



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

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

**Public Information Meeting  
9 Dec 2014**

**Edison Senior Citizens Center • 2963 Woodbridge Avenue • Edison • New Jersey**

## **Meeting Summary**

### **Introduction**

The meeting began at 7:03 p.m. Two representatives of local environmental groups (Raritan Riverkeeper and Edison Greenways Group), and one public member attended the meeting. Ms. Sandra Piettro of the U.S. Army Corps of Engineers (USACE) welcomed everyone, described the purpose of the meeting as a project status update on the environmental restoration of the former Raritan Arsenal, and reviewed the agenda.

### **Presentation/Project Status**

Ms. Piettro provided a slide presentation on the status of investigations of the various sites (**Attachment 1**). She began by presenting an overview of the site history, including its original mission, when Raritan Arsenal was closed, and how the property was divided up for reuse.

Ms. Piettro then described the sites, or Operable (Decision) Units. The Former Raritan Arsenal is a large property (about 3200 acres) which is broken into smaller divisions for environmental investigation and remediation. She showed a map of the operable units and described the status of investigation for each one.

### **Site-Wide Groundwater/Indoor Air/Vapor Intrusion**

Ms. Piettro explained that groundwater is being addressed separately from the Operable Units and covers most of the former Raritan Arsenal property. For more than 20 years, groundwater investigations have been going on. A Remedial Investigation (RI) has been completed, and the operable unit is now in the Feasibility Study (FS) phase to evaluate the need for and possible alternatives for moving into the next phase. Following the FS, a Proposed Plan will be prepared, describing the proposed alternative. Public comments will be solicited, there will be a meeting announcement, and a public meeting will be held to discuss the Proposed Plan. The Proposed Plan will be placed on the USACE website and there will be usually a 30-day public comment period. The public meeting will probably take place next summer. Once the public comment period has concluded, USACE will document all of the comments in a Decision Document.

A participant asked why part of the map on Slide 5 wasn't colored in, and Ms. Piettro explained that that area does not have groundwater issues. The participant asked for clarification that contamination has reached the groundwater and Ms. Piettro confirmed that, and reminded the group that the area where groundwater is affected was historically the industrial part of the arsenal. The colored area was not used because it was very marshy. Ms. Piettro pointed out specific areas on the poster and described a few specific sites and how they were used, and that materials were buried there. She explained that the USACE now has more than 20 years of groundwater data. Data indicates that the groundwater plumes are reaching a steady-state, and now the USACE will document what actions they would like to do, and then, following the decision process, will execute that response.



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Ms. Piettro continued by referencing the long-term groundwater monitoring program, which will be ongoing with sampling every five years until 2042. They are currently sampling and submitting results to the New Jersey Department of Environmental Protection (NJDEP) and that data is showing the contaminants are reaching a steady-state without intervention.

A participant asked whether that means there is natural attenuation going on, and Ms. Piettro confirmed that. The participant then asked who decides what the “actionable levels” are – USACE? NJDEP?

Ms. Piettro responded that probably both USACE and NJDEP will decide together. The latest results show some detections, but not at high concentrations. She indicated that some Areas of Concern (AOCs) have been dropped for no further action (AOCs 1, 3, 5, and 7). The highest area of groundwater contamination was the black area (on the map) at AOC 2. USACE came in, cleaned up the soil, removed the waste, did a pilot test, and decreased concentrations by 95 percent. Now USACE is monitoring the groundwater; results show that contamination is leveling off.

A meeting attendee asked whether USACE has consulted with the property owner about plans for the property (EPA parcel that houses EPA building 255 and 256). Ms. Piettro replied that they have not and do not know who will be purchasing that property. The meeting attendee explained that he is asking because a studio class from Rutgers University had developed recommendations for wetlands and recreational use of the property. They were talking about constructing some salt marshes with tidal flushing. Mr. Callaghan indicated that was in a different area, nearer to the river, and the meeting attendee replied that it was also in the “El Paso” area. The meeting participant then used a pointer to highlight areas of the poster and showed where they had been looking at freshwater wetlands, a salt marsh, a recreational area in the El Paso area, a river walk, and other similar development. He wondered about the hydrology in that area, whether it is “hot” and what would happen if they do some sort of enhancement to increase water flow through the area.

Mr. Callaghan then clarified that, although they do not know exactly what redevelopment plans area for the area, the extent of groundwater contamination is defined and the levels are currently decreasing. He continued by explaining that groundwater moves extremely slowly downgradient toward the river. To “pull” the groundwater plume, one would have to draw down the water in the area so low it would be like a vacuum. The work could affect surface water, but to affect groundwater, they would have to make a huge hydraulic change – they’d have to pump out a huge amount of groundwater in order to pull the plume down into that area.

The attendee clarified that he thought of it when there was talk of supporting a freshwater wetland in that area and increasing water flow to support that wetland. That made him start to think about the potential to pull contamination in to the area. Mr. Callaghan replied that they



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would not be changing groundwater flow, but that it was a valid concern. The attendee then concluded by reminding Ms. Pietro to ask the property owner, because it does look like the property owner will be doing something there.

Ms. Pietro then continued with her presentation with Slide 7 on indoor air. She described how vapors from groundwater contamination can seep up through pores into sub slab and up through cracks in foundation. Currently, USACE is monitoring indoor air in eight buildings. They collect samples two times per year, document, and it and submit the results to NJDEP.

