



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

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

**Public Information Meeting
7 November 2013
Sayreville Borough Hall
127 Main Street • Sayreville, New Jersey**

Meeting Summary

Introduction

After one-on-one conversations during the open house from 7:00 to 7:30, the public meeting opened at 7:30. Fourteen members of the public attended the meeting. Ms. Sandra Piettro of the U.S. Army Corps of Engineers (USACE) Project Manager welcomed participants and gave a brief history of the former Raritan Arsenal.

Presentation

Mark Callaghan of CH2M HILL presented information about the upcoming munitions Remedial Investigation, with details about the history of Dredge Spoil Area (DSA) #5 in Sayreville (see Attachment 1).

Mobilization began last week and work has started on the north side of the river. Survey work may start tomorrow (November 8) on DSA #5, followed by vegetation clearance and surface clearance, then finally digital geophysical mapping (DGM). Phase I should be completed around Thanksgiving or early December. Phase II (intrusive investigation) will begin in January 2014. Phase III (sampling for munitions constituents) is expected to begin in June.

Questions from Community Members and Answers Provided

Q: Regarding equipment to be used for vegetation clearing – what about marshland? The boat and land equipment won't work in the marsh.

A: Marsh Master and swamp buggies will be used. The Marsh Master is like a smaller version of the amphibious vehicles used for Ducks tours; it can travel on land or water. It tows a mower that will trim the phragmites down to about 4 inches. It can become stuck, but it's the best equipment for working in marshes.

Q: What's the longevity of grenades and rifle grenades? Could they have rotted away, and not be dangerous after so long?

A: There is no expiration date. They can still be dangerous. Some items, the longer they sit the more unstable and dangerous they become. You can find Civil War cannonballs that are still dangerous. It's often impossible to tell what something is after it has corroded, so we have to take everything as hazardous unless we know for sure. Some



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items have a thin case and may have deteriorated, but the grenades found in the 1993 removal action had heavy metal bodies.

Q: Were notices of this meeting sent to the whole Borough?

A: Notices were mailed to about 1,400 homes between Main Street and Sayreville Boulevard near DSA #5, and to others [local officials and non-governmental organizations].

Q: What about the north side of the river?

A: A lot of munitions have been found there, but nothing outside the former arsenal boundaries. We've just started work on the DSAs on the north side, so we don't know what is in the dredge spoils there yet.

Q: If something has to be detonated, will you let residents know?

A: We won't hold a public meeting, because it takes too long. We have to guard the item 24 hours/day until commercial explosives are delivered and the item is detonated. We will notify the local emergency services through the 911 call center, providing 24 hours advance notice of the intentional detonation. We will call again when we are ready to start and we will make sure no one is in the area. We'll call the 911 call center again to tell them when we're done. With the engineering controls, you won't hear a large boom and will not feel much if any vibration; if you're in the house with the TV on, you probably wouldn't notice it.

Q: Will you put up danger/keep out signs while you are working? Kids are curious; they are known to hang out and have bonfires in the marsh area, ignoring private property signs. One of the locals rides a [dirt bike or all terrain vehicle] over there nearly every day.

A: That's a very good question. Cutting transects for the DGM will create paths to the river that could entice reckless people. That is a point worth discussing with the local officials.

Q: Are you working with police department to let them know about this? Maybe they could provide more police presence to keep out trespassers.

A: Yes, about one month ago we met with Sayreville Emergency Services Coordinator Barry Eck and some other local officials, at the fire department building. They requested we hold this public meeting. We will sit down with the public safety team and raise this



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question. If we see kids back while we're working there, we will report that to the police. If someone comes into the area during intrusive investigation, we have to stop work.

Q: Reverse 911 can be used to notify people before an intentional detonation; talk to Barry Eck.

A: We will talk with him.

Q: Are you just clearing transects or clearing all vegetation? If you clear it all, it will be more obvious that someone is trespassing in there.

A: Just 3-meter-wide transects, there is no need for us to cut back everything to do the investigation. It will grow back very quickly.

Q: We live in the Main Street Townhomes. How will you find out about items in the Sheffield Towne development, if it was built on dredge spoils?

