

Inter-Agency Partners Meeting

Tuesday, December 11th, 2012				[**Upcoming Meetings: February, April?]
TIME	TOPIC	DISCUSSION LEADER	PREPARATION	OBJECTIVE
9:15 - 9:30	Check-in / Review Ground Rules	J. Sweeney		Introductions of new attendees/ Personal check-in / Lunch plans/ Review Ground Rules
9:30 - 10:10	4825 Glenbrook Road	B. Barber/Parsons		Final Remedial Design and Remedial Action Work Plan / Schedule Update
10:10 - 10:25	Groundwater	T. Beckwith		Summary of Nov. 14 th Groundwater mtg
10:25 - 10:40	BREAK			[Give Lunch \$ to Carrie or Rebecca]
10:40 - 11:25	Site-wide RI/FS	L. Reeser/ T. Bachovchin		MEC-HA
11:25 - 12:10	Site-wide Evaluation Document	L. Reeser/T. Bachovchin		Pre-2005 HHRA Review AOI preliminary sampling results
12:10 - 12:40	ARB meeting [Working Lunch]	D. Noble/T. Colozza		
12:40 - 12:50	Document Tracking Matrix for MMRP/HTW	L. Reeser/ Parsons	Partners Review	Review pending documents
12:50 - 1:00	Open Issues and New Data	J. Sweeney		
1:00 - 1:15	Partners' Parking Lot	J. Sweeney	Partners Review	
1:15 - 1:25	Agenda Building	J. Sweeney		** Discuss meetings every 2 months
1:25	Adjourn	J. Sweeney		

**Spring Valley Partnering Meeting
December 11, 2012
Spring Valley Trailer Conference Room**

Name	Organization/Address	X
Sherri Anderson-Hudgins	CEHNC	X
Thomas Bachovchin	ERT	X
Brenda Barber	CENAB	X
Todd Beckwith	CENAB	X
Bethany Bridgham	American University	X
Jessica Bruland	ERT	X
Sean Buckley	Parsons	X
Paul Chrostowski	CPF Associates, AU Consultant	X
Tom Colozza	CENAB	
Jennifer Conklin	DDOE	
Kathy Davies	US EPA Region 3	
Dr. Peter deFur	Environmental Stewardship Concepts/RAB TAPP Consultant	X
Diane Douglas	DDOE	
Bill Eaton	URS	
Brandon Fleming	USGS	
Alma Gates	RAB Member - Horace Mann Rep.	X
Steve Hirsh	US EPA Region 3	X
Leigh Isaac	Environmental Stewardship Concepts	
David King	CENAB	
Carrie Johnston	RCAI - Community Outreach Team	X
Neil Jones	ERT	
Dan Noble	CENAB	X
John Owens	CENAB	

Randall Patrick	Parsons	X
Lan Reeser	CENAB	X
Mike Rehmert	CENAB	
Paul Rich	Parsons	
Allen Shapiro	USGS	
Don Silbacher	Parsons	
Jim Sweeney	DDOE	X
Andrea Takash	CENAB, Public Affairs	
Fan Wang-Cahill	Parsons	
Ethan Weikel	CENAB	
Nan Wells	ANC3D Commissioner	X
Cheryl Webster	CENAB	X
Maya Werner	ERT - Community Outreach Team	
Laura Williams	Environmental Stewardship Concepts	
Bruce Whisenant	CEHNC	
Rebecca Yahiel	ERT - Community Outreach Team	X
Doug Yeskis	USGS	

Summary of December 11 Spring Valley Partnering Meeting

Consensus Decisions

- Partner concurrence was provided for the recommended anomalies to be dug at the 3700 block of Fordham Road property. Additional modifications to the ARB memo as requested below.
- Partner concurrence was obtained for scheduling future Partnering meetings every other month, with additional Partnering meetings as needed.

December 11, 2012 Action Items

- USACE-Baltimore Public Affairs will provide a Drop box link to 4825 Glenbrook Road demolition effort photographs to EPA, as requested.
- USACE-Baltimore will provide a copy of the 4825 Glenbrook Road Work Plan and Demolition Update presentation to EPA as soon as it is updated to reflect the current tentative remedial action schedule.
- A groundwater conference call is tentatively planned for January 2013 to finalize proposed efforts and to resolve any remaining concerns, in lieu of a formal meeting.

- USACE-Baltimore and ERT will take the soil-groundwater pathway under consideration as part of the pre-2005 HHRA review process and COPC evaluation, as requested by EPA.
- USACE-Baltimore will make the recommended revisions to the 4700 block of Fordham Road property ARB memo and distribute the memo for signatures. The memo will be corrected to include all accessible “A/B/C” anomalies underneath hardscape, as long as they can be investigated without damaging the hardscape, as requested by EPA and DDOE.

Wednesday, December 11, 2012

Check-in

The Partners conducted their normal check-in procedure.

Personnel from the ECBC Environmental Monitoring Branch attended the meeting for the purpose of listening to updates on Spring Valley project progress.

A. 4825 Glenbrook Road Work Plan and Demolition Update

The goal of this segment of the meeting was to discuss the accelerated schedule guiding the decision-making process and the upcoming remedial action for the 4825 Glenbrook Road site.

USACE-Baltimore and Parsons provided an update on the draft final Site-Specific 4825 Glenbrook Road Draft Remedial Design and Remedial Action Work Plan.

Pre-decisional draft work plan updates were previously presented at the April/May/July/September 2012 Partnering meetings.

House Demolition: House demolition was completed in early December 2012, followed by removal of associated debris from the site. Remaining structural elements include the basement walls and the basement slab, which will be removed during high-probability excavations.

Site Preparations: Guard station mobilization is completed and includes electricity connections provided by an electrical contractor. AU granted right-of-entry for access to their power sources. The site was secured.

Public Outreach: A media day was held in late November 2012. USACE Headquarters and media outlets produced several video clips.

Near-term Activities: Limited site preparations will be conducted prior to securing the site for the winter holidays. Construction trailer mobilization on AU’s campus will include electricity connections similar to those completed for the guard station.

Initial low-probability efforts are tentatively scheduled to begin in January 2013, concurrently with site preparations for high-probability efforts including installation of fencing and soldier piles. Construction of the engineering control structure (ECS) tent and setup of ECS support equipment are anticipated in February and March 2013. Details of site preparation activities were described at the September 2012 and previous Partnering meetings.

Tentative Document Schedule: An accelerated document review schedule is underway for the following work plan documents. (Details of planned review time frames were provided at the January 2012 Partnering meeting.)

- The Demolition Plan was finalized in February 2012. This document was incorporated into the Site-Specific Work Plan so that both documents can be reviewed concurrently.

- The Chemical Safety Submission (CSS) Annex for Remedial Action was finalized and submitted in August 2012. Final DDESB acceptance of the CSS was obtained later in 2012.
 - DDESB approval was granted based on the AEGL-2 for lewisite as the maximum credible event (MCE) (29 meters, equivalent to 96 feet). This hazard distance is based on the evaporative release of 1 L of lewisite, and was stipulated by DDESB because the MCE must be based on a chemical agent. In contrast, the finalized CSS describes the TEEL-1 for arsenic trichloride as the MCE (59 meters, equivalent to 194 feet). This hazard distance is based on the evaporative release of 1 L of arsenic trichloride and is more conservative than the hazard distance for lewisite. Details of the MCE selection process were provided at the September 2012 and previous Partnering meetings, with discussion below.)
 - Both MCE chemicals (lewisite and arsenic trichloride) will be monitored during remedial activities at the site. From the approval standpoint, this will ensure that the DDESB approval conditions are met. From the public protection perspective, briefings will continue to focus on arsenic trichloride as the more protective MCE with a more conservative hazard distance.
- The draft final Site-Specific Work Plan for Remedial Design and Remedial Action is currently under revision by USACE to incorporate additional Partner comments. Finalization is anticipated in January 2013.

Tentative Remedial Action Schedule: Three phases of remedial action are planned: demolition (completed), the remaining low-probability test pits in the back yard including the utility trench, and all planned high-probability and low-probability soil removal areas.

