

Public Information Meeting

Former Raritan Arsenal

Edison, New Jersey

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Agenda

- DERP-FUDS
- Site History
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 - Vapor Mitigation Systems
 - Long Term Monitoring (Monitored Natural Attenuation)
 - Path forward
 - ▶ Middlesex County College property
 - ▶ Thomas Edison Park
 - ▶ Commercial / Industrial Area
 - ▶ USEPA property
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 - ▶ Undeveloped Wetlands Area
- Ordnance Investigations
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What is DERP – FUDS?

- Defense Environmental Restoration Program – Formerly Used Defense Sites (DERP–FUDS)
 - ▶ Goals: Complete environmental restoration of the former Raritan Arsenal
 - ▶ Address potential human health and environmental risks associated with past Department of Defense (DOD) activities.
 - ▶ Former Raritan Arsenal project being completed by the U.S. Army Corps of Engineers (USACE)
 - Includes remedial investigation (RI) and cleanup, as appropriate, of 33 soil investigation areas.
 - Includes several groundwater plumes (Areas of Concern – AOCs).



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.
- GSA retained 200 acres of former Arsenal property.



Operable units

- The following six (6) operable units are being addressed:
 - ▶ Site-wide Groundwater (GW) / Indoor Air
 - ▶ Middlesex County College
 - ▶ Thomas Edison Park
 - ▶ Commercial / Industrial Area
 - ▶ USEPA property
 - ▶ Undeveloped Wetlands Area



Indoor Air

- Scope of work: Monitor for volatile organic compounds (VOCs) in indoor air and sub-slab soil gas
 - ▶ Program evaluated all buildings in the Arsenal within 100 feet of established GW plumes
 - 9 buildings remain within AOC 2, 6 & 8 presently undergoing monitoring (indoor air & sub-slab soil gas):
 - ▷ 160 Fieldcrest Avenue
 - ▷ 165 Fieldcrest Avenue
 - ▷ 102-168 Fernwood Avenue
 - ▷ Campus Plaza 4
 - ▷ EPA buildings 10, 18, 200, 205 & 209
 - ▶ These results are documented in the Indoor Air Quality Reports; currently up to report #7
 - ▶ Path forward: IAQ report #7 submitted to NJDEP – Winter 2011



Vapor Mitigation Systems

- Mitigation systems:
 - ▶ 7 buildings: sub-slab depressurization (mitigation) system installed & monitoring
 - Mitigation systems performing as intended; analytical results show decreasing VOC concentrations
 - ▷ 4 buildings: U.S. EPA installed mitigation system; & USACE performing monitoring (EPA bldgs 10, 18, 200, & 205) (within AOC 8)
 - ▷ 2 buildings: USACE installed mitigation system & performing monitoring (160 Fieldcrest Avenue & 102-168 Fernwood Avenue) (within AOC 2 & 6)
 - ▷ 1 building: NJDEP installed mitigation system; USACE performing monitoring (165 Fieldcrest Avenue) (within AOC 2)
- Monitoring only; no mitigation systems installed at 2 buildings: {Campus Plaza 4 & EPA building 209}



GW Long Term Monitoring (LTM)

- Site-wide Groundwater Remedial Action Work Plan (GWRAMP)
 - ▶ AOCs 2 & 8A/B – previously excluded from GWRAMP due to ongoing source investigations; GWRAMP addendum in Winter 2011 to include AOCs 2 & 8A/B
- Site-wide Well Abandonment
 - ▶ 37 wells abandoned – March 2011; these wells are not part of the LTM effort
- USACE implementing the GWRAMP (Monitored Natural Attenuation)
 - ▶ GW sampling schedule
 - First round of sampling – Summer 2010
 - Second round of sampling – Summer 2012
 - Thereafter every five (5) years for thirty years (until 2042)
 - Path forward: Preliminary Draft Report submitted to USACE for review; submitted Draft to NJDEP for review & comments – Aug 2011