### **Middlesex County College Property**

She continued with Slide 8, describing the status of the investigation on the Middlesex County College property. She explained that a lot of the slides will be repetitive because they are in the same stage of progress. They have completed the RI, prepared an RI report, and submitted to NJDEP. There will be no FS because there is no unacceptable risk and therefore, USACE will be proposing no further action. They will document that in a Proposed Plan, which will be presented to the public in the spring. USACE will hold release the Proposed Plan to the public, hold a public comment period and a public meeting, and document responses in Decision Document.

### **Thomas Edison Park**

Ms. Pietro continued with Slide 9, showing a graphic of Thomas Edison Park, but explained that there was a later slide with more information about the status.

### **Commercial/Industrial Area (Raritan Business Center)**

She presented Slide 10 and explained that the Commercial/Industrial Area mainly includes the industrial Raritan Center area. Again, they are currently in the reporting phase. The field investigation has been completed (some of it many years ago), and they are compiling the results into the RI report, which is being prepared to submit to NJDEP in the spring. They will then determine the need for a Feasibility Study. She reviewed the CERCLA decision process, which includes the Remedial investigation, a Feasibility Study if there is any unacceptable risk, a Proposed Plan, a public comment period and public meeting, and then a Decision Document.

### **Area 5 (former Chemical Warfare Materiel Site)**

Ms. Pietro presented Slide 11, describing Area 5. She indicated that this area was a former chemical warfare materiel area and is being investigated separately. USACE is preparing the RI report, which will be submitted to NJDEP, and then they will go through the whole CERCLA process – FS, Proposed Plan, public comment period and public meeting, and Decision Document. She anticipates the public meeting will likely be in the summer, but that depends on how quickly NJDEP completes its review.



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A meeting attendee asked where exactly that site is located, and Ms. Piettro replied that it is near the FedEx and UPS buildings. The attendee said there was a big brush fire there last year and Ms. Piettro confirmed that.

### **USEPA/GSA Property**

Ms. Piettro described the USEPA/GSA property (Slide 12) and stated that again, they are in the reporting phase, preparing the RI, and will submit it to NJDEP in the spring. Then they will determine the need for an FS and follow the CERCLA process.

### **Undeveloped Wetlands Area**

Ms. Piettro showed Slide 13 with a map of the undeveloped wetlands area and told participants that the area is being investigated – along with Thomas Edison Park – as part of the site-wide investigation that CH2M HILL is doing. Phase I of that investigation - the field survey - and Phase II – the intrusive investigation - have been completed. Phase III is coming up, and Mr. Callaghan will explain that in his presentation. Again, this area is currently in the reporting phase.

### **FY 2015 and FY2016 milestones**

Ms. Piettro then reviewed the fiscal year (FY) 2015 milestones to show how much has been accomplished and what they plan to accomplish the rest of this year. She explained that FY2015 October 1, 2014 to September 30, 2015. Some of the milestones highlighted on the slide will have been completed by the end of FY2015 and some may carry over to next year. She then presented Slide 16, explaining that they have accomplished a lot, but still have a lot of activities planned for FY2016.

### **Funding**

Ms. Piettro reviewed the budget (Slide 17) showing how much has been spent to date (\$92.2 million), what was allocated in 2013 (\$1.3 million), in 2014 (\$1.6 million) and is planned for 2015 (\$1.6 million). In order for the USACE to say the project is complete and closed out, they will need to spend another estimated \$41.7 million.

### **CERCLA Process**

Ms. Piettro reviewed the CERCLA process (Slide 18) and reminded meeting attendees that the Preliminary Assessment and Site Inspection phases were completed many years ago. After 20 years, they are now finally at the RI phase. However, USACE has also completed many removal actions and other cleanup actions. In the next few years, they will be preparing FS and Proposed Plan documents, holding public comment periods and public meetings, and preparing Decision Documents.

Mr. Frazier clarified that USACE did not begin the investigation using the CERCLA process, and Ms. Piettro confirmed that. USACE originally started addressing “hot spots” and completed removal actions with Formerly Used Defense Sites (FUDS) funding.



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### **Ordinance Safety**

Ms. Piетро reminded meeting attendees about ordnance safety, and the importance of exercising the “3 Rs” of safety – recognize, retreat, and report – if they find anything suspicious.

### **For More Information**

She concluded her presentation by showing the USACE’s website address and stating that proposed plans, fact sheets, and meeting minutes, will continue to be uploaded onto website. She also provided her contact information.

Ms. Piетро then turned the meeting over to Mark Callaghan from CH2M HILL, to give a presentation about the status of the munitions remedial investigation.

## **Presentation/Munitions Remedial Investigation (RI)**

Mark Callaghan, Project Manager for CH2M HILL, began his presentation (**Attachment 2**) by pointing out that the purpose of the munitions investigation is to characterize the nature and extent of munitions, munitions constituents, and any hazardous and toxic wastes specifically related to a Department of Defense (DoD) release. He stated that the munitions RI is ongoing, but the field work is nearing completion, and he would be presenting more details about what has happened, what is coming up next, and give participants a chance to ask questions or express concerns.

Mr. Callaghan presented a map showing the areas under investigation, and then briefly described the phased approach to the investigation. Phase 1 consisted of site preparation and digital geophysical mapping. In Phase II, they go back to find the anomalies identified in Phase I and determine what they are. In Phase III, they will do soil sampling where they found munitions.

He then described the results of the Phase I and II in more detail. In Phase I, they cut vegetation, and did surface clearance; they found no munitions on the surface.

