



**SPRING VALLEY FORMERLY USED DEFENSE SITE PROJECT**  
**RAB Meeting**

**February 12, 2013**  
**7:00 – 8:10 p.m.**

**UNDERCROFT MEETING ROOM**  
**ST. DAVID'S EPISCOPAL CHURCH**  
**5150 MACOMB ST. NW, WASHINGTON, DC**

**Agenda**

- 7:00 p.m. I. Administrative Items**  
Co-Chair Updates  
▪ Announcements, Introductions  
Task Group Updates  
▪ Membership
- 7:15 p.m. II. USACE Program Updates**  
Site-wide Remedial Investigation Efforts  
▪ What is a MEC HA?  
Groundwater Study  
Glenbrook Road
- 7:35 p.m. III. Community Items**  
Summary of the JHU Follow-On Health Study and Survey
- 7:50 p.m. IV. Open Discussion & Future RAB Agenda Development**  
RAB Meeting Schedule Discussion  
Possible Upcoming Meeting Topics\*:  
▪ Risk Assessment Review  
▪ Munitions and Explosives of Concern Hazard Assessment (MEC HA)  
▪ 4825 Glenbrook Road Health Consultation Update (ATSDR)
- 8:00 p.m. V. Public Comments**
- 8:10 p.m. VI. Adjourn**

*\* RAB meetings are not held in August or December*

# Spring Valley

Formerly Used Defense Site

## Restoration Advisory Board Meeting

February 12, 2013

“The USACE Mission in Spring Valley is to identify, investigate and remove or remediate threats to human health, safety or to the environment resulting from past Department of Defense activities in the area.”



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US Army Corps of Engineers  
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# Agenda Review

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## ❖ Co-Chair Updates

- Introductions, Announcements

## ❖ USACE Updates

- Site-wide Remedial Investigation Efforts
  - What is MEC HA?
- Groundwater Study
- Glenbrook Road

## ❖ Community Items

- Summary of the JHU Health Study Survey

## ❖ Open Discussion & Agenda Development

- RAB Meeting Schedule Discussion

## ❖ Public Comments



# Co-Chair Updates

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## Introductions



# Co-Chair Updates

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## ❖ Announcements

### ➤ Website Updates:

November 2012 RAB meeting materials  
(agenda, presentation, and minutes)

**The new Spring Valley website is now live!**

The new website address is:

[www.nab.usace.army.mil/Home/SpringValley.aspx](http://www.nab.usace.army.mil/Home/SpringValley.aspx)