Groundwater / Vapor Intrusion (GW/VI) Path Forward

- **Generate a GW/VI Feasibility Study**
 - ▶ Feasibility Study is a document that develops and evaluates cleanup options
 - ▶ Scope of Work: evaluates the need for, and possible alternatives to address, final remedial action for the GW contamination at Areas of Concerns (AOCs) 2, 4A, 4B, 6A, 6B, 6C, 8A/B, 8C, 8D, 9 and 10
 - ▶ Status: a Draft version has been issued to USACE for review; Draft Final will be issued to NJDEP for their review – Winter 2011



Middlesex County College

- Generate a Proposed Plan / Decision Document (PP/DD)
 - ▶ Awarded contractor: Avatar Environmental
 - Scope of work:
 - ▷ Evaluate all previous historical data (HTRW & MMRP) investigations and removal actions
 - ▷ Generate a site specific Human Health Risk Assessment
 - ▷ Based on the findings/results, provide recommendations
 - ▷ Generate a PP/DD
 - Goal: to achieve state regulatory concurrence on Proposed Plan



Thomas Edison Park

- Generate a Proposed Plan / Decision Document (PP/DD)
 - ▶ Awarded contractor: Avatar Environmental
 - Scope of work:
 - ▷ Evaluate all previous historical data (HTRW & MMRP) investigations and removal actions
 - ▷ Generate a site specific Human Health Risk Assessment
 - ▷ Based on the findings/results, provide recommendations
 - ▷ Generate a PP/DD
 - Goal: to achieve state regulatory concurrence on Proposed Plan



Commercial / Industrial Area

- Generate a Proposed Plan / Decision Document (PP/DD)
 - ▶ Awarded contractor: Avatar Environmental
 - Scope of work:
 - ▷ Evaluate all previous historical data (HTRW & MMRP) investigations and removal actions
 - ▷ Generate a site specific Human Health Risk Assessment (HHRA)
 - ▷ Based on the findings/results, provide recommendations
 - ▷ Generate a PP/DD
 - Goal: to achieve state regulatory concurrence on Proposed Plan