Preliminary site mobilization activities, such as public space and building permit applications, and house demolition are completed.

Initial low-probability efforts are tentatively anticipated to begin in January 2013 (including test pits and trenches, utility rerouting, and site preparations for high-probability efforts). High-probability soil removal will tentatively begin in March 2013, with completion anticipated in December 2013. The remaining low-probability soil removal actions (excavation areas A/B) will be conducted in Winter 2013-2014, followed by site restoration in Spring 2014. The remediated property will be returned to AU as early as April 2014.

Discussion – Tentative Document and Remedial Action Schedule

USACE mentioned that the site looks completely different following house demolition.

USACE clarified that the tentative remedial action schedule detailed in the presentation has not been updated to reflect current planned time frames. An updated schedule will be distributed electronically to the Partners.

AU confirmed that their draft final remedial action and remedial design work plan comments are currently in preparation.

AU noted that President Kerwin expressed interest in the upcoming remedial action schedule. In response to USACE's inquiry, AU confirmed that each two-week preview of upcoming activities is effective for keeping President Kerwin informed.

Discussion – Revised MCE

EPA asked whether the finalized CSS was revised to include the newly approved MCE based on 1 L of lewisite. USACE and Parsons clarified that although the document specifies a more conservative MCE based on arsenic trichloride, DDESB approved the document based on the AEGL-2 for lewisite with a 29-meter hazard distance. In the approval memo and associated e-mails, DDESB did not state that they

disagreed with the arsenic trichloride MCE; they simply referred to the lewisite MCE instead. Air monitoring at the site will be conducted for both contaminants (arsenic trichloride and lewisite).

In response to EPA's inquiry, USACE explained that the CSS is typically provided to the Partners upon final DDESB acceptance. The CSS will be distributed to the Partners along with the DDESB approval memo, which specifies the approved lewisite MCE, in lieu of revising the finalized CSS.

In response to an inquiry from Nan Wells, ANC3D Commissioner, USACE clarified that the CSS is an internal safety document that is typically not available to the public.

Discussion – Demolition Effort

USACE agreed to send a copy of the PowerPoint presentation to EPA, as requested, as soon as it is updated to reflect the current tentative remedial action schedule.

EPA mentioned that they are primarily interested in the site photographs shown in the presentation, particularly with respect to the spatial relationship between 4825 Glenbrook Road and the 4830 Glenbrook Road property across the street. USACE replied that many demolition effort photographs are available, including numerous photographs reflecting the distance between the two properties. USACE Public Affairs offered to send a Drop box link for viewing these photographs to EPA.

USACE shared a short video clip of the house demolition effort that was produced by USACE Headquarters. Numerous media clips and photographs are available for those who could not attend the demolition. USACE Public Affairs offered to e-mail the video link to anyone who is interested.

N. Wells commented that the house demolition was extraordinary and fascinating to witness. DDOE expressed their surprise at how easily the house structure came down. USACE-Huntsville added that demolition was completed more quickly than anticipated.

In response to AU's inquiry, USACE replied that all neighboring homeowners have been briefed on the Public Protection Plan contents in preparation for high-probability excavations. The exception is AU President Kerwin, who will be briefed pending receipt of feedback from his staff regarding his individual preferences for how the briefing will be conducted. Additional briefings are scheduled for 4830 Glenbrook Road, as requested by the homeowners.

Next Steps

USACE will provide a Drop box link to 4825 Glenbrook Road demolition effort photographs to EPA, as requested.

USACE will provide a copy of the 4825 Glenbrook Road Work Plan and Demolition Update presentation to EPA as soon as it is updated to reflect the current tentative remedial action schedule.

B. Groundwater Study Efforts

The goal of this segment of the meeting was to provide an update on ongoing and upcoming groundwater study efforts.

USACE-Baltimore provided an update on the status of ongoing and upcoming groundwater study efforts. (Details of these groundwater study efforts were provided at the May 31, 2012 Groundwater-Partnering meeting. Updated information was provided at the July/September 2012 Partnering meetings and the November 2012 Groundwater meeting.)

Groundwater Meeting: Recently completed groundwater study efforts and proposed future efforts were discussed at the November 2012 Groundwater-Partnering Meeting. No consensus decisions were made but the Partners identified that additional groundwater and surface water monitoring data is needed to support preparation of the Site-Wide Groundwater Remedial Investigation (RI) and Feasibility Study

(FS). Revised conclusions and recommendations reflect the suggestions made during the groundwater meeting.

Additional Deep Wells: Two additional deep wells are tentatively planned to provide additional vertical delineation of groundwater. Proposed locations include the area between MP-3 and MP-4 (in the vicinity of Indian Lane or further down Rockwood Parkway) and close to Sibley Hospital.

The proposed deep well between MP-3 and MP-4 will tentatively be drilled to a depth of approximately 200 feet and sampled using a FLUTE liner (similar to other deep FLUTE wells). The proposed well near Sibley Hospital will tentatively be drilled to a depth of 100 feet with nested well screens (similar to the recently-completed MW-45S/D at AU's campus).

Semi-Annual Sampling: Concurrence is pending for the list of groundwater monitoring wells and surface water locations proposed for semi-annual sampling.

Tentative Schedule: Revised conclusions and recommendations will be distributed to the Partners pending minor changes. A groundwater conference call is tentatively planned for January 2013 to finalize proposed efforts and to resolve any remaining concerns, in lieu of a formal meeting.

Discussion – Future Groundwater and Surface Water Monitoring

In response to Dr. Peter deFur's inquiry, USACE replied that the proposed deep well near the Sibley Sump will be screened at two elevations, depending on down hole geophysics results. Due to the significant elevation difference in this area, the planned maximum well depth of 100 feet should be sufficient for providing the desired vertical groundwater delineation.

USACE noted that funding has not been allocated for future groundwater and surface water monitoring. Additional deep well installations can be proposed for FY2013 in case the necessary funding becomes available. If funding cannot be obtained during FY2013, then proposed deep well installations can be considered for FY2014.

AU asked whether preparation of the site-wide groundwater RI/FS would move forward regardless of funding availability for future monitoring efforts. USACE confirmed that URS is currently under contract to write the RI report and will move forward with this task. Additional data for the RI report will be collected when possible.

P. deFur noted that the rationale for sampling existing groundwater monitoring wells and surface water locations is well established among the Partners. The purpose and rationale for installing additional deep wells should be briefly captured within the revised conclusions and recommendations, to explain how these proposed wells will be informative for making future groundwater monitoring decisions. USACE agreed and noted that these proposed additional deep wells would provide additional groundwater data, although the Partners and their hydrogeologists may disagree whether the anticipated data is necessary.

DDOE mentioned that their hydrogeologist has begun to review the list of groundwater monitoring wells and surface water locations proposed for semi-annual sampling. This topic was not discussed in detail at the November 2012 Groundwater Meeting and feedback from DDOE's hydrogeologist is pending.

USACE clarified that the list of existing groundwater monitoring wells and surface water locations proposed for semi-annual sampling was previously provided to the Partners, electronically and via hard copy, for review and feedback. [The initial list was provided at the May 31, 2012 Groundwater-Partnering meeting and details were provided via a follow-up e-mail to the Partners. This effort was briefly discussed at the September 2012 Partnering meeting and the November 2012 Groundwater meeting.]

Next Steps

A groundwater conference call is tentatively planned for January 2013 to finalize proposed efforts and to resolve any remaining concerns, in lieu of a formal meeting.

C. Site-Wide MEC Hazard Assessment (MEC HA)

The goal of this segment of the meeting was to provide an update on the site-wide MEC HA contents and approach.

USACE-Baltimore and ERT provided an update on the site-wide MEC HA contents and approach. Preliminary details of this topic were shared at the September 2012 Partnering Meeting and are reflected in the detailed overview below, along with updated information. Additional details of this topic will be shared at upcoming Partnering meetings, pending further internal discussion and development.