# Task Group Updates

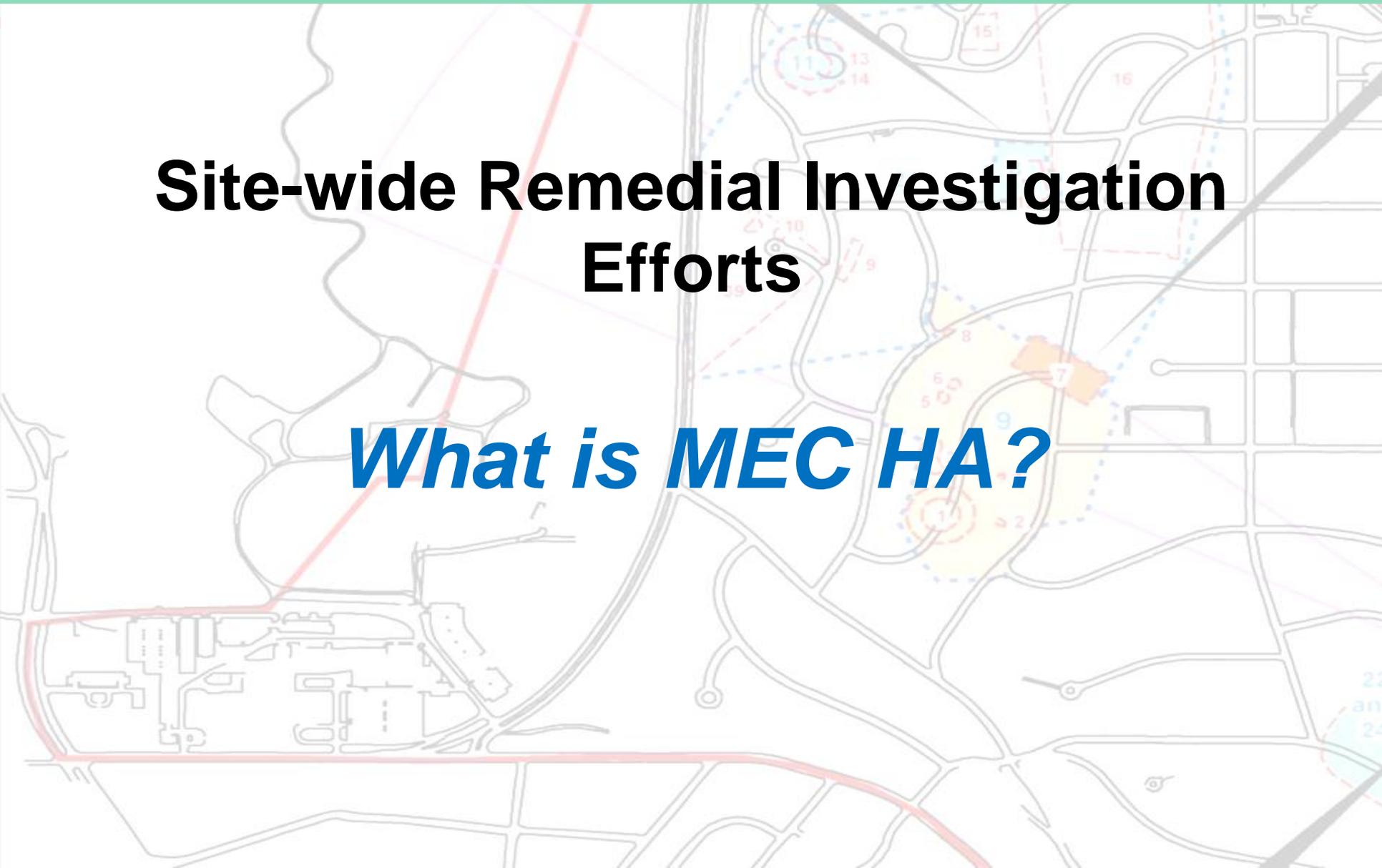
## Membership Committee



# USACE Updates

## Site-wide Remedial Investigation Efforts

*What is MEC HA?*



# Site-Wide RI Efforts – MEC HA

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## Overview

### Munitions and Explosives of Concern Hazard Assessment (MEC HA)

- Is a methodology to address the unique risks presented by MEC.
- Meets CERCLA requirements to conduct site-specific risk assessments for human health and the environment at project sites involving MEC.
- Is included in the Site-Wide RI Report, in conjunction of the Human Health Risk Assessment.



# Site-Wide RI Efforts – MEC HA

## Purpose

**Provides a consistent framework for organizing information to be used in the decision processes.**

- Project teams will make similar hazard management decisions for similar site situations.

**Assists in managing uncertainty.**

- Helps identify when a sufficient quantity and quality of information is collected to make management decisions supporting no-action, removal, or remedial decisions.

**Ensure continuity of hazard management evaluations and decisions.**

- When a consistent, accepted framework is in use, decisions for a munitions response site are more likely to continue to be supported when the project team changes, such as when new staff, contractors, or stakeholders become involved.



# Site-Wide RI Efforts – MEC HA

## Purpose

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
- Evaluate hazard reductions associated with land use activity decisions

**The MEC HA addresses potential exposure to MEC, does not address CWM**

- From the guidance: “...Although MEC can include CWM, the chemical agent component of the CWM presents a greater hazard to human health than the explosive components of CWM. This reflects the recognition that the greatest risk to human health from CWM is the chemical agent, not the Explosive.”
- CWM is factored into the traditional risk assessment for a site.



# Site-Wide RI Efforts – MEC HA

## MEC HA Components

MEC HA is conducted in specific areas of MEC concern within a project site.

- Multiple MEC HAs may be done for one project site.
- The MEC HA “exposure unit” is termed an MRS, Munitions Response Site

### The MEC HA evaluates:

- **Severity:** The potential severity of the result should a MEC item function.
- **Accessibility:** The likelihood that a receptor will be able to interact with a MEC item.
- **Sensitivity:** The likelihood that a MEC item will function should a receptor interact with it.