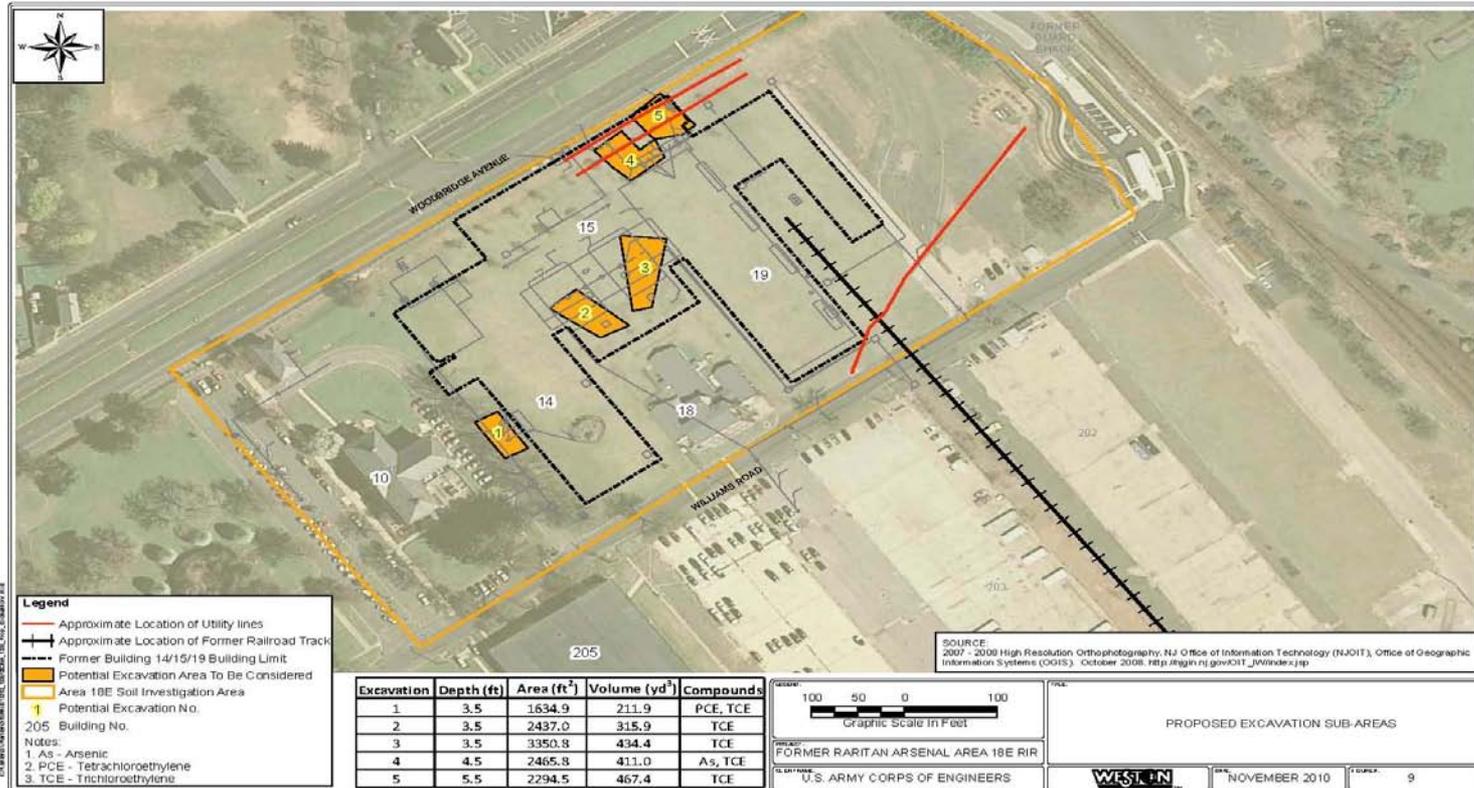
USEPA property

(Areas 18A thru G)

- Generate a Proposed Plan / Decision Document (PP/DD)
 - ▶ Awarded contractor: Avatar Environmental
 - Scope of work:
 - ▷ Evaluate all previous historical data (HTRW & MMRP) investigations and removal actions
 - ▷ Generate a site specific Human Health Risk Assessment
 - ▷ Based on the findings/results, provide recommendations
 - ▷ Generate a PP/DD
 - Goal: to achieve state regulatory concurrence on Proposed Plan
 - ▶ Exception of Area 18D (Area 18D is further discussed on the “New Contract Obligations” slide); USACE anticipates additional investigation and removal action are required



USEPA property (Area 18E) Proposed Excavation Sub Areas



USEPA property (Area 18E)

- Area 18E – Remedial Investigation
 - ▶ Remedial Investigation (field work) completed – December 2009
 - ▶ Final Remedial Investigation report issued to NJDEP for review – Sept 2011
- Area 18E – Remedial Action
 - ▶ Contract awarded to H&S Environmental from Westborough, MA – May 2011
 - ▶ Scope of work: Excavation and Off-Site Disposal of 1,850 cubic yards (equivalent to 90-100 truck loads) of shallow sub-surface soils
 - Work Plan (WP) generated; WP issued to NJDEP for their review; NJDEP approval – Sept 2011
 - Field work commences / (planned) completion: November 2011 / December 2011
 - Completion Report will be submitted to NJDEP for their review – Winter 2011



Undeveloped Wetlands Area

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

- **Generate a Remedial Investigation / Feasibility Study (RI/FS)** {For more info please see - New Contract Obligation slide}
 - ▶ Awarded contractor: CH2M Hill
 - Scope of work:
 - ▷ Evaluate all previous historical data (HTRW & MMRP) investigations and removal actions
 - ▷ Generate a site specific Human Health Risk Assessment
 - ▷ Based on the findings/results, provide recommendations
 - ▷ Generate a RI, FS, Proposed Plan (PP) and Decision Document (DD)
 - ▷ Any munitions discovered during investigation contractor will perform removal action
 - Goal: to achieve state regulatory concurrence of Proposed Plan Decision Document



Area 10 – Status

- Area 10 – aka “Former Wastewater Treatment and Magazine Area”
 - ▶ Scope of work: Contract Modification – Reinstall fence; Fence serves as an Institutional Control as approved in the existing Action Memorandum to protect the public from potential buried ordnance
 - Re-installation commenced / completed – Oct 2011 (one week)
 - ▶ Future work:
 - Discussed on the “New Contract Obligations” slide