Background: The Munitions and Explosives of Concern Hazard Assessment (MEC HA) is the ‘explosive hazard’ component of a Human Health Risk Assessment (HHRA). This assessment fits into MMRP and CERCLA project requirements, and addresses the National Contingency Plan’s (NCP) requirement to conduct site-specific risk assessments for threats to human health and the environment.

The MEC HA reflects the fundamental difference between chronic chemical contaminant exposure risk and acute MEC explosive hazards. This assessment is prepared using guidance (titled the MEC Hazard Assessment Methodology, Interim October 2008) developed by representatives from the DoD, DOI, EPA, and other agencies.

Purpose: The MEC HA is designed to support the hazard management decision-making process by analyzing site-specific information to assess existing explosives hazards, evaluate hazard reductions associated with removal and remedial alternatives, and evaluate hazard reductions associated with land use activity decisions.

The MEC HA addresses human health and safety associated with potential exposure to MEC at MRSs. This assessment does not address chemical warfare materiel (CWM) even though MEC items can contain CWM. The MEC HA guidance states that the CWM’s chemical agent components present a greater human health hazard than the CWM’s explosive components, and concludes that the greatest human health risk presented by CWM is the chemical agent component (not the explosive component).

Applicability to the Spring Valley FUDS: The Site-Wide MEC HA for Spring Valley will be organized around three primary activities that were identified via historical records for scoring the MEC HA. These include ballistically fired testing areas, statically fired testing areas, and disposal areas (which are further subdivided into known and possible disposal areas).

Preliminary color-coded maps were developed to assess the distribution of AUES-related MEC and MD items, the most probable source of each item (known or possible disposal, static-fire, or ballistic-fire), and specific areas representing these three activity sources.

Ballistic fire areas: The ballistic fire areas are represented by the range fan. Ballistic fire areas are characterized by relatively long-range testing of AUES-related items such as 3-inch and 4-inch Stokes mortars and 8-inch Livens projectiles, which present potential UXO hazards throughout the range fan. The range fan comprises three separate areas of specific activity as follows:

- **Firing Point** – This area is represented by a single residential property (4700 block of Woodway Lane).
 - This area has been thoroughly investigated. No MEC HA score is recommended.
- **Range Safety Fan (also referred to as the Safety Buffer)** – This area is represented by safety buffers for each munition type (Stokes mortars and Livens projectiles). These safety buffers were grouped and scored together for the MEC HA evaluation, instead of evaluating each safety buffer separately.
 - Preparation of a MEC HA score is recommended.

- **Target Area (also referred to as the Impact Area)** – This area is represented by target areas for each munition type (Stokes mortars and Livens projectiles), and these target areas were grouped and scored together for the MEC HA evaluation.
 - Preparation of a MEC HA score is recommended.

Recommendations for the overall range fan focus on assessing the component parts separately (firing point, range safety fan, and target area). The range fan is not evaluated as a single unit due to the different hazards associated with the different component areas.

Static fire areas: A total of five static fire areas have been identified to date. Static fire areas are characterized by controlled testing of AUES-related items such as 75 mm projectiles, which present potential UXO hazards in relatively limited areas. These include:

- **POIs 39/10/11 (Static Test Fire Area and smaller areas encompassed within POI 39)** – These POIs are grouped into a discrete area defined by the POI 39 footprint. POI 39 is believed to have been used for statically fired munitions containing chemical agent, and seven statically fired 75 mm shells were recovered in this area to date. This area contains the smaller POI 10 (possible static test site or observation dugout) and POI 11 (ground scars).
 - Assessment for possible Discarded Military Munitions (DMM) disposal pits (described below). No individual MEC HA score is recommended.
- **POI 9 (Possible Firing or Observation Stalls)** – This is a possible remote static fire area, located approximately 350 feet east of POIs 39/10/11. Many MD items were recovered here.
 - Assessment for possible DMM disposal pits (described below). No individual MEC HA score is recommended.
- **POI 1 (Sedgwick trenches)** – This area is associated with a possible disposal area (POI 2, described below). Livens projectiles and 75 mm shells containing CWM were statically fired in the center of the circular trenches.
 - Assessment for possible DMM disposal pits (described below). No individual MEC HA score is recommended.
- **POI 13 (52nd Court trenches)** – This area is associated with a known disposal area (the original 1993 burial pit containing MEC/MD) that was situated 150 feet from the static fire area. Livens projectiles and 75 mm shells containing CWM were statically fired in the center of the circular trenches.
 - This area has been thoroughly investigated. No MEC HA score is recommended.
- **POIs 21/22/23 (4700 block of Woodway Lane concrete bunkers)** – This area contains historical locations of chambered shell pits (POIs 21/23) that were used to test the physical properties of explosives and chemical warfare agent (CWA) and a shell pit (POI 22) that is incorporated into the utility room of the existing house. Soil was removed from the bunkers during previous investigations.
 - This area has been thoroughly investigated. No MEC HA score is recommended.

Static test fire areas do not represent MEC concerns because individual items would have been monitored and controlled during the testing process. No individual MEC item would have been left behind because any item that did not properly fire would have been immediately identified and retrieved. (As described at the September 2012 Partnering meeting, MEC/MD findings in the vicinity of these areas were evaluated to identify whether they are associated with potential static firing kick-out areas instead of the range fan.)

Static test fire activities may suggest the presence of DMM burial pits near these testing locations, similar to the findings at POI 13 (52nd Court trenches). Workers may have walked a practical distance (150 feet is

used, conservatively, based on observations at POI 13 and POI 2) to bury DMM generated through the static testing. This distance may apply to potential disposals conducted for other static fire areas, such as the high anomaly concentration at the 3700 block of Fordham Road property.

Most residential properties within the 150-foot radius around static fire areas have been geophysically investigated. The remaining properties may be recommended for further geophysical data collection and investigation. Additionally, the geophysical survey findings at POI 2 (possible pit), which is associated with POI 1 (Sedgwick trenches), were reviewed to identify areas for possible further geophysical investigation and to identify possible DMM burial pits.

Known disposal areas: A total of five known disposal areas have been identified to date. These are based on previous investigation findings and include:

- **4800 block of Glenbrook Road (4801/4825)** – Burial Pits 1 and 2 have been fully investigated. Burial Pit 3 has been partially investigated with upcoming remedial action at 4825 Glenbrook Road.
 - A MEC HA was previously completed for 4825 Glenbrook Road in preparation for the upcoming remedial action.
 - The 4801 Glenbrook Road property has been thoroughly investigated. No MEC HA score is recommended.
- **52nd Court trenches (POI 13)** – The original 1993 burial pit (POI 14) was excavated and is associated with circular trenches static fire testing at POI 13.
 - This area has been thoroughly investigated. No MEC HA score is recommended.
- **Lot 18 (small portion of AU campus)** – Many MD items were recovered during excavation. No MEC items were found.
 - This area has been thoroughly investigated. No MEC HA score is recommended.
- **5000 block of Sedgwick Street** – Numerous MD items in a small pit and one MEC item (a 3 inch Stokes mortar) were recovered near POI 5 (Possible Pit) and POI 6 (Possible target or test site, referred to as a ‘TARGET’ area on a 1918 topographic map. This area may represent cleanup of ballistic fire activities because it is situated within the Stokes target areas, but the numerous 75 mm MD items are not associated with ballistic fire activities and may be associated with potential static firing kick-out areas.
 - This area has been thoroughly investigated. No MEC HA score is recommended.
- **4900 block of Quebec Street** – MEC findings included part of a thermite grenade and a box of approximately 60 fuzes or detonators associated with POI 18 (Small Crater Scars and possible former impact area). No further site history information was located.
 - This area has been thoroughly investigated. No MEC HA score is recommended.

Potential disposal areas: A total of three potential disposal areas have been identified to date. These are considered possible disposal areas based on a weight of evidence assessment using previous investigation findings, but it is not certain that they contain buried munitions. MEC HA scores are difficult to calculate for areas where the presence of munitions is uncertain, but can be calculated if additional pertinent information is obtained. These include portions of:

- **AU Public Safety Building (small portion of AU campus)** – The AU PSB is an active campus building. Lot 18 excavations extended to the edge of the building footprint but did not extend underneath the building. One MEC item was found close to the building during the subsequent PSB investigation and soil sampling results from underneath the building did not rule out the possibility of munitions.