Phase II started in January 2014 after anomalies had been identified and prioritized. More than 1,400 terrestrial and 30 aquatic anomalies were investigated. Of those, only 37 were determined to be “material potentially presenting an explosive hazard” (MPPEH). Mr. Callaghan explained that no MPPEH was found in river – only in the terrestrial work area, mostly in Area 12. Most of what was found was either MK 1 French rifle grenades and or MK 2 hand grenades, all of which were expended or fragmented. The munitions items were all determined to be material documented as safe (MDAS). During the investigation, large exclusion zones were established for safety.

Mr. Callaghan continued by describing Phase III of the investigation. He stated that a visual assessment was made at each of the 37 areas where MPPEH was found. They looked to see if



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the munition was completely expended and whether soil was stained. There was no visual evidence to support additional soil sampling for munitions at any of the 37 locations.

Therefore, the approach is to do some background soil sampling. They will collect soil samples from areas of the Arsenal where the DoD did not work, and then will be able to compare those soil conditions to areas with active DoD involvement, where munitions were used for years.

When that work has been completed, they will start writing RI reports. There are some areas where they do not need to do soil sampling and they are already preparing the RI reports for those areas. Where further remedial actions are determined to be necessary, remedial alternatives will be developed and documented in an FS, and then a Proposed Plan and Decision Document, as Ms. Piетро described earlier.

Mr. Callaghan then concluded his presentation by stating that USACE remains committed to investigating these areas with utmost concern for public safety and with open communication with the public, stakeholders and local government. He emphasized that open communication is “why we’re here” – why there are public meetings, a website, stakeholder meetings, etc. The purpose is to keep everyone informed and for USACE to be transparent about the investigation of the former Raritan Arsenal.

### **Questions**

A meeting attendee asked about a legal notice that was in the paper that day, referring to Garden State Buildings and filing “a bunch of EPA-mandated permits” for fill removal. He asked whether USACE was aware of the proposed construction and whether it was in any areas of concern.

Ms. Piетро said that she was aware of the work – some areas are near the Expo Center and some are in the waterfront areas. She explained that in addition to the public meeting, USACE also holds stakeholder meetings to keep them informed.

Mr. Callaghan added that the work appears to be primarily in Area 16 and showed it on a map. He explained that the area – where there were magazines – had been heavily investigated when the property was being decommissioned. They have done sampling in that area; there was nothing of DoD concern – hardly anything has ever been found there.

Ms. Piетро then added that the water area is in Area 12, not Area 13. USACE did its munitions investigation before they started any activities and coordinated with them.

The meeting attendee asked whether anything was found around the dock area. Mr. Callaghan replied, saying they found a Honda Accord and a lot of debris – cables, trash metal, etc. He stated that they did not come anywhere near the cable that provides power to Long Island, although the power company had two representatives on the barge during the work. They found a lot of flaked iron – old metal that had flaked off the dock or pilings. When prompted, he



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confirmed that it had all been removed and sent to Bayshore Recycling, including the car. He also confirmed that they completed just short of 17 acres of underwater geophysics, mostly in the turnaround area.

Meeting attendees expressed a little concern that nothing was found near the dock or in the water, stating that “old timers” in the area talk about things falling into the water all the time when they were loading ships during the war. Mr. Callaghan replied by reminding the group that the Arsenal was closed in the 1960s, but the shipping activities occurred in the 1940s. The area was frequently dredged so that ships could come in and turn around. Dredged material was placed on the Arsenal property. That is why they are investigating various areas of the Arsenal. He stated that there is no reason there should be hand grenade parts in some of those areas unless they had been scooped up from the river and deposited there. He explained that is the same reason munitions were found in one small area on the south side of the river. When they constructed the sewer pipeline, they removed sediment from the river, deposited it in that one area – and it happened to contain French rifle grenades. He explained that most things that fell over the side and into the river had at some point been scooped up and placed back on the Arsenal property.

Ms. Pietro explained that a previous contractor found hundreds of thousands of munitions (about 200,000) in Area 12, mostly French rifle grenades.

The group discussed why there were so many French rifle grenades on the property and why they weren’t “thrown at the Germans” and were here instead. Mr. Callaghan explained that many of them were World War I items that were brought back to be stored, which is why there were hundreds of thousands of items removed from one area. Others were items that did fall off the dock or off ships during loading, and then were dredged and deposited back on the property as part of fill material. It is therefore not surprising that munitions were not found around the dock and in the water. Now the dock area is considered clear and there are plans for a “water-related business” in that area. The group agreed that it will be interesting to see what happens in that area.

Ms. Pietro concluded by saying that minutes would be drafted and sent to the participants. The meeting adjourned at 7:58 p.m.



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## **Meeting Summary**

# **Attachment 1 Slides – Project Status**

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# Public Information Meeting

## Former Raritan Arsenal

### Formerly Used Defense Site (FUDS)

#### Edison, New Jersey

Sandra L. Piettro  
Project Manager  
USACE, New York District  
09 December 2014



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# Agenda

- Operable (Decision) units
  - ▶ Site-wide Groundwater (GW) / Indoor Air (IA)
    - Indoor Air
    - Vapor Mitigation Systems
    - GW Long Term Monitoring
    - GW / IA Feasibility Study
  - ▶ Middlesex County College property
  - ▶ Thomas Edison Park (includes Area 9, 10 & 19)
  - ▶ Commercial / Industrial Area
    - Area 5 (standalone area)
  - ▶ USEPA / GSA property
    - Area 18D (standalone area)
  - ▶ Undeveloped Wetlands Area
    - Multiple Areas – Remedial Investigation / Feasibility Study (RI/FS)
- FY 2015\* Milestones
- FY 2016\* Future Planned Activities
- Funding
- Questions