Area 10 – Site map



Area 12 – Status

- Scope of work: ordnance removal / clearance in high dense anomaly portions (contractor: USA Environmental)
 - ▶ Status – Investigation commenced / completed – Mar 2009 / Sept 2011
 - Findings: approximately 124,951 lbs of MDAS (combination of Munitions Debris and Cultural Debris) shipped off site
 - Cost to Complete ≈ \$7.7 million (21.423 acres cleared)
 - ▶ A Site Specific Final report will be generated and submitted to NJDEP for review – Winter 2011
 - ▶ Contract modification
 - Background: during ordnance clearance three (3) Underground Storage Tanks (USTs) were found within ordnance clearance areas
 - Scope of work: remove USTs (including all related piping) and complete proper closeout procedures
 - ▷ One (1) USTs (55-gallon drum) containing leaded gasoline dispose – August 2010; Final Closure report submitted to NJDEP for their review – NJDEP approval September 2011
 - ▷ Two (2) USTs (30 gal and 100 gal) containing waste oil, heating oil or kerosene substance dispose – October 2011; Final Closure report will be submitted to NJDEP for their review – Winter 2011
- Future work:
 - ▶ Discussed on the “New Contract Obligations” slide



Area 12 – Status (Cont'd)

- USACE implementing a Vegetation Clearing and Digital Geophysical Mapping utilizing the Air Force Research Laboratory - Range Clearance Technical Demonstration
 - ▶ Awarded contractor – Air Force Research Laboratory (AFRL) – Sept 2010
 - ▶ Contractor to mobilize – Winter 2011 (delayed due to inclement weather)
 - ▶ Scope of work
 - Project calls for vegetation clearance of 10-17 acres at Area 12 and perform subsurface ordnance location (DGM) with autonomous robotics equipment towing and EM-61 array
 - ▷ The following robotic platforms will be used:
 - All-Purpose Remote Transport System (ARTS)
 - Brush Cutter attachment
 - Advanced Mobility Research and Development System (AMRADS) autonomous platform
 - EM-61 towed array
 - Funding to date: \$50k
 - ▶ Digital Geophysical Mapping (DGM) will be provided to awarded contractor (CH2M Hill) to assist with their ordnance clearance removal effects



Area 13 – Status

- Area 13 – aka “The Wharf”
 - ▶ Located in the Raritan River around and near the former Arsenal docks
 - ▶ At this time, no unexploded ordnance or hazardous toxic waste investigations have been conducted
 - ▶ Future work:
 - Discussed on the “New Contract Obligations” slide



New Contract Obligations

Part 1

- Area 5 – Remedial Investigation / Feasibility Study (desktop RI/FS)
 - ▶ Contract awarded to Hydrogeologic, Inc (HGL) from Reston, VA – Sept 2011
 - ▶ Scope of work: to document all previous investigations and findings into a desktop RI/FS
 - The following reports are to be generated:
 - ▷ Work Plan (WP)
 - ▷ Remedial Investigation / Feasibility Study (RI/FS) report
 - ▷ Proposed Plan (PP)
 - ▷ Decision Document (DD)
 - ▶ Goal: to achieve state regulatory concurrence on Proposed Plan / Decision Document



New Contract Obligations

Part 2

- Site-wide MMRP Remedial Investigation / Feasibility Study (RI/FS)
 - ▶ Contract awarded to CH2M Hill from Atlanta, GA – Sept 2011
 - Investigation areas awarded: 1, 6, 6A, 6B, 10, 10C, 11, 12*, 13*, Deepwater Investigation, 16, 18D and 19
* = high priority
 - Scope of work: to prepare, submit and achieve an acceptance on the following reports:
 - ▷ Work Plan (WP)
 - ▷ Remedial Investigation (RI)
 - ▷ Feasibility Study (FS)
 - ▷ Proposed Plan (PP)
 - ▷ Decision Document (DD)
 - ▶ Goal: to achieve state regulatory concurrence on Proposed Plan / Decision Document