# Site-Wide RI Efforts – MEC HA

## MEC HA Components

MEC HA also includes:

- **Summary Info** - General information regarding the area of concern.
- **Munitions/Explosive Info** - MEC and bulk explosives present.
- **Current and Future Activities** - Current land use activities as well as planned future activities, if any.
- **Remedial-Removal Action** - General information regarding remediation/removal alternatives being considered.
- **Post-Response Land Use** - Land use activities associated with the remedial action alternatives.



# Site-Wide RI Efforts – MEC HA

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## MEC HA Outcomes

Each area that is assessed by the MEC HA produces a score that is associated with one of four Hazard Levels.

### **Reflects the interaction between:**

- Current or future human activities in the subject area &
- Types, [amounts], and conditions of MEC items within the subject area.



# Site-Wide RI Efforts – MEC HA

## MEC HA Outcomes

Hazard Levels for the MEC HA are based on relative numeric scores ranging from 125 to 1000

- **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 RI Efforts – MEC HA

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## Hazard Levels: Typical Characteristics

### Hazard Level 1

- High Explosive UXO “Special Case” on the surface
- Former Target Area or OB/OD Area
- Full or moderate accessibility
- Has not undergone thorough cleanup

### Hazard Level 2

- UXO, or Fuzed DMM “Special Case” on the surface
- Intrusive activities that overlap with subsurface UXO, or Fuzed DMM “Special Case”
- Former target area, OB/OD area, function test range, or maneuver area
- Full or moderate accessibility



# Site-Wide RI Efforts – MEC HA

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## Hazard Levels: Typical Characteristics

### Hazard Level 3

- May have any type of MEC or past use. Primarily Propellant or lower, Firing points or lower
- MEC subsurface only: May be due to past clearance
- Moderate or limited accessibility and/or low number of contact hours

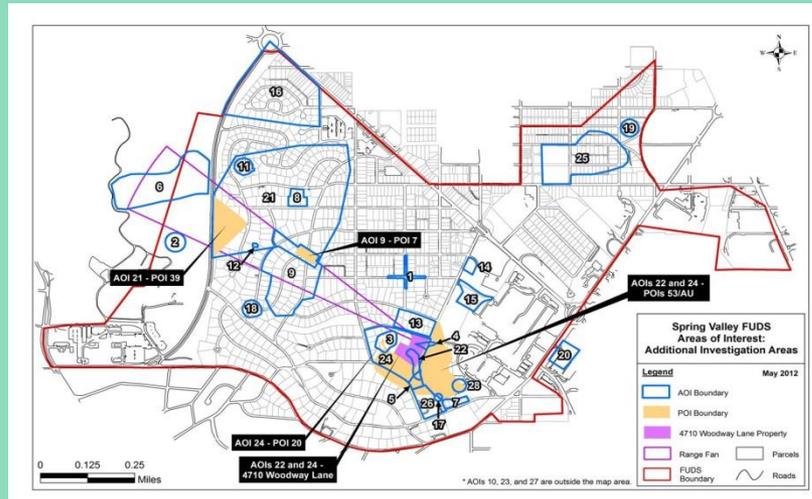
### Hazard Level 4

- May have any type of MEC or past use. Primarily Propellant or lower, Firing points or lower
- MEC subsurface only – incomplete exposure pathway
- Very Limited Accessibility and/or low number of contact hours



# Site-Wide RI Efforts – MEC HA

The Spring Valley MEC HA  
will be presented during the  
March 2013 RAB meeting



# Groundwater



# Groundwater

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**In January, the Spring Valley FUDS Groundwater Partners held a conference call to discuss and reach a consensus agreement about proposed wells and the 2013 monitoring of specific existing wells and surface water locations.**