\* FY 2015: 10/1/2014 – 9/30/2015

\* FY 2016: 10/1/2015 – 9/30/2016

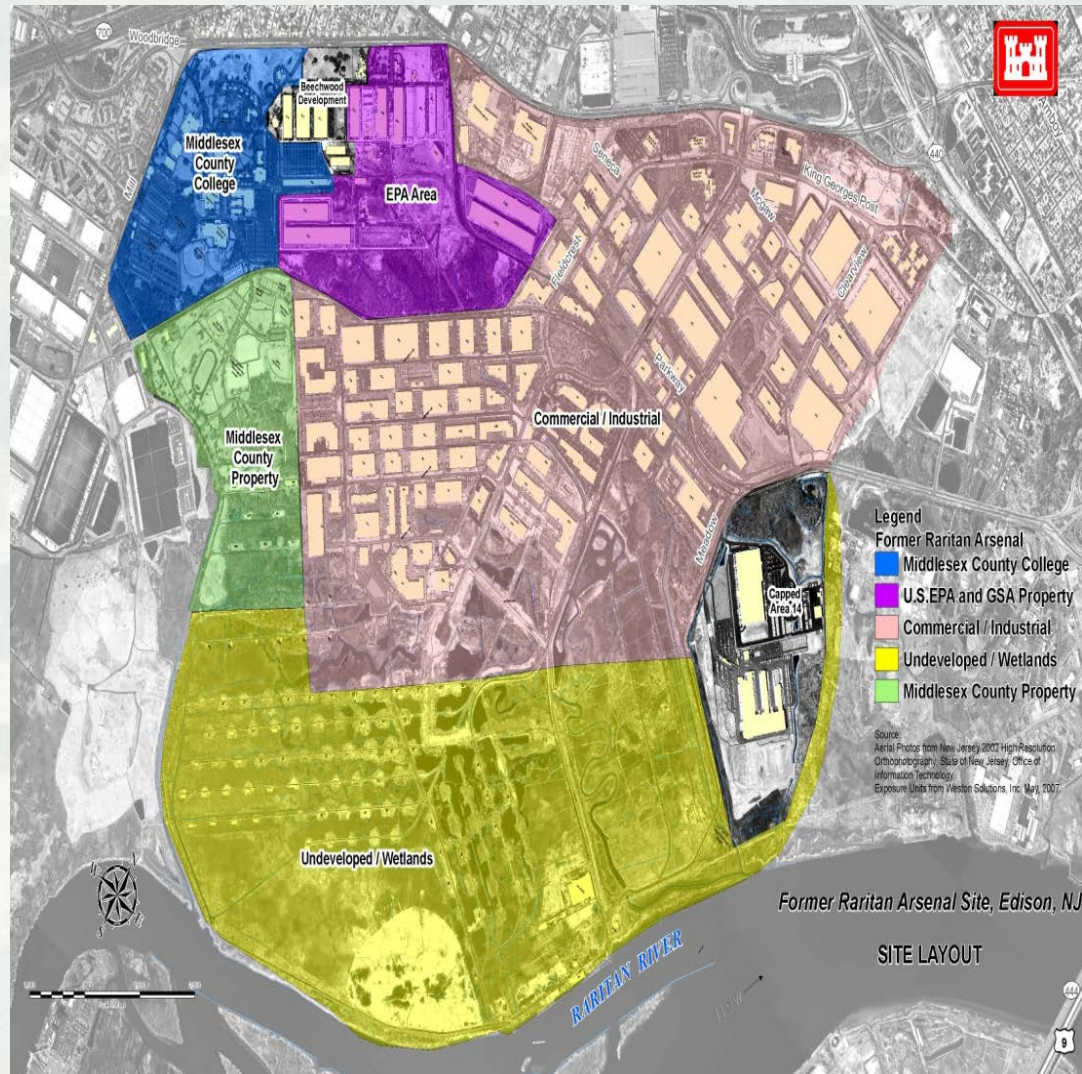
# Site History

- 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.





# Operable (Decision) Units



- Work at former Raritan Arsenal is organized into the following 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



# Groundwater / Indoor Air



## Groundwater Areas of Concerns (AOCs) 2, 4A, 4B, 6A, 6B, 6C, 8A/B, 8C, 8D, 9 & 10

- Status

- A Feasibility Study and Proposed Plan are being prepared for NJDEP submission – Feb 2015;
  - A feasibility Study evaluates the alternatives;
  - A proposed plan presents the proposed response;
- USACE will present to the public the proposed plan for public review & comment (30 days review period);
- Public Meeting will be held – Summer 2015; and
- Decision Document to be generated after PP is finalized.