A: The area shown as DSA #5 is the permitted maximum limit, not necessarily the area where dredge spoils actually were deposited. You can see a tall berm along the edge of the marshland, then it's flat to the river, where spoils were deposited. We don't believe that the Sheffield Towne condos were built on dredge spoils. If there were munitions there, something would have been found when the homes were built. We will run transects right up to the edge of the community, but we don't expect to find anything there except little pieces of metal (like rebar).

Q: In Phase III soil sampling, if there is toxic waste that has leached into the ground, there will be a cleanup?

A: Yes, the Corps follows the CERCLA process. We are in the Remedial Investigation (RI) phase – gathering data about locations of munitions items and analyzing environmental sample results based on the composition of munitions we find. Then we will use that data to develop cleanup strategies. There are many options, if we find there was a contamination issue related to munitions, for example DMX or TNT: we could just dig it all up, or could we cap it to keep people away, or fence it off, or mix other compounds with the soil to reduce toxicity. These kinds of alternatives will be evaluated in the Feasibility Study.

Q: There could be a hazard to your workers from hunters; we've heard them shooting.

A: Thank you for letting us know.



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Q: Proposed road, Main Street Bypass – will your work hold that up? That will be a major project if it's approved.

A: We have heard of it, but don't know what their schedule is. We understand that the Department of Transportation is still working with the state on permits. Given how long that can take, we should be done with our cleanup by the time the project starts, if it does.

Q: MCUA is putting in a sewer line through that area, plus there is some kind of flood protection study going on there.

A: Yes, we've heard about that.

Q: Is the area near the Route 9 bridges involved? National Lead polluted that area.

A: No, that's well outside our investigation area.

Q: In the mid-1990s, there was a proposal for a private company to do dredging in the river, which was not allowed to take place. Did they know about this munitions issue?

A: We're not aware of that proposal.

Q: I live next to that area and I'm concerned about ditches full of water that overflow and make ponds.

A: Nothing that we're going to do will create more water retention, nothing that will alter terrain or move lots of earth. We'll encounter water when we dig holes in the marsh to look for munitions items, of course.

Q: We heard detonations years ago on the north side; was that related to this study?

A: The Raritan Center property owner allowed the local police and fire department to blow up things they'd found. The Army Corps also did some intentional detonations of munitions items found in earlier removal actions.

Q: Will you contact us again if we sign up for the mailing list?

A: Yes, in December or January, we'll let you [and other residents] know about another public meeting to present the results of Phase I.

Sandra Pietto thanked everyone for coming. The meeting was adjourned at 8:15 pm.

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Former Raritan Arsenal Remedial Investigation – Phase I



Presentation for Public Information Meeting – Sayreville Borough Hall – November 7, 2013

*Formerly Used Defense Sites Program (FUDS)
Former Raritan Arsenal
Edison, New Jersey
Contract # W912DY-09-D-0060, Task Order 003*

A Munitions Remedial Investigation is Beginning

This presentation provides information about upcoming work along the south shore of the Raritan River, in the wetlands between the river and Sayreville Boulevard.

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To
Keeping
The
Public
Informed

Focus of the Remedial Investigation (RI)



- Since 1989, numerous investigations and removal actions have been completed at the former Raritan Arsenal.
- This investigation focuses on 12 specific areas of the former Arsenal
- The purpose is 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 in the Feasibility Study that will follow.



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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



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Specific Areas of Focus


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Area 1	Former Demolition Area
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Area 13	Submerged Dock Area
Area 16	Former Magazine Area
Area 18D	Trench of Shell Casings
Areas 9 and 19	Former Magazine Areas
DSA	Dredge Spoils Areas
DSA #s 5 and 6	Areas to be Investigated on the south side of the river



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Investigation Area in Sayreville

- Dredge Spoils Area #5
 - 228-acre area of wetlands along the southern shore of the Raritan River, just north of Sheffield Towne community
- Dredge Spoils Area #6
 - One of two small islands in the river, known as the Crab Islands
- The lower Raritan River was dredged in the World War I and World War II eras to maintain a channel and turning basin for ships loading and unloading at the former Raritan Arsenal.
- Dredged materials (“dredge spoils”) might have contained discarded military munitions that fell off cargo ships during loading and unloading.