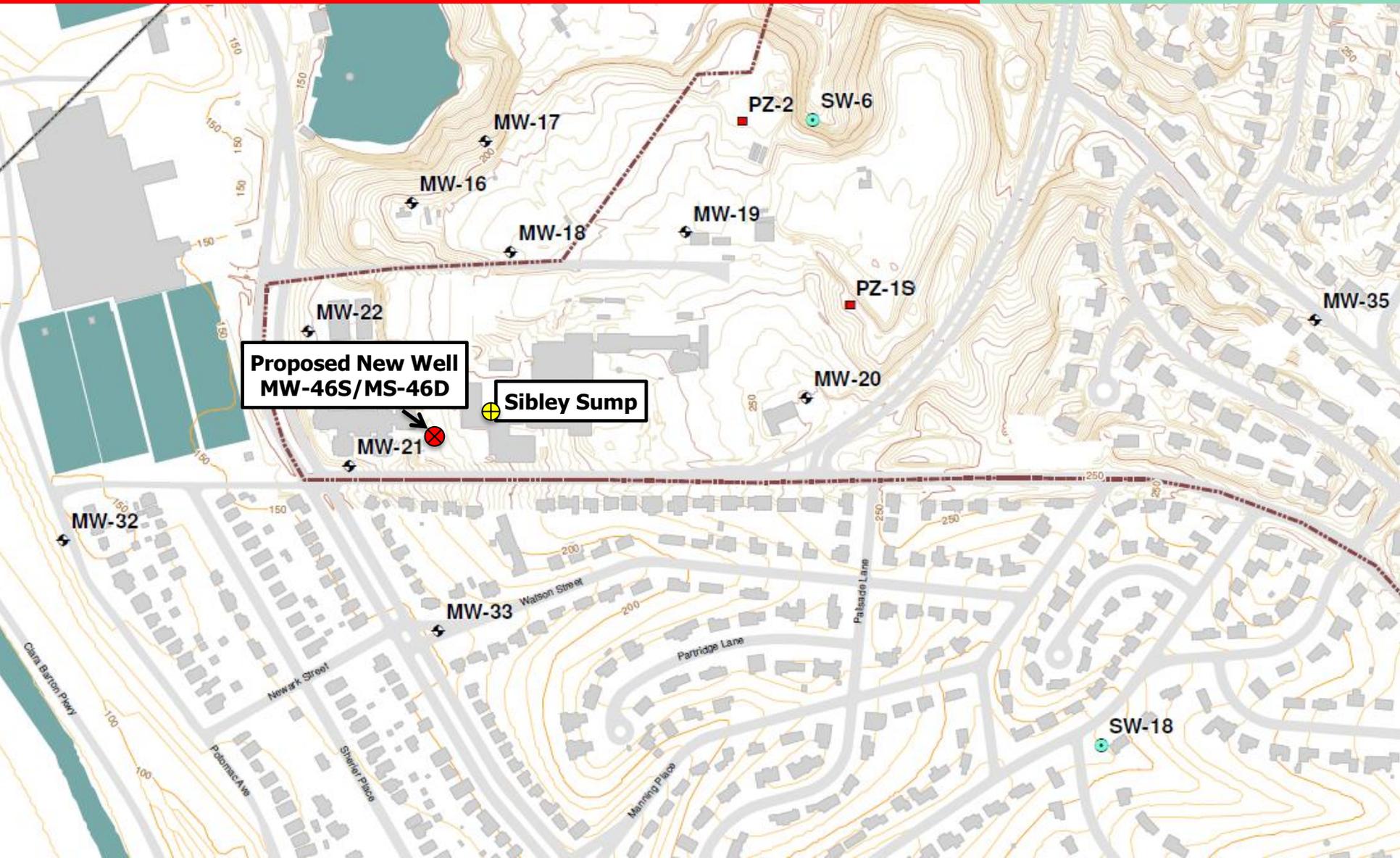
- One new well is to be sited near the Sibley Sump, and the other down-gradient of the multiple port well (MP-2) on Glenbrook Road, where we detected elevated perchlorate and arsenic levels.