# Groundwater Long Term Monitoring

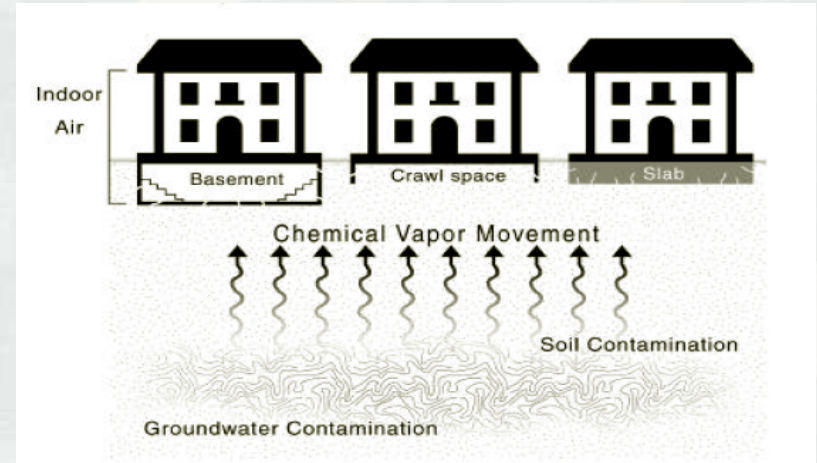
## ■ Status

- ▶ Monitor Groundwater Areas of Concerns (AOCs) for natural attenuation in the 6 AOCs (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 (2017) – every five (5) years up to thirty years (until 2042)
  - Monitored natural attenuation is a process of decreasing concentration of contaminants in groundwater without human involvement.
- ▶ Based on previous sampling results showing decreasing concentration levels: 4 GW AOCs dropped from consideration (AOCs 1, 3, 5 & 7) – no further action is required; and
- ▶ Results are showing contaminants but there is evidence of attenuation; plumes are at or reaching steady-state condition

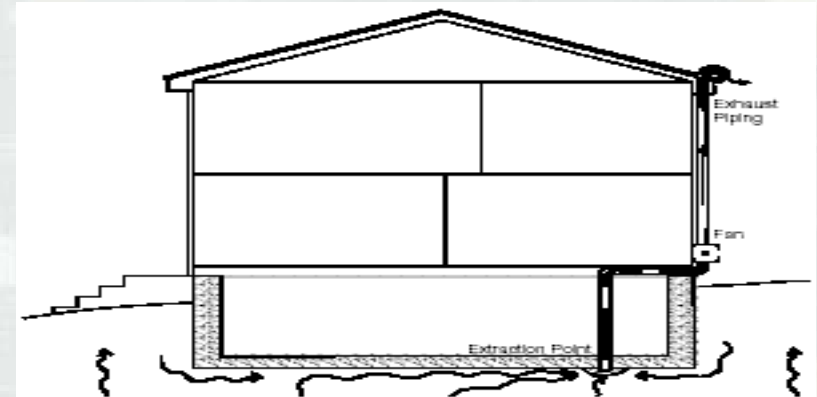


# Indoor Air / Vapor Intrusion

- 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 8 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 #10
  - ✓ Report #10 has been submitted to NJDEP for review



## Subsurface Depressurization System



# Middlesex County College property



- Prepare a Remedial Investigation (RI) / Proposed Plan (PP) / Decision Document (DD)
  - Status:
    - ✓ Completed a Remedial Investigation report – June 2014;
    - ✓ Submitted to NJDEP– June 2014;
    - There will be no Feasibility Study (FS) since there is no unacceptable risk for soil HTW;
    - USACE will present the proposed plan to public for review & comment (30 days review period);
    - Public Meeting will be held – Spring 2015; and
    - Decision Document to be prepared after Proposed Plan is finalized.





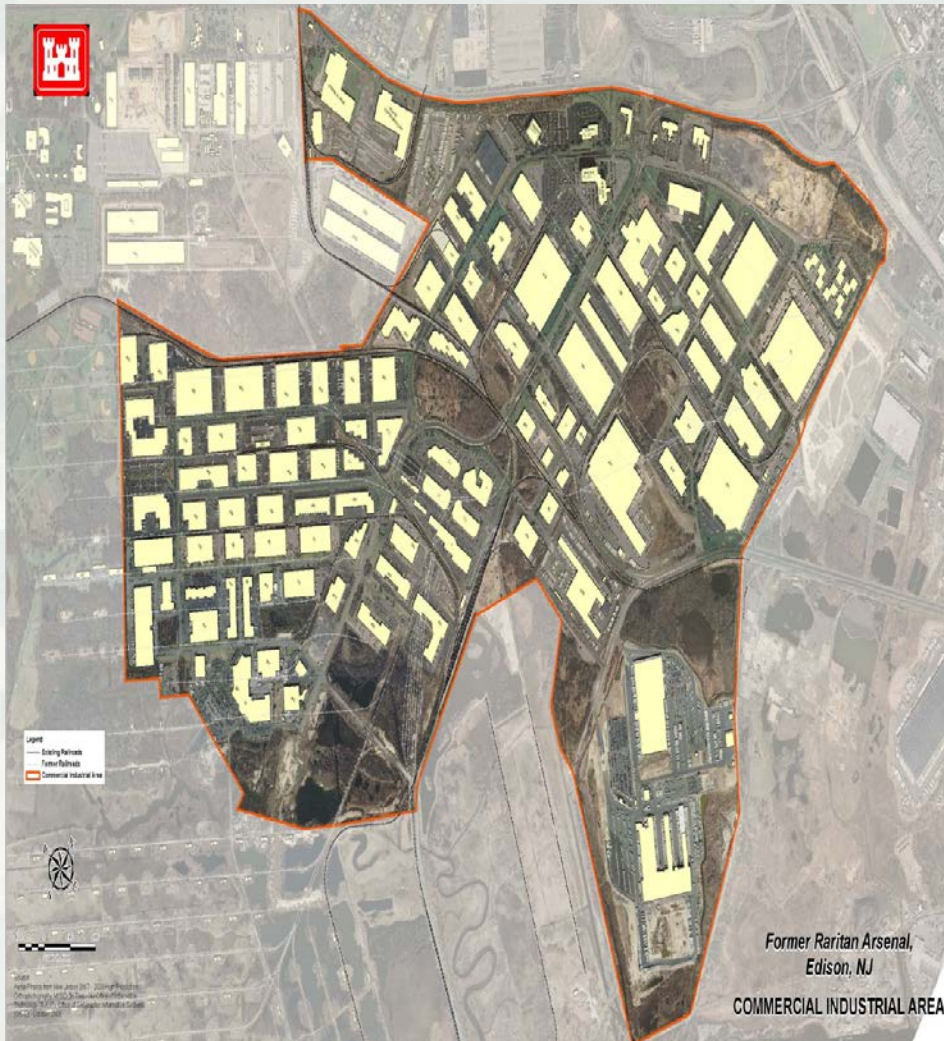
# Thomas Edison Park / Area 9, 10, 19 property