- This area may require a MEC HA score.
- **AOI 13 (Quebec/Woodway 13)** – This area contains 13 residential properties containing multiple ground scars, including POI 26 (Small Crater Scars), a total of 3 historical AUES buildings, and the northern edge of the range fan. Findings included a pipe with explosives (TNT) and miscellaneous MD items situated close to the range fan firing point at 4700 block of Woodway Lane. Of the 11 properties that were thoroughly investigated, four of these were completed prior to the 2008 digital geophysical mapping (DGM) anomaly classification scheme.
 - This area may require a MEC HA score.
- **3700 block of Fordham Road** – This property contains POI 2 (Possible Pit) where disposal of DMM or other AUES-related materials may have occurred. Geophysical data revealed anomalies potentially associated with the Sedgwick trenches (similar to the 52nd Court burial pit near the circular trenches). Right-of-entry was not granted for anomaly investigations and the property is currently inaccessible.
 - This area may require a MEC HA score.

An additional category of potential disposal areas is as follows:

- **Generic disposal area or burial pit** – This is intended as a means to score a worst-case scenario to represent any of the possible disposal areas or burial pits above, where no specific findings are available.
 - Preparation of a **generic MEC HA score** for the worst-case disposal area or burial pit scenario is recommended.

Site-Wide MEC HA Scoring Components: The MEC HA scoring is organized around several factors including summarized general site information, information on MEC and bulk explosives present at the site, current land use activities and planned future activities (if any), general information regarding remediation/removal alternatives being considered for the site (including Land Use Controls (LUCs) such as fencing, signage, deed restrictions), and post-response land use activities associated with the potential remediation/removal alternatives.

Site-Wide MEC HA Input Factors: The MEC HA framework is organized into three explosive hazard components. These include:

- **Severity** – This is defined as the potential consequences of the effect on a human receptor in the event that a MEC item detonates. Input factors include the type of energetic material and the location of additional human receptors.
- **Accessibility** – This is defined as the likelihood that a human receptor will be able to interact with a MEC item. Numerous input factors include site accessibility, potential contact hours, the amount of MEC, the minimum MEC depth relative to the maximum receptor intrusive depth (associated with activities such as landscaping or utility work), and the migration potential of MEC.
- **Sensitivity** – This is defined as the likelihood that a MEC item will detonate in the event that a human receptor interacts with it. Input factors include MEC classification and MEC size.

Site-Wide MEC HA Output: The MEC HA scoring worksheet provides specific output categories (ranging from 1 to 4) based on hazard input factors and values. This tool can be used in different ways, such as identifying additional residential properties where further geophysical investigation is warranted. Each remedial/removal action scenario assessed by the MEC HA produces a score that is associated with one of the four Hazard Levels, reflecting the interaction between the current or future human activities in a MRS, and the types, amounts, and conditions of MEC items within the MRS.

The Hazard Levels for the MEC HA are based on relative numeric scores ranging from 125 to 1000. A particular score does not define specific actions that must be taken; instead, these are relative hazard levels based on numerous modeled factors for the purpose of making sound project decisions. Hazard levels include:

- **Hazard Level 1** – 840 - 1000 (sites with the highest hazard potential)
- **Hazard Level 2** – 725 - 835 (sites with a high hazard potential)
- **Hazard Level 3** – 530 - 720 (sites with a moderate hazard potential)
- **Hazard Level 4** – 125 - 525 (sites with low hazard potential)

Site-Wide MEC HA Score Summary: Preliminary MEC HA scores were presented in a table for each of the Spring Valley FUDS areas proposed for MEC HA scoring (as described above). MEC HA scores were calculated for the following areas:

- **Safety Buffer (Ballistically Fired)** – MEC HA scores range from 475 to 635.
 - Current use activities: Hazard Level 3 (moderate) with score 635
 - Response alternative 1 (LUCs): Hazard Level 3 (moderate) with score 570
 - Response alternative 2 (Subsurface cleanup): Hazard Level 4 (low) with score 475
- **Target Area (Ballistically Fired)** – MEC HA scores range from 500 to 785.
 - Current use activities: Hazard Level 2 (high) with score 785
 - Response alternative 1 (LUCs): Hazard Level 3 (moderate) with score 720
 - Response alternative 2 (Subsurface cleanup): Hazard Level 4 (low) with score 500
- **Possible Disposal Area (Generic / Worst Case)** – MEC HA scores range from 405 to 670.
 - Current use activities: Hazard Level 3 (moderate) with score 670
 - Response alternative 1 (LUCs): Hazard Level 3 (moderate) with score 605
 - Response alternative 2 (Subsurface cleanup): Hazard Level 4 (low) with score 405

Tentative Schedule: Further development of draft MEC HA scores is pending feedback from the USACE Center of Expertise (CX). The site-wide MEC HA was developed with expertise from Paul Greene (USACE-Baltimore explosives safety manager and team leader). [P. Greene formerly worked for USACE and recently served as ERT's military munitions program manager, and recently returned to his position at USACE.]

Discussion – MEC HA Terminology

In response to AU's inquiry, ERT explained that the acronym 'MRS' stands for a munitions response site. The Military Munitions Response Program (MMRP) defines this specific terminology. MMRP project sites are initially addressed based on munitions response areas (MRAs), which are further subdivided into munitions response sites (MRSs). To date, areas of the Spring Valley FUDS have not been categorized as MRSs due to the lengthy duration and nature of the Spring Valley project, but this terminology will be integrated into the Site-Wide RI/FS process. USACE added that MRSs sometimes roughly correspond to Areas of Interest (AOIs) and Points of Interest (POIs) at a project site.

Discussion – Ballistic Fire, Static Fire, and Disposal Areas

EPA inquired about the number of MEC items found to date within the range fan. ERT clarified that a total of four MEC items are represented as stars on the preliminary figures.

ERT mentioned that MEC and MD findings are categorized by specific type (such as 75 mm MD) with small-scale symbols on the preliminary figures. This serves as a useful tool for the MEC HA as well as for other aspects of the Site-Wide RI. All MEC/M locations were previously presented using a different categorization scheme on the familiar large geophysical finds figure prepared by Parsons in July 2012, where color-coded dots represented different types of pre-1998 and post-1998 findings.

ERT noted that P. Greene, the current OE Safety lead for USACE-Baltimore, and SOO L. (JR) Martin provided their expertise and assistance with addressing munitions and scoring the MEC HA. USACE noted that P. Greene recently resigned from his government position, worked for ERT for a brief period during which he provided input on the MEC HA scoring, and then returned to his position at USACE.

In response to an inquiry from Alma Gates, RAB Member, ERT replied that the thermite grenade was classified as MEC. USACE explained that this item contained thermite as an incendiary, with the purpose of igniting a fire upon use of the grenade.

ERT noted the highly controlled nature of historic static test fire activities within circular trenches, as described in the presentation above. Burial of DMM near the static test fire activities within walking distance, depending on topography and property boundaries, is a reasonable scenario. The 150-foot distance was calibrated based on the known association between POI 13 (52nd Court Trenches) and POI 14 (the original 1993 disposal pit), and based on geophysical results near POI 1 (Sedgwick Trenches).

USACE emphasized that the 150-foot distance sounded like a reasonable maximum walking distance to P. Greene and JR, who provided their professional opinions on the maximum distance that AUES personnel would want to carry non-functioning munition items away from the static fire site for burial purposes. Their opinions are pertinent because too many variables exist to make predictions based on current physical site evidence. The spatial relationship between POI 1 (Sedgwick Trenches) and POI 2 (Possible Pit) provides further affirmation of this 150-foot walking distance, which incorporates both features. If POI 2 is fully investigated and found not to contain AUES-related static fire items, then this reasoning may be incorrect. It is also possible that non-functioning items associated with POI 1 were buried closer to the trenches.