FY 2011 – Completed Milestones

- Final – Preliminary Remediation Goals (Human Health Risk Assessment) – October 2010
- Draft – Groundwater / Vapor Intrusion Feasibility Study currently being finalized – Winter 2011
- Preliminary Draft – Ecological Risk Management Report submitted to USACE for review – July 2011; currently being finalized
- Preliminary Draft – Groundwater Remedial Action Work Plan Progress report submitted to USACE for review – March 2011; currently being finalized
- Final – Phase I – Well Abandonment Work Plan and Trip Report submitted to NJDEP – August 2011
- Draft – Groundwater Compliance Monitoring Progress Report submitted to NJDEP – August 2011
- Final – Supplemental Remedial Investigation Report on Area 18E submitted to NJDEP – August 2011
- Revision 1 – Remedial Action Work Plan for Area 18E Removal Actions submitted to NJDEP. Soil removal actions to be completed – Winter 2011
 - ▶ Public review process of the Engineering Evaluation / Cost Analysis (EE/CA) for Area 18E Soil Removal Actions – Sept/Nov 2011
- Continue an indoor air quality evaluations and monitoring (9 buildings)
 - ▶ Final – Annual Indoor Air Quality monitoring report #6 submitted to NJDEP and landowners – Sept 2011
 - ▶ Annual Draft Final – Indoor Air Quality report #7 being finalized; final report will be submitted to NJDEP and landowners – Winter 2011.
- Area 5: Generate a Remedial Investigation report to document the completion of chemical warfare materiel (CWM) removal actions; contract awarded – Sept 2011
- Site-wide Military Munitions Response Program (MMRP) contract awarded – Sept 2011
- Area 12: removal activity at Area 12 completed – Sept 2011



FY 2012 – Planned Future Activities

- Continue indoor air and sub-slab monitoring at select buildings
- Area 5: Generate a desktop remedial investigation report to document removal of chemical warfare material (CWM) project
- Area 12: A Site Specific Final report will be generated and submitted to NJDEP for review – Winter 2011
- Area 18E: Soil removal action commences/completes; Prepare a Remedial Action Completion Report – Winter 2011
- Site-wide Military Munitions Response Program (MMRP): Commence investigation of the awarded areas; Prepare Remedial Investigation report
- GW Long Term Monitoring (Monitored Natural Attenuation) addendum – Summer 2012
- Prepare Annual Indoor Air Quality (IAQ) report #7 – Winter 2011
- Prepare PP / DD for Middlesex County College, Thomas Edison Park, Commercial / Industrial Area, USEPA property
- Prepare Final – Groundwater / Vapor Intrusion Feasibility Study
- Prepare Final – Preliminary Remediation Goals (Human Health Risk Assessment)
- Prepare Final – Ecological Risk Management Report
- Prepare Final – Groundwater Remedial Action Work Plan Progress Report
- Prepare Final – Groundwater Compliance Monitoring Progress Report
- Prepare Draft Phase II – Well Abandonment Work Plan
- Revise Management Action Plan
- Update Community Relations Plan
- Public Information meeting scheduled for Wednesday, November 9, 2011



Incident on 13 October 2011

- On Thursday, October 13, 2011 – A private contractor, working in the Raritan Business Center Industrial area unearthed an MK III (10" diameter, 1.16 meters long) during their parking lot renovations.
- Navy Explosive Ordnance Disposal (EOD) unit from Colts Neck, NJ responded; removed the item and detonated it on Oct. 17th; the item did not contain high explosives.
- NJ State Police Bomb Squad deemed the site safe after the item was removed.
- Private property owner / private contractor followed the 3R's of Explosive Safety
 - ▶ RECOGNIZE — when you may have encountered a munitions shell
 - ▶ 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
- Synopsis:
 - ▶ An unusual incident;
 - ▶ USACE project team worked with the local authorities so that in the event something like this comes up, all the partners are prepared to handle it;
- Goal: The incident was handled safely and efficiently by the proper authorities



Photos of Munitions Shell Finding at 30 Clearview Road



MMRP (Ordnance) Safety Education

- "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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