- This property is being addressed under the Site-Wide HTW & MMRP Remedial Investigation / Feasibility Study
  - Generate a Remedial Investigation (RI) / Feasibility Study (FS) / Proposed Plan (PP) / Decision Document (DD)
  - Please refer to slide name: Site-Wide HTW & MMRP Remedial Investigation / Feasibility Study



# Commercial / Industrial Area



- Prepare a Remedial Investigation (RI) / Feasibility Study (FS) / Proposed Plan (PP) / Decision Document (DD)
  - Status:
    - ✓ A Remedial Investigation is being prepared;
    - Submitted to NJDEP – spring 2015;
    - The need for a Feasibility Study will be determined after the RI report;
    - USACE will present the Proposed Plan to the public for review & comment (30 days review period);
    - A public meeting will be held; and
    - DD to be prepared after PP is finalized.





# Area 5

## (Former Chemical Warfare Material Area)



- Prepare a Remedial Investigation (RI) / Proposed Plan (PP) / Decision Document (DD)
  - ▶ Status:
    - A Remedial Investigation report is being prepared;
    - Submit to NJDEP for review – Feb 2015;
    - USACE will present the proposed plan to the public for review & comment (30 days review period);
    - A public meeting will be held – Summer 2015; and
    - DD to be generated after PP is finalized.



Former Raritan Arsenal,  
Edison, NJ

USEPA/GSA PROPERTY

Legend

- Existing Facilities
- Former Facilities
- US EPA/GSA Property (approximate)

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# Undeveloped Wetlands Area

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



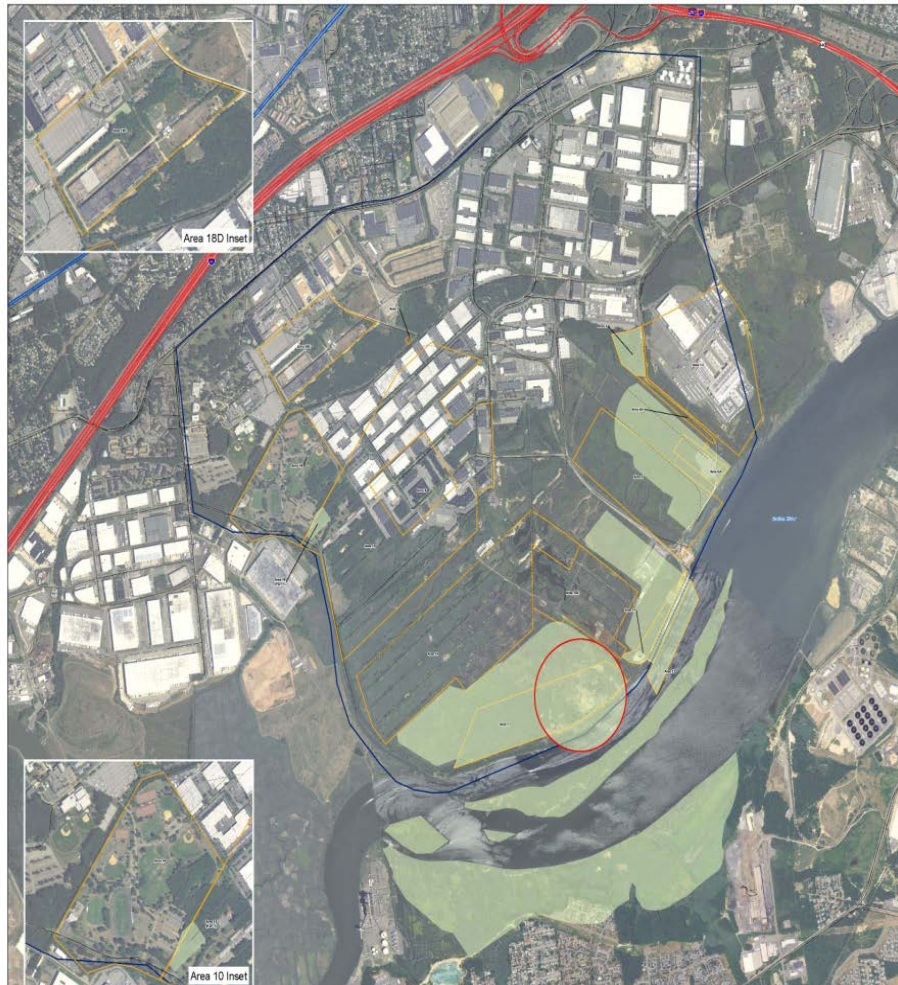
- This property is being addressed under the Site-Wide HTW & MMRP Remedial Investigation / Feasibility Study
  - Generate a Remedial Investigation (RI) / Feasibility Study (FS) / Proposed Plan (PP) / Decision Document (DD)
  - Please refer to slide name: Site-Wide HTW & MMRP Remedial Investigation / Feasibility Study