P. deFur inquired about access to historical AUES field manuals. USACE confirmed that manuals from the AUES time frame are available but are unlikely to specify walking distances for burial purposes. ERT added that disposals were likely based on topographic logistics, such as distant disposals in flat terrain and close disposals in sloped depressions. DDOE offered to check with Rich Albright regarding distances specified in these manuals.

N. Wells questioned the lack of written disposal records and commented that it seems dangerous to hand-carry such items. USACE clarified that hand-carried items might be safer than using a wheelbarrow, and AUES personnel were unlikely to walk long distances carrying static fire items. ERT added that AUES personnel engaged in many dangerous activities during that time frame, and hand-carrying munitions items would not be unheard of back then.

In response to EPA's inquiry, USACE replied that a single MD item was found in a test pit at the 4835 Glenbrook Road property (adjacent to the 4825 Glenbrook Road site). No MEC items were recovered at this property.

USACE clarified that geophysical investigations were completed at approximately five residential properties adjacent to or in the vicinity of 4900 Quebec Street, where part of a thermite grenade and a box of approximately 60 fuzes or detonators associated with POI 18 were recovered. These include two adjacent properties to the west and across the street to the north.

ERT added that geophysical coverage shading was not shown on some of the preliminary maps to minimize visual overcrowding and to enhance visibility of small MEC/MD symbols. USACE confirmed that geophysical coverage would be shown on finalized maps to support conclusions regarding the need

for further geophysical investigation. USACE provided a hard copy of the large July 2012 geophysical coverage and MEC/MD findings map to EPA at the meeting.

In response to EPA's inquiry, ERT explained that 4700 block of Woodway Lane was not identified as a potential disposal area because this property was already thoroughly investigated. With respect to MEC HA scores, no additional AUES-related findings are anticipated at the property.

N. Wells inquired about the extent of thorough investigation at the 4700 block of Woodway Lane property. USACE replied that the entire property was geophysically surveyed, followed by investigation of all anomalies. Some individual AUES-related items were found, with no evidence of disposal features. Significant property efforts were also completed previously during the 1990s because the property was identified as part of the Captain Spaulding Rankin area. At this point, ERT and USACE feel it is likely that no AUES-related items or contamination of concern remain at the property.

In response to EPA's inquiry, USACE confirmed that all completed investigation efforts and findings at the property will be described in the Site-Wide RI report, along with the rationale for not providing an associated MEC HA score.

In response to N. Wells' inquiry, USACE confirmed that the Site-Wide MEC HA is a publicly available document that will be part of the Site-Wide RI report.

Discussion – Uncertainties

The Partners briefly discussed the approach for addressing potential AUES-related items or contamination underneath the streets. Removal of arsenic-contaminated soil extended to the curb at some residential properties, including 4825 Glenbrook Road. The need for institutional controls (ICs) remains an open question, particularly with respect to future street and utility replacements or repairs. DDOE noted that DC Water plans to replace the water main utility along Glenbrook Road, starting in June 2014.

In response to EPA's inquiry, ERT explained that potential contaminated soil underneath the streets is not a MEC HA issue. This contamination is addressed as a separate concern within the site-wide evaluation document, which serves as a work plan for addressing remaining site issues. Evaluations will include construction worker scenarios and arsenic contamination risks based on where excavation stopped at the curb. Currently, MEC items are not assumed to be buried underneath the streets, and chasing disposals beyond the curb is not anticipated.

USACE asked whether uncertainties could be addressed in the MEC HA, similar to uncertainties associated with an HHRA. ERT replied that although uncertainties are not specifically discussed in the MEC HA, this topic would fall under the general uncertainty section of the RI report. Uncertainties in the HHRA and ECO will also be addressed. USACE noted that although there are no suspected disposals underneath the streets, the potential for individual MEC/MD items associated with testing would be discussed in a similar manner to potential individual items scattered throughout the rest of the range fan.

EPA mentioned the importance of analyzing potential future efforts associated with the streets. EPA noted that a cobblestone manhole was encountered during recent Rockwood Parkway street efforts. Community Outreach and USACE confirmed that the amount of cobble encountered underneath the road is associated with a historic abandoned storm sewer.

USACE emphasized that current geophysical equipment is not sophisticated enough to detect or distinguish anomalies underneath reinforced asphalt streets.

Regarding the 4825 Glenbrook Road site, USACE and P. deFur noted that AUES-related items and contamination in the front yard are unlikely to extend underneath the street based on cut and fill. Any contamination that appears to extend underneath the road will be addressed. Community Outreach added that to date, nearby MEC findings have been encompassed within the historic AUES fence line. No MEC items were found at Glenbrook Road properties that are situated outside of the fence line. Additionally,

the street was already in place when the developer built the 4825 Glenbrook Road house, and any disturbed MEC items would not have been buried underneath the street.

USACE emphasized that Glenbrook Road appears to have been constructed by cutting into saprolite or by using a clean backfill layer between the street and saprolite. This particularly applies to the portion of Glenbrook Road situated within the historic AUES fence line, where saprolite is topped by approximately 1 foot of soil as residential property investigations approach the street. During recent excavation of a limited 4-foot by 4-foot area of contaminated soil, the property's gas utility along the street was accessed and temporarily shut off, and at least 4 feet of clean-leveled backfill was observed underneath Glenbrook Road. Due to the historic naturally sloped landscape in this area, backfill was probably used to level the street during Glenbrook Road construction.

USACE added that it sounds like DC Water will collect arsenic soil samples along and underneath the 4800 block of Glenbrook Road during utility replacement, providing additional data for this area.

In response to N. Wells' inquiries, USACE confirmed that soil sampling underneath the streets is feasible as long as damage to subsurface utilities is minimized. DC Water has not determined the degree of intrusive work that will be required, and preparations will include arsenic soil sampling and UXO avoidance techniques by a construction support contractor. Intrusive possibilities include lining the existing water utility, or removal and replacement of the entire utility.

N. Wells noted that in her neighborhood, utility companies did not conform to the necessary precautions when they excavated utilities. Police involvement was necessary to ensure that these companies acknowledged the potential presence of significant AUES-related contamination in their work areas. EPA noted that this is why formal institutional controls should be defined in the Site-Wide Decision Document. This would ensure that each proposal contractor does not have to figure out what is and is not permitted along the Spring Valley neighborhood's streets. For example, DC Water utility efforts would have to comply with a requirement for UXO construction support along Glenbrook Road.

Discussion – MEC HA Scoring Input Factors: Accessibility

ERT mentioned that the best-case scenario would be MEC HA scores of 4 (the lowest possible score) across the board, but remedial decisions would still be required. For example, the recommended depth of subsurface clearance at a residential property would depend on numerous exposure factors such as the estimated maximum depth of buried MEC and the estimated maximum depth of intrusive landscaping activities.

EPA inquired about child receptors that spend a fair amount of time in their backyard. ERT replied that while a child receptor is generally more susceptible to chemical based risk, such as arsenic-contaminated soil exposure, than an adult receptor, the explosive nature of MEC affects all humans equally, regardless of age. The MEC HA uses many scoring sheets to determine the number of potential contact hours per person per year at a given property, and accounts for individual resident differences at the property. All of those numbers are conservatively rolled together for each household, resulting in high numbers representing a broad scope of potential MEC exposure hours per year. Categories include 0 to 10,000 hours per year; 10,000 to 100,000 hours per year; and 100,000 hours to 1 million hours per year. The MEC HA scoring is not sensitive to small changes in exposure to backyard environments and other similar factors.

In response to EPA's inquiry, ERT confirmed that 0 to 10,000 hours is the typical range for a basic Spring Valley residential property. This calculation assumes three residents (two of whom are home more frequently and spend half of their waking hours outside) along with the frequency and duration and live-in status of domestic workers (such as lawn maintenance, in which case intrusive soil depth must also be accounted for). Some properties will have more or fewer individuals, and more or less exposure to MEC explosive hazards, but a single generic calculation is made to represent Spring Valley residential properties. The MEC exposure hours for each person are rolled together, resulting in a value in the 0 to 10,000 hours range.