## **Groundwater monitoring program continues:**

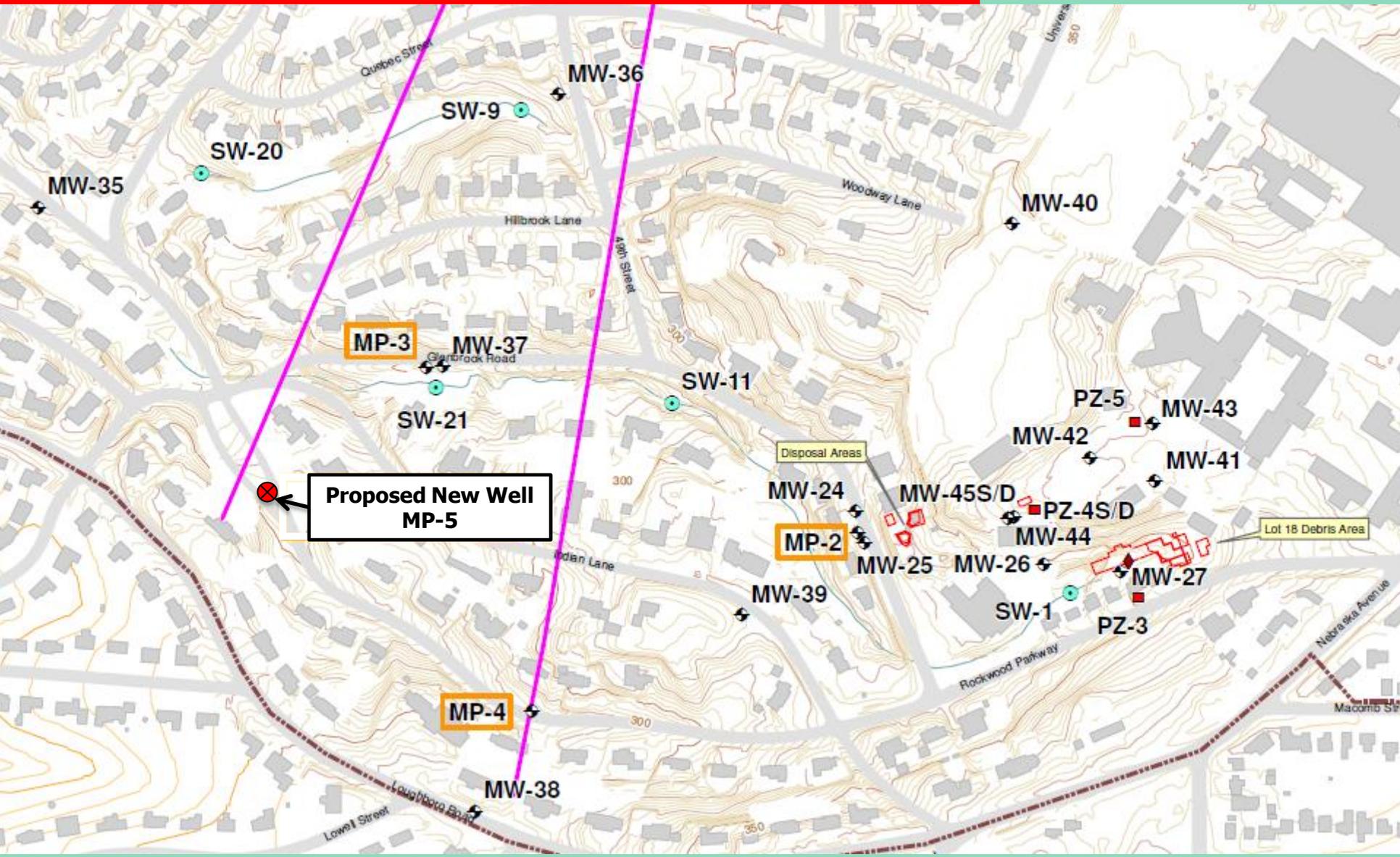
- The groundwater monitoring program in 2013 will include continued monitoring of 20 existing wells and 10 surface water locations, both in April and September.



# Groundwater (Sibley Hospital Area)



# Groundwater (Rockwood Parkway Area)



# 4825 Glenbrook Road



**Update**

# 4825 Glenbrook Road

## Low Probability



Site preparations resumed at the 4825 Glenbrook Road site after the New Year's Day holiday.

On January 28th, low probability work started.

Low probability work includes soil removal and investigative test pitting in the front yard area near the road.



