what is happening, and when it will be happening.
 - Will schedule additional meetings throughout the phases of the investigation so all interested parties remain well informed.





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