N. Wells asked whether the MEC HA scoring provides no special considerations for child receptors, to ensure that she understood correctly. USACE clarified that child receptors are given special consideration indirectly, because they may spend more time in the backyard compared to adults. However, the actual exposure to a MEC explosive hazard is treated the same for children and adults, unlike the specific adult and child soil contamination risks evaluated in the HHRA. EPA added that consumption of arsenic-contaminated soil is more likely to negatively impact children than adults, whereas the health hazards of exploding MEC is similar for both children and adults. P. deFur explained that the MEC HA indirectly accounts for behavioral differences among receptors, such as the propensity for playfully digging into soil versus intentional intrusive landscaping activities. ERT added that sub-factors such as the depth of intrusive lawn care and the potential depth and location of buried MEC items are all rolled into the final number for a given property. Surface and subsurface soil exposure are defined as visible and beneath visible soil, respectively, in contrast to the subsurface versus subsurface definitions for soil sampling efforts.

ERT mentioned that the anticipated amount of MEC present within an area is a key input factor for MEC HA scoring. A potential target area is classified as a worst-case scenario, and more MEC items would be anticipated in a firing target area (compared to a potential disposal area where the presence and amount of MEC cannot be predicted). Both of these assumptions are considered and suggest a higher priority area, and thus would be assigned a higher MEC hazard score.

AU asked how the accessibility input factor will be addressed for the AU Public Safety Building, where potential access is prevented by the basement slab and the evolving institutional control where the basement slab will not be disturbed in the event of construction without first contacting USACE. ERT replied that the Public Safety Building was classified as a generic worst-case disposal area or burial pit scenario for this reason.

In response to EPA's inquiry, AU clarified that although an institutional control has already been established for the Public Safety Building, a MEC HA score is still necessary because a moderate or higher hazard potential may be present underneath the building. ERT noted that the MEC HA score for potential disposal areas is non-specific, but more site-specific possible remedial alternatives, such as maintaining a building slab, can be discussed. The MEC HA model contains some scoring choices that may not apply to the Spring Valley FUDS.

ERT added that scoring choices made within the Site-Wide MEC HA must account for completed efforts to date, whereas at some other project sites no investigations have been conducted and the MEC HA evaluation starts from scratch. For Spring Valley, surface removal will not be scored because this has already been completed for all areas discussed above via soil removal, or surface clearance prior to DGM investigations. The point was made that even at residential properties where right-of-entry was not granted for DGM investigations, the homeowner would have observed or encountered surface MEC items by now.

ERT mentioned that P. Greene assisted with scoring the sensitivity input factor, which includes MEC classification and MEC size. Higher scores (thus higher hazard potentials) are assigned to moveable MEC items, while sufficiently large unmovable items cannot be handled and thus present a lower hazard potential. The cutoff point for a moveable MEC item is approximately 90 pounds.

USACE confirmed that feedback on the MEC HA draft scoring is anticipated from their CX, which is associated with the Huntsville and Omaha divisions.

ERT agreed to provide electronic copies of both presentations (Site-Wide MEC HA and Site-Wide Evaluation Document) to EPA and DDOE, as requested.

USACE mentioned that information on this topic would be presented to the RAB at some point during 2013. P. deFur noted that he anticipates questions about the comparison between the MEC HA and a risk assessment, due to RAB members' familiarity with and technical understanding of this topic. EPA noted that the RAB needs to understand that the MEC HA is a probabilistic assessment that fits into the RI/FS.

EPA explained that use of the MEC HA is not required. The scoring methodology was developed as a joint effort between federal agencies including the EPA and the DoD. Based on the results of a two-year pilot study (2008-2010), the DoD concluded that an insufficient number of project sites were scored during the early stages of investigation. The pilot study was extended for an additional two years and then a final decision was made as to whether the use of this methodology should continue.

P. deFur and AU inquired about the public accessibility of the MEC HA scoring methodology. EPA and ERT replied that the MEC HA guidance document and associated guidance letter can be easily located on the EPA website via a Google search. The scoring spreadsheets may be available online or can potentially be obtained from the EPA.

In response to N. Wells' inquiry, the Partners clarified that the Site-Wide MEC HA is a portion of the publically available larger Site-Wide RI document and serves as preparation for assessing remedial alternatives in the relatively small FS report. ERT noted that depending on the project, based on unclear guidance, the MEC HA can be incorporated into the RI and updated at the FS stage, or can exclusively be used at the RI stage to provide a score for the current site use or for further use in the FS.

Discussion – Completed MEC HA for 4825 Glenbrook Road

USACE mentioned that a MEC HA was completed during the CERCLA process as part of the final RI report for the 4825 Glenbrook Road site. USACE would be unlikely to propose a significantly different MEC HA score for this property even if the MEC HA scoring process was repeated. The 4825 Glenbrook Road MEC HA specifically addressed known disposal areas, which provides an idea of potential scores that may apply to possible disposal areas evaluated in the Site-Wide MEC HA. In response to N. Wells' inquiry, the final RI report containing the MEC HA for 4825 Glenbrook Road is available on the Spring Valley project website.

The Partners noted that the 4825 Glenbrook Road MEC HA was completed during the early RI report stages. The MEC HA score was not evaluated within the FS report because it was deemed inappropriate for addressing the remedial objective of reaching a low hazard potential at the site (equivalent to Hazard Level 4). CWM is the primary contamination issue at 4825 Glenbrook Road and was the primary focus of remedial alternatives evaluated in the site-specific FS report, and the most protective remedy was selected to address CWM risks. (CWM is not addressed within the MEC HA scoring process.)

Discussion – Site-Wide RI/FS

EPA suggested that the short-term effects and long-term effects of explosive hazards should be evaluated in the site-wide RI report or the site-wide FS report. Although it doesn't matter which document contains this evaluation, the resulting conclusions will assist in planning compliance with ARARs and community acceptance. EPA expressed the opinion that potential danger from qualitative residual explosive hazards is part of the FS assessment, with the objective of establishing institutional controls and reduction of risk.

D. Site-Wide Evaluation Document (Pre-2005 HHRA Review and Preliminary Supplemental Soil Sampling Results)

USACE-Baltimore and ERT provided an update on the Site-Wide Evaluation Document and follow-on soil sampling. Additional details of this topic will be shared at upcoming Partnering meetings, pending further internal discussion and development, and receipt of recent supplemental soil sampling results.

Site-Wide Evaluation Document: The site-wide evaluation document, *Evaluation of Remaining Sampling Requirements*, was finalized in July 2012.

- Key issues in this document include **work plan details** for proposed follow-on sampling in areas known to require supplemental sampling, as described at previous Partnering meetings.

- Additional key issues in the evaluation document include **review of pre-2005 human health risk assessments (HHRAs)**, as described at previous Partnering meetings. The associated preliminary draft document is currently under further development by ERT concurrently with internal discussion and review by USACE. [This document was previously described as draft, but has been modified into a preliminary draft with back-and-forth comments and revisions.]

Supplemental Soil Sampling: Supplemental soil sampling is completed. Supplemental soil samples were collected for a total of 5 discrete AOIs. The objective of supplemental sampling is to ensure enough data exists to make human health and ecological risk determinations about these AOIs. Details of this sampling effort were provided at the April and September 2012 Partnering meetings.

Preliminary (Unvalidated) Results: Some preliminary analytical results were received and have been discussed internally. Receipt of the remaining analytical results and data validation are pending. No contaminants of significant concern were identified in the preliminary results received to date. Slight metals exceedances of regional screening levels (RSLs) and background levels are not necessarily significant. Organics such as semi-volatile organic compounds (SVOCs) were primarily non-detect.

Screening of Results: The resulting data will be screened and rolled into the review of pre-2005 HHRAs. Sampled areas and their associated sampling parameters were shown on a map combined with preliminary conclusions of the pre-2005 HHRAs review. This map provides a preliminary overview of potential exposure areas that may require further evaluation.