# 4825 Glenbrook Road

## Low Probability



**First steps of low probability excavation**

**These low probability tasks will continue until the end of February, along with the start of site preparations for the high probability work, and site utility relocation.**

**The high probability work, which is conducted under engineering control structures, is scheduled to start in spring 2013.**



# 4825 Glenbrook Road

## Low Probability

Varying depths of  
Competent Saprolite



Complete excavation



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# 4825 Glenbrook Road

## Low Probability



**Protruding bedrock**

**Competent Saprolite**



# 4825 Glenbrook Road

**USACE finalized the Site Specific Remedial Design/ Remedial Action Work Plan for 4825 Glenbrook Road at the end of January.**

This work plan explains in detail how the property will be safely cleaned up, including the use of engineering controls and safety protocols during the high probability excavations.

The work plan is now available online at our project website and at the information repository at the Tenley-Friendship Branch Library.



# 4825 Glenbrook Road

## Overall Schedules for the Remedial Design(RD)/Remedial Action (RA)

- **December 2012 through March 2013 –**  
*Site Preparation/ Initial Low Probability Work*
  - Test pits in backyard and re-locating utilities
- **April 2013 through December 2013 –**  
*ECS Set Up and High Probability Excavation*
- **January 2014 and March 2014 –** *Final Low Probability Excavation*
- **April 2014 –** *Site Restoration*



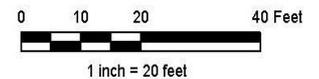
Figure 3-1  
Proposed Remedial Action  
4825 Glenbrook Road

Spring Valley  
Washington, D.C.

Legend

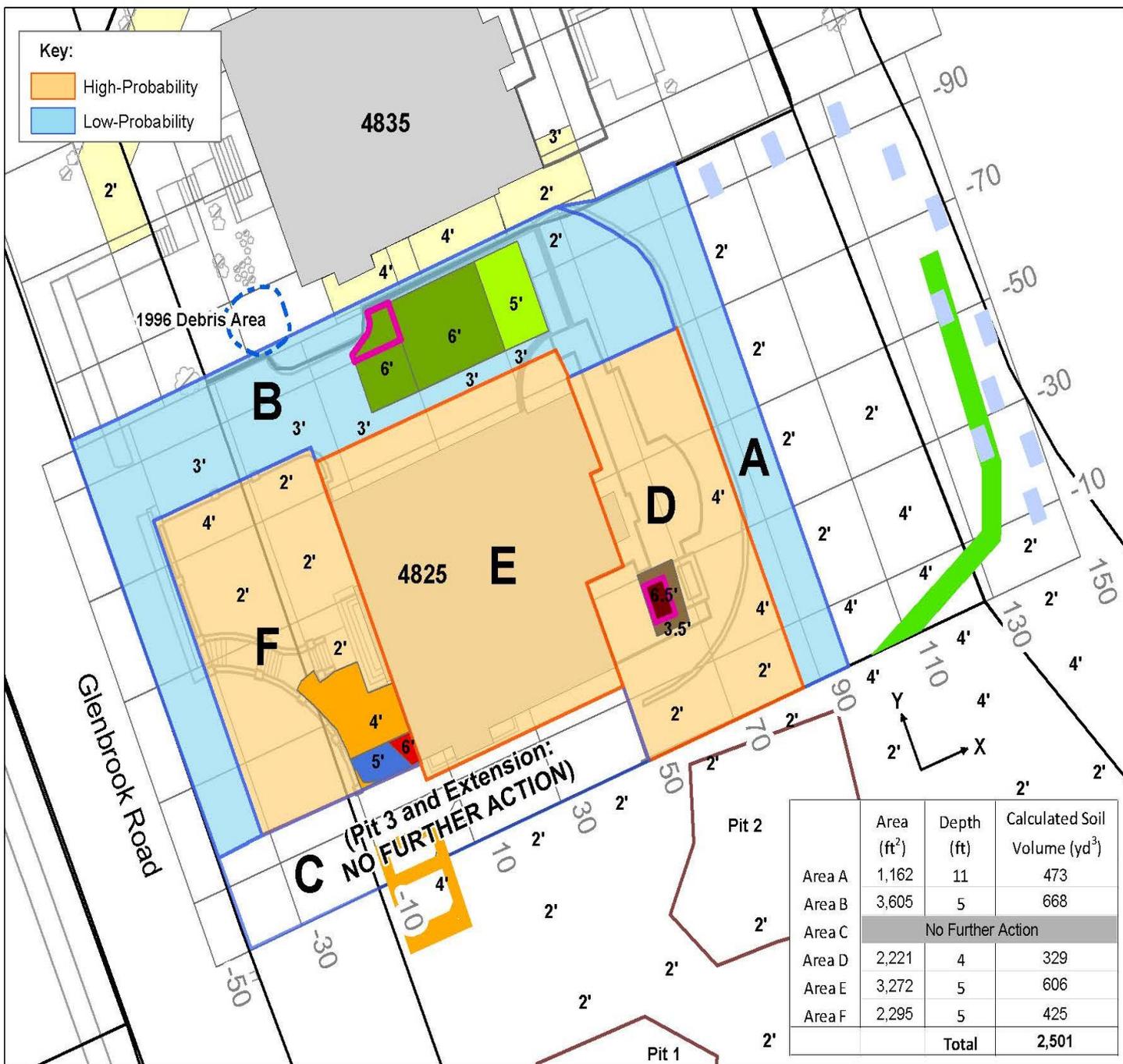
- Buildings
- Property Boundaries
- 20' Grid
- Pits 1 and 2
- Test Pit 23 (Burial Pit 3)
- Arsenic Exceedance to be Further Excavated
- Trench for Rerouted Sewer Line
- Additional Low Probability Investigation**
- Test Pits
- Arsenic Soil**
- Arsenic Grid Previously Removed [5'] (2009)
- Arsenic Grid Previously Removed [6'] (2009)
- Soil Excavation**
- Excavation Depth [3.5'] (2009)
- Excavation Depth [4'] (2010)
- Excavation Depth [5'] (2010)
- Excavation Depth [6'] (2010)
- Excavation Depth [6.5'] (2009)
- 1996 APEX Tree Removal (Debris Area) Perimeter
- Previously Excavated Arsenic: Adjacent Properties