# Multiple = HTW & MMRP Remedial Investigation / Feasibility Study

(12 Investigation areas: 1, 6, 6A, 6B, 10, 10 Part I, 11, 12, 13 (Pier), 16, 18D and 9/19)

- Prepare a Remedial Investigation (RI) / Feasibility Study (FS) / Proposed Plan (PP) / Decision Document (DD)
  - ▶ Status:
    - Field work (remedial investigation)
      - ✓ Phase I: field survey – completed
      - ✓ Phase II: intrusive investigation – completed
    - Phase III: soil sampling event – Feb 2015
    - Various RI report are being prepared;
    - The need for a Feasibility Study will be determined after the RI report;
    - USACE will present the proposed Plan to the public for review & comment (30 days review period);
    - A public meeting will be held; and
    - Decision Document (DD) to be prepared after PP is finalized.





# FY 2015 Milestones

- Groundwater Compliance Monitoring Progress Report
- Feasibility Study – Groundwater / Indoor Air (Vapor Intrusion)
- Proposed Plan (incl. Public meeting) – Groundwater / Indoor Air (Vapor Intrusion) for public comments
- Indoor Air Quality report #9
- Indoor Air Quality report #10
- Remedial Investigation Report – Area 5
- Proposed Plan (incl. Public meeting) – Area 5 for public comments
- Decision Document – Area 5
- Remedial Investigation & Remedial Actions Summary Report – Middlesex County College (HTW)
- Proposed Plan (incl. Public meeting) – Middlesex County College (HTW) for public comments
- Remedial Investigation & Remedial Actions Summary Report – Thomas Edison Park
- Remedial Investigation & Remedial Actions Summary Report – USEPA / GSA property
- Work Plan addendum: Site-wide Remedial Investigation (incl. Phase 3 sampling)
- Management Action Plan
- Completed fieldwork activities at various areas
- Stakeholders / Working Group Meetings – December 2014 and June 2015
- Public Information Meetings – December 2014 and June 2015



# FY 2016

## Future Planned Activities

- Annual Indoor Air Quality report # 11
- Decision Document – Groundwater / Indoor Air (Vapor Intrusion)
- Decision Document – Middlesex County College (HTW)
- Proposed Plan (incls. Public meeting) – USEPA / GSA property for public comments
- Decision Document – USEPA / GSA
- Proposed Plan (incls. Public meeting) – Thomas Edison Park (Area 9, 10 &19) for public comments
- Decision Document – Thomas Edison Park (Area 9, 10 &19)
- Proposed Plan (incls. Public meeting) – Commercial / Industrial Area for public comments
- Decision Document – Commercial / Industrial Area
- Remedial Investigation – Various Areas – Munitions and/or Hazardous, Toxic Waste
- Feasibility Study – Various Areas – Munitions and/or Hazardous, Toxic Waste
- Proposed Plan (incls. Public meeting) – Various Areas – Munitions and/or Hazardous, Toxic Waste
- Stakeholders / Working Group Meetings – December 2015 and April 2016
- Public Information Meetings – December 2015 and April 2016





# Funding

- Raritan funding:
  - ▶ Funding spent: \$ 92.2M
    - ✓ Allocated, 2013: \$ 1.3M
    - ✓ Allocated, 2014: \$ 1.6M
    - Planned, 2015: \$ 1.6M
  - ▶ Cost to Complete: \$ 41.7 M\*