- **Initial Screening (completed)** – Numerous parameter exceedances were identified during review of pre-2005 HHRA maximum detected parameter concentrations against the new current USEPA RSLs or background levels. These parameters are tentatively identified as potential new or ‘provisional’ chemicals of potential concern (COPCs). This suggested the need for a more detailed screening process (outlined below), and the review of pre-2005 HHRAs continues to be reworked and resubmitted as necessary.
 - **Example:** The maximum detection of cobalt in the 1995 OSR FUDS HHRA still exceeds the highest current screening criteria (the newest RSL for cobalt, for which an update is pending or has just occurred).
- **Step 1 (in progress)** – A new exposure point concentration (a risk ratio) will be calculated to determine whether each identified chemical drops out of the evaluation or remains a provisional COPC. This step relies on basic statistical procedures using ProUCL.
- **Step 2 (in progress)** – Provisional COPCs (identified during step 1) will be further screened using a two sample hypothesis test using EPA’s ProUCL to determine whether the site is greater or less than background.
- **Step 3** – The current soil in each AOC will be reviewed to determine whether the pre-2005 sampled soil containing the COPC(s) is still present, or whether the soil containing the COPC(s) has been removed and replaced since the pre-2005 time frame. If the soil has been removed, an iterative process will commence wherein the next highest remaining samples are screened and steps 1 & 2 are re-run, to determine whether an area still contains COPCs
- **Step 4** – The project team will evaluate whether additional supplemental soil samples will provide significantly better risk evaluation results. This is important because obtaining rights-of-entry for soil sampling at additional properties may be difficult.
- **Step 5** – After undergoing the process outlined above, if a sampled parameter (such as cobalt) is still identified as a COPC, a formal full quantitative HHRA will be performed to determine whether the area of concern presents health risks..

- **Step 6** – Any COPCs and areas that are identified as presenting human health risks will potentially be addressed in the FS process. The purpose of this step is to make formal recommendations for remediating the COPC contamination to protect human health.

Tentative Schedule: The remaining analytical results and data validation are pending. Validated data will be tentatively submitted to USACE in late December 2012 along with the conclusions of the first few data screening and evaluation steps. Additional Partner discussion, recommendations, and concurrence will then be requested.

Discussion – Soil-Groundwater Pathway

EPA inquired about metals sampling results that may indicate contributions to groundwater risks via leaching (aside from arsenic, which was not included in the supplemental soil sampling evaluation). ERT replied that based on unvalidated supplemental soil sampling results, elevated levels of concern were not detected.

In response to EPA's inquiry, USACE replied that soil screening to address the soil-groundwater pathway would not be addressed as part of the Site-Wide Evaluation Document key issues. EPA noted that if this issue is not included within the evaluation document, it should be acknowledged as having been considered.

ERT expressed the opinion that the soil-groundwater pathway Soil Screening Levels (SSL) does not necessarily require evaluation because groundwater will be fully assessed in the Site-Wide Groundwater RI. EPA acknowledged this and stated that although they are not suggesting cleanup of soil to address groundwater contamination, soil contaminants that potentially pose a threat to groundwater should be part of the overall evaluation process and contribute to cleanup decisions. USACE mentioned that Step 5 might address the soil-groundwater aspect (a formal full quantitative HHRA). EPA expressed concern about limiting groundwater COPCs to arsenic and perchlorate without evaluating soil COPCs in the context of the soil-groundwater pathway.

The Partners briefly discussed the low likelihood of groundwater impacts from existing soil contamination. SSLs tend to be extremely low but can be adjusted to fit the specific site based on various factors, and SSL exceedances do not always require installation of complex groundwater monitoring wells for further pathway evaluation. Existing soil contamination could potentially impact future groundwater concentrations, as COPCs that are currently undetected. Part of the remediation discussions for the 4825 Glenbrook Road site included the possibility of arsenic leaching from nearby soil into groundwater, causing SSL exceedances in groundwater that disappeared following soil remediation. USACE agreed that this issue could be taken under consideration as part of the pre-2005 HHRA review process.

EPA suggested an additional step to evaluate whether soil COPCs exceed their respective SSLs, and whether those SSLs are reasonable and appropriate (because sometimes site-specific SSLs can be significantly higher than the generic table SSLs). EPA's overall suggestion was to consider including the soil-groundwater pathway as part of this evaluation, and if no issues are identified then this should be stated in the pre-2005 HHRS review or another appropriate document.

Discussion – Screening Methodology

AU asked whether the detailed screening methodology, which is not included in the site-wide evaluation document, will be written up and distributed to the Partners as a separate write-up before the pre-2005 HHRA review is distributed. USACE replied that this methodology would be described in the draft final version of the document for Partner review. ERT added that the screening process is already underway, and further review, comments, and modifications would delay completion of the pre-2005 HHRA review.

Discussion – Supplemental Soil Sampling Locations

USACE acknowledged AU's recent request for sampling additional metals on the AU campus. As described at the September 2012 Partnering Meeting, this formal request was made during the evaluation document review process. USACE mentioned that this request is still under consideration, and a formal response is pending further progress of the screening process outlined above. Antimony was previously identified as a potential COPC, and vanadium and thallium were added to the potential COPC list as requested by AU. The remaining additional metals requested by AU are still under consideration, and USACE's decisions will be based on the outcome on the pre-2005 HHRA review and screening process.

In response to EPA's inquiry, USACE clarified that the request for sampling additional metals pertains only to the AU campus, and not to the adjacent 4835 Glenbrook Road residential property owned by AU. USACE noted that this property is situated within the AOI that was not targeted for pre-2005 HHRA sampling of AU's property.

In response to A. Gates' inquiry, USACE replied that individual homeowners rarely request additional soil sampling on their property. USACE expressed the opinion that if homeowners request additional sampling for their own peace of mind, this may not be justified as necessary. If evaluation of supplemental soil sampling results reveals the need for additional data, then right-of-entry for further sampling will be requested by USACE.

P. deFur clarified that AU requested additional samples for a legitimate purpose. AU stated that their request was based on previous investigation findings at Lot 18 and at the AU Public Safety Building. P. deFur explained that additional soil sampling at residential properties is unlikely to be warranted unless they are associated with relatively uninvestigated areas of the range fan or AOIs/POIs. USACE agreed and noted that such individual residential properties would be investigated and discussed from an AOI/POI-specific or range-fan specific perspective.

P. deFur added that based on this discussion, the criteria for agreeing to conduct additional soil sampling at a residential property would include the following: identification of a potential AUES contamination source nearby and an associated gap in existing investigation coverage, particularly if there is a reasonable possibility of a relationship between the potential source and chemical-contaminated soil.

USACE and P. deFur agreed that the primary question is whether additional soil sampling will assist the project team with making better remedial alternative decisions.

Next Steps

USACE-Baltimore and ERT will take the soil-groundwater pathway under consideration as part of the pre-2005 HHRA review process and COPC evaluation, as requested by EPA. [Soil COPCs will be evaluated to determine whether they exceed their respective SSLs, and the SSLs will be reviewed to ensure they are reasonable and appropriate.]

E. Anomaly Review Board (ARB)

The goal of this segment of the meeting was to briefly present anomaly removal recommendations at a 3700 block of Fordham Road property.

USACE-Huntsville and USACE-Baltimore presented recommendations for addressing geophysical anomalies at a 3700 block of Fordham Road residential property. Maps of the anomaly distribution were reviewed along with a Google Earth photograph to show the amount of vegetation at the property.

Objective: To obtain Partner consensus on investigation of selected anomalies.

Partner concurrence was provided for the recommended anomalies to be dug at the property on the 3700 block of Fordham Road, with additional modifications to the ARB memo below, as requested.