Note:  
Excavation depths shown from previous  
arsenic removal.



Scale: 1:245  
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File: 20120301\_4825 Glenbrook Road HI-Lo Areas.mxd  
Date: 3/01/2012  
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**PARSONS**



# **Spring Valley FUDS Restoration Advisory Board**

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## ***Community Items:***

### **Summary of the JHU Health Study Survey**

***Presented by Mary Fox & Beth Resnick***



# **Johns Hopkins Spring Valley Public Health Study Progress Update**

**RAB Meeting  
February 12, 2013  
Washington, D.C.**

**Mary Fox, PhD, MPH  
Beth Resnick, MPH, CPH**

# Administrative

- Contract
  - Continuation request and engagement
- Work in progress/Next steps
  - Drafting final report
  - Agency review for clarity and completeness



# Study Components

1. Environmental Assessment
2. Community Health Assessment
3. Community Survey and Outreach



# Approach

- Compare rates, trends and survey responses across areas
  - ZIP codes 20016, 20015, DC, US
  - For demographics and cancer analyses census tracts were used to define study areas
    - “Spring Valley” area: 801, 901, 1001, 1002
    - “Chevy Chase” area: 1100, 1401, 1402, 1500
- Consider findings from environmental, health and survey pieces
- Make public health recommendations, as indicated by findings