\* subject to change as remedial investigations progresses



# The CERCLA Process

## Removal Actions

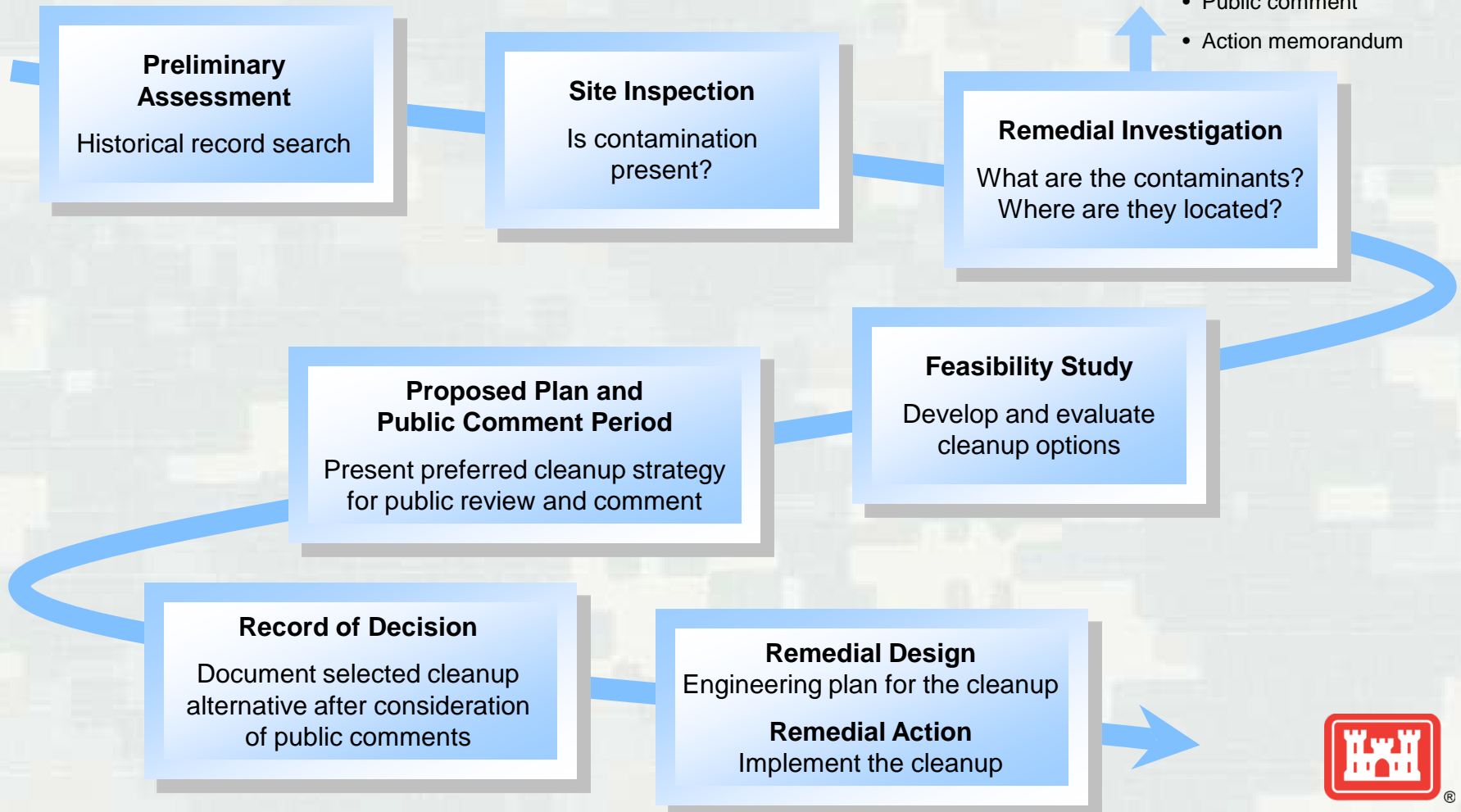
(this can occur at any phase)

Time-critical removal

- Action memorandum

Non-time critical removal

- Engineering evaluation/  
cost analysis
- Public comment
- Action memorandum



# 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



For more information on the USACE's environmental cleanup activities, please visit the USACE's former Raritan Arsenal webpage at:

[www.nan.usace.army.mil/Raritan](http://www.nan.usace.army.mil/Raritan)



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

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

**Public Information Meeting  
9 Dec 2014**

**Edison Senior Citizens Center • 2963 Woodbridge Avenue • Edison • New Jersey**

## **Meeting Summary**

# **Attachment 2 Slides – Munitions Investigation**

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of Engineers®**

## Former Raritan Arsenal Remedial Investigation



*December 09, 2014*

*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 Nearly Complete

This presentation provides information about the progress and results of the munitions remedial investigation.

**We  
Are  
Committed  
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.



# 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
DSAs	Additional Areas (i.e., Sayreville, Crab Island)	645



# A Phased Approach

## Phase I

- Locate buried metallic objects that might be munitions

## Phase II

- Dig up and identify metallic objects
  - *Are they unrelated objects (pipe, rebar, fence posts) or munitions?*

## Phase III

- Sample soil for munitions compounds where munitions were found

Nov 2013

Jan - Oct 2014

Spring 2015





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

- Phase I started in November 2013.
- Vegetation was 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.
- No munitions item were discovered on the surface



# Phase II – Intrusive Investigation (Jan – Oct 2014)



- Phase II started in January 2014, after subsurface anomalies were identified, prioritized and selected for investigation.
- Over 1,400 terrestrial and 30 aquatic anomaly targets were investigated during Phase II.
- 37 of the anomalies were determined to be Material potentially presenting an explosive hazard (MPPEH) while the rest were deemed as cultural debris.
- MPPEH items were identified only in the terrestrial work areas and mainly consisted of MKI French Rifle Grenades and MKII Hand Grenades that were either expended, fragmented and were ultimately determined to be material documented as safe (MDAS).
- For safety reasons during these intrusive investigations, exclusion zones were established to keep “non-essential personnel “out of the areas that are being actively investigated.



# Phase III – Soil Sampling (Spring 2015)

- A visual assessment was made at each of the 37 locations where MPPEH was found, to determine if a release of MC had potentially occurred at any of these locations.
- There was no visual evidence to support additional soil sampling for MC at any of the 37 locations.
- Soil sampling and analysis will be performed in select locations as part of Phase III investigation, primarily with the purpose of collecting background information to compare with historical analytical results.





# Remedial Investigation Reporting (Fall 2014 through 2015)

- Preparation of Remedial Investigation Reports to document the results of the investigations conducted.
- Where further remedial actions are determined necessary, remedial alternatives will be documented in a feasibility study.



# 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.





# Questions

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

Ms. Sandra L. Piettro, Project Manager

Phone – 917-790-8487

Email – [Sandra.L.Piettro@usace.army.mil](mailto:Sandra.L.Piettro@usace.army.mil)



- For more information about investigations at Raritan Arsenal, see the project website:

[www.nan.usace.army.mil/Raritan](http://www.nan.usace.army.mil/Raritan)



- To sign up for future mailings and public meetings:

- Make sure you signed the sign-in sheet tonight
- Send an email to [Sandra.L.Piettro@usace.army.mil](mailto:Sandra.L.Piettro@usace.army.mil)
- Sign up for Edison Township's e-mail/cell phone alerts at [www.edisonnj.org](http://www.edisonnj.org)



*Thanks for your participation!*