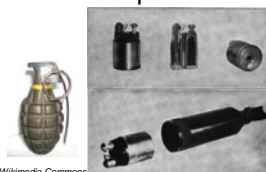
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Brief History of Dredge Spoils Area (DSA) # 5



Dredges from the 1950s-1970s, U.S. Army Corps of Engineers Dredging Operations Support Program - Historical Photos

- 1940s-1950s: Raritan River dredged to increase its depth for shipping
 - Dredge spoils were deposited in several locations, including an 8-acre parcel near the Sayreville wastewater plant, known as the “Spoils Area”
 - The “Spoils Area” was also used by the town of Sayreville, during installation of a sewer plant effluent diffuser in the river bed
- 1993: USACE conducted a munitions removal action in the Spoils Area
 - A total of 245 ordnance items were removed from a depth of 4-8 feet below the ground
 - 14 Mk II hand grenades
 - 231 French rifle grenades



Historical photos - Wikimedia Commons



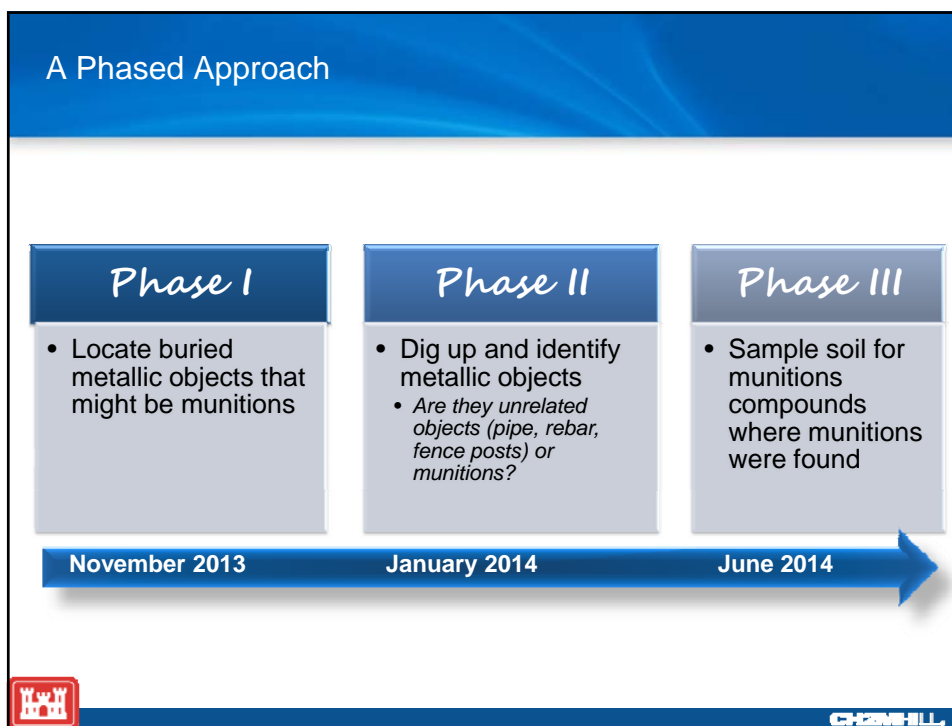
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Brief History of Dredge Spoils Area (DSA) #5 (continued)

- 2012: Records research identified historical maps showing the permitted limits of dredge spoils disposal areas, including:
 - Along the northern shore of the river on the former arsenal property (DSA # 1-3)
 - Two islands in the river (DSA # 4 and DSA #6)
 - Along the southern shore of the river; added to the munitions investigation as DSA #5









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

- Phase I field work is scheduled to start November 11, 2013.
- Vegetation will first be cut and cleared to allow for surface clearance and Digital Geophysical Mapping (DGM).
- Surface clearance: walk over the area and pick up metallic objects on the surface that could interfere with the DGM.
- In the unlikely event that 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

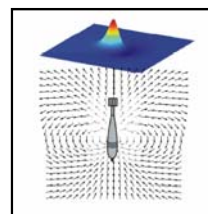
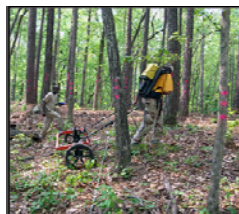


What is Digital Geophysical Mapping or DGM?