3700 Block of Fordham Road

- **Background:** This property is part of POI 2 (Possible Pit) and encompasses AOI 9. Several ground scars from 1918, 1922, 1927, and 1928 overlap with the property. This property was originally surveyed by Weston and reviewed by the ARB in 2004, prior to the revised anomaly classification scheme established in 2008. At that time, the ARB selected clusters of single-point anomalies and clusters of anomalies that were primarily indicative of potential-pit-and-trenches (PPTs). Following the geophysical survey, the homeowner denied right-of-entry for anomaly removals due to significant landscaping at the property. Recently, homeowner permission was granted to conduct anomaly removals.
- **Revised ARB:** This property was recently reassessed using the 2008 revised anomaly classification scheme to determine whether this would significantly change the ARB recommendations for anomaly investigations.
- A total of 112 single-point anomalies were identified on the property. Of these anomalies, 2 were classified as A1, 3 were classified as B1, 17 were classified as C1, and 90 were classified as D.
- **Recommendations:** A total of 25 anomalies and one PPT were selected for investigation.
 - All “A” anomalies will be investigated. These are situated in the front yard.
 - Most “B/C” anomalies will be investigated, with the exception of one “B1” anomaly and four “C” anomalies under hardscape. These are primarily situated in the back yard.
 - A total of “8” D anomalies were also selected for investigation. These are distributed throughout the front and back yards.
 - The PPT will be investigated via an excavated trench.
 - Geophysical data collection was partially limited by vegetation including trees and shrubs and a large backyard patio.

Discussion – Property Features

USACE mentioned that the revised ARB recommendations (25 single-point anomalies and 1 PPT) are similar in number to the original 2004 recommendations. EPA noted that this is not helpful to the property owner in terms of landscape disturbance. USACE acknowledged this but added that the new dig list has about the same number of anomalies, relieving EPA’s concerns about a significantly larger dig list.

USACE noted that the “200-series” anomalies (those numbered 200 and above) are additional anomalies identified by USACE-Huntsville that were not previously identified for investigation in Weston’s original 2004 report. It is possible that several of these were culturally influenced, as Weston’s site notes were not available for review.

In response to EPA’s inquiry, USACE replied that arsenic-contaminated grids previously identified at the property do not significantly overlap with anomalies selected for investigation. Several anomalies near the front yard walkway are close to an arsenic grid. All arsenic grids are situated along the property boundary. EPA added that this arsenic grid distribution would make sense if landscaping soil brought onto the property was cleaner than the soil that was initially removed by the homeowners.

USACE mentioned that according to the homeowner, landscaping ties were present when they bought the property and are currently used to support the corner of the backyard patio. The homeowner suggested that pressure-treated wood, originating prior to the arsenic ban, might have contributed to the nearby arsenic grids along the southwestern property line. There is poor correlation between arsenic grids and geophysical data in this area because the edge of the backyard is heavily built-up and landscaped.

A. Gates asked whether there is a way to determine whether the arsenic source in soil originated from pressure-treated wood and not from munitions. EPA replied that this would be very difficult and would require isotopic analysis. P. deFur added that copper and chromium isotopes would provide a cheaper screening compared to CCA.

USACE briefly described nearby AUES-related findings including two MD items, identified as a piece of a livens round and a 75 mm projectile, at the adjacent 5000 block of Sedgwick Street property. [The Fordham Road property and the Sedgwick Street property share a backyard property line.] No items of concern were found at other nearby properties along the same side of Fordham Road.

In response to EPA's inquiry, USACE clarified that the single "B1" anomaly not selected for investigation is situated under concrete topped by a stone pathway. This stonework and concrete are probably not reinforced, and lifting the hardscape or investigating from the sides may be feasible. The homeowners highly value the visual appeal of their landscape and hardscape features. The ARB memo will specify that all anomalies under hardscape will be investigated if they are accessible without disturbing the overlying surface, as requested by EPA and DDOE.

USACE clarified that the PPT investigative trench is situated in an open area of the backyard and will probably be investigated via one diagonal trench and potentially a second trench to address the northern portion of the PPT. EPA noted that trenching is preferable, but due to the difficulty of accessing the backyard with an excavator, the possibility of single-point anomaly investigations should be specified in the ARB memo.

EPA noted that the Partners pursued access to this property because they felt that one PPT identified in the original geophysical data could be indicative of a potential disposal pit. USACE confirmed that one ground scar at the property was identified as a possible pit on historical aerial photographs, and the ground scar was labeled as POI 2 (Possible Pit) in the 1995 RI report.

N. Wells asked whether the PPT could be identified as a likely burial pit prior to investigation. USACE explained that many PPTs turn out to be nothing of significance, but the correlation between the PPT location and the aerial photography analysis identifying POI 2 (Possible Pit) is interesting. If possible, an excavator will be used to ensure that nothing of concern is present, and if nothing is found within the top four feet then deeper excavation will be warranted.

The Partners briefly discussed challenges in bringing an excavator into the backyard, which will be necessary for arsenic grid removal and recommended for the PPT investigation. Challenges include heavy terraced landscaping and bushes along the backyard property boundaries, a built up backyard wall, and a large mature tree near the front corner of the house. Expert recommendations for excavator access will be necessary, and access will ideally be limited to the property of interest instead of requiring right-of-entry to a neighboring property. Use of a large crane presents safety risks, as do other property access solutions.

EPA mentioned that there is flexibility for investigating selected "D" anomalies. Alternative "D" anomalies can be investigated in lieu of selected locations based on homeowner preferences. USACE agreed and noted that selected "D" anomaly locations, a few of which are situated in the backyard, were chosen for their flexibility.

USACE mentioned that a new task order from USACE-Baltimore or USACE-Huntsville would be required due to the completed contract scopes and periods of performance for recent contractors (Shaw and Parsons). Selection of an arsenic removal contractor will also be necessary due to Severson's recent demobilization from the Spring Valley FUDS.

The Partners briefly discussed the recently obtained verbal right-of-entry. The homeowner granted verbal permission in late November 2012, but the formal right-of-entry may not be signed until the anomaly removal time frame is closer to minimize a lengthy ROE time frame. Task order

negotiations and work plan contract awards would be addressed in the interim. Stipulations include the time of year, as the homeowners want to minimize disturbance between March 1 and the conclusion of the outdoor season. Based on contracting requirements and time frame limitations, the anomaly removals and arsenic grid removals are tentatively planned as early as Fall 2013. A multi-step process will be required to achieve property completion.

Next Steps

USACE will make the recommended revisions to the 3700 block of Fordham Road property ARB memo and distribute the memo for signatures. The memo will be corrected to include all accessible "A/B/C" anomalies underneath hardscape, as long as they can be investigated without damaging the hardscape, as requested by EPA and DDOE. The homeowner will be notified of the completed ARB concurrence in preparation for anomaly removals at the site.

F. Document Tracking Matrix for Hazardous Toxic Waste (HTW) and Military Munitions Response Program (MMRP)

The goal of this segment of the meeting was to review the comment due dates on HTW and MMRP draft reports and the status of the documents.

The Partners briefly reviewed the status of several documents.

Discussion – Site-Specific Documents for Completed Investigations at 4835 Glenbrook Road and the AU Public Safety Building

Parsons noted that they are preparing their comment responses for documents associated with 4835 Glenbrook Road and the AU Public Safety Building.

G. Open Issues and New Data

The goal of this segment of the meeting was to share issues not on the agenda for possible placement on a future agenda and to share new data that became available since the last Partnering meeting.

No open issues or new data were brought forward for discussion.

H. Partner's Parking Lot

The goal of this segment of the meeting was to review and update the Parking Lot list.

The "Partners Parking Lot" is an informal list designed to assist the Partners in tracking ideas, collaborations, research and tasks. The list is not a formal document specifying actions that must be taken.

The Parking Lot list will be reviewed at the January 2013 Partnering meeting.

I. Agenda Building

The next meeting is tentatively scheduled for Tuesday, January 29, 2013. Upcoming meetings are tentatively scheduled for Tuesday, March 19, 2012.

Discussion – Future Meeting Schedule

The Partners briefly discussed the future meeting schedule with respect to the anticipated frequency and content volume of agenda topics. Upcoming Partnering meetings will be scheduled every other month, with additional meetings scheduled as needed, as suggested by EPA.

Next Steps

Partner concurrence was obtained for scheduling future Partnering meetings every other month, with additional Partnering meetings as needed.

J. Adjourn

The meeting was adjourned at 12:52 PM.