■ Terrestrial Digital Geophysical Mapping (land sites)

- Geophysical technicians slowly walk over the areas to be investigated using electromagnetic Induction (EMI) instruments
- DGM is not *intrusive*: it does not require that anything buried under the ground be disturbed
- Subsurface “anomalies” (metallic objects) are recorded electronically
- A digital map is created so anomalies can be located in the next phase of the investigation.
- *Anomalies may be any metallic objects, not necessarily munitions*
 - For example, pipes and fence posts



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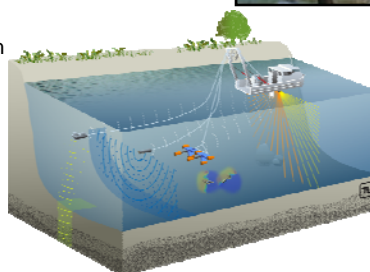
What is Digital Geophysical Mapping or DGM? (continued)

■ Underwater Digital Geophysical Survey (river)

- Underwater instruments are pulled by a boat in a specific pattern
- Underwater DGM will be used to identify metallic debris that could be munitions, on or beneath sediments on the river bottom

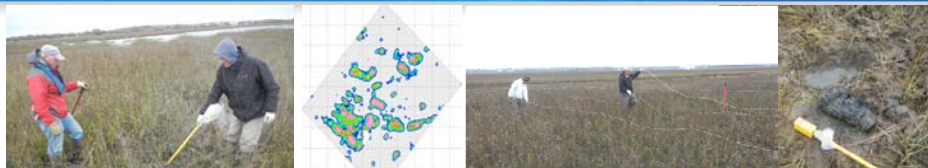
■ Skilled geophysicists and munitions experts will:

- Analyze the data collected from both terrestrial and underwater DGM
- Select subsurface anomalies that might be munitions and should be further investigated



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Phase II – Intrusive Investigation (Jan – March 2014)



- Phase II is scheduled to start in January 2014, after subsurface anomalies have been identified, prioritized and selected for investigation.
- Unexploded ordnance technicians will:
 - Re-locate the mapped anomalies using surveying equipment.
 - Carefully excavate anomalies using a combination of hand tools (*shovels, trowels*) and heavy equipment (*tracked excavators, backhoes*).
 - Identify the anomalies and determine whether they are munitions or “cultural debris” (*metal objects such as pipes, fence posts, marine debris, etc.*)
 - Inspect munitions and determine whether they can be moved safely, 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 III – Sampling & Analysis (June – July 2014)

- Phase III will begin after identifying and classifying any munitions that are recovered during Phase II.
- Munitions experts and scientists will identify the types of compounds (*specific metals and explosives*) that make up those recovered munitions.
- Environmental samples will be collected and analyzed for those specific compounds, to ensure that they have not been released into the environment.



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Schedule				
Phase	Task	Duration (business days)	Projected Start	Projected Finish
Phase I	Mobilization and Site Set-up	5 days	Wed 10/23/13	Fri 10/25/13
	Terrestrial (Land Sites) Surveying (DSA #5 and DSA #6)	4 days	Fri 11/8/13	Thu 11/14/13
	Vegetation Clearance (DSA #5 and DSA #6)	3 days	Mon 11/11/13	Thu 11/14/13
	Surface Clearance (DSA #5 and DSA #6)	3 days	Fri 11/15/13	Tues 11/19/13
	Terrestrial DGM Surveys (DSA #5 and DSA #6)	3 days	Wed 11/20/13	Fri 11/22/13
	River (Underwater) Digital Geophysical Mapping (DGM) Surveys	10 days	Mon 11/4/13	Fri 11/15/13
Phase II	Intrusive Investigation	January – March 2014		
Phase III	Environmental Sampling & Analysis	June – July 2014		



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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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Questions

■ If you have questions that were not answered tonight, please contact:

Ms. Sandra L. Pietro, Project Manager
Phone – 917-790-8487
Email – Sandra.L.Pietro@usace.army.mil



■ For more information about investigations at the former Raritan Arsenal:

- Visit the project website:
www.nan.usace.army.mil/Raritan



■ To sign up for future mailings/public meeting notices:

- Make sure you signed the sign-in sheet tonight
- Send an email to Sandra.L.Pietro@usace.army.mil
- Sign up for the Borough of Sayreville's online mailing list at www.sayreville.com



*Thanks for your
participation!*



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