# Environmental Assessment

- Exposure pathway evaluation, Spring Valley FUDS

Data from EPA and Army Corps of Engineers reports

- Community environmental health portraits, 2005-2012

Data from EPA, Washington Aqueduct, DDOE

- Water monitoring data evaluation, Spring Valley FUDS

Includes available data from URS, 2005 – May 2012



# Community Health Assessment

- Population demographics, 2006-2010

US Census and American Community Survey

- Top 15 causes of mortality, 2004-2010

Data from DCDOH, Division of Vital Records

- Selected cancer incidence and mortality, 2005-2009

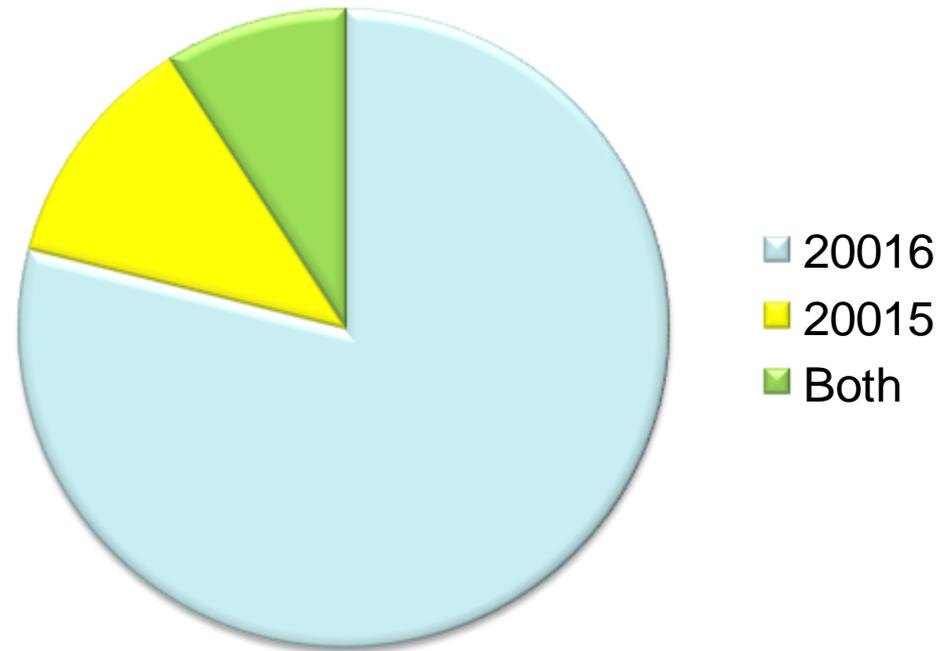
Bladder, kidney&renal pelvis, liver&bile duct, lung&bronchus, leukemias, lymphomas, melanoma

Data from DCDOH, Vital Records and Cancer Control Registry



# Update: Community Survey Response

- 865 total respondents
  - ~79% - 20016
  - ~12% - 20015
  - ~ 9% - Both 20015 and 20016



Ever live, work or study in 20016 or  
20015



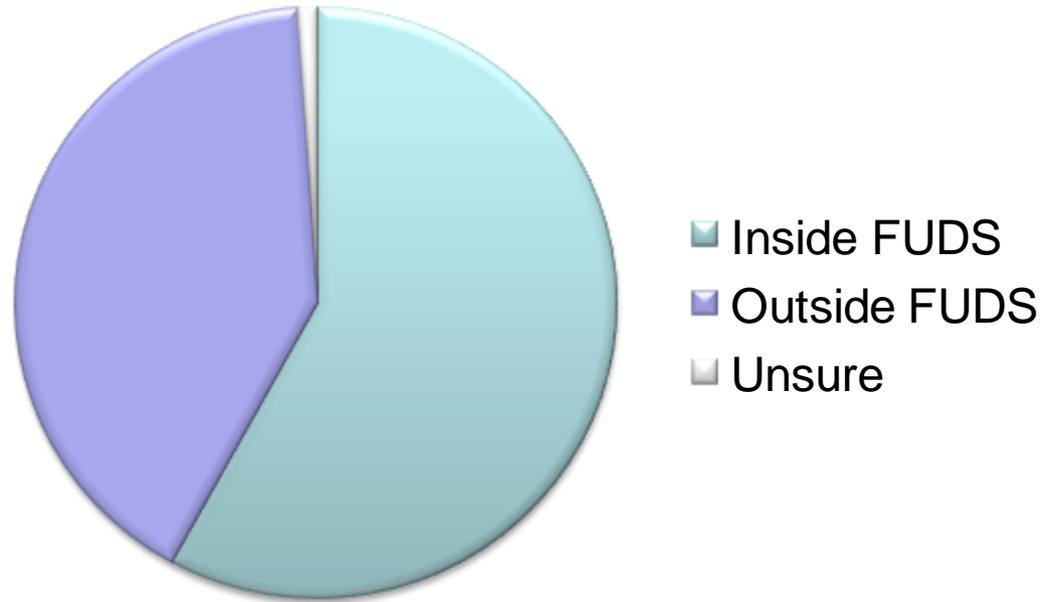
# Update: Community Survey Response

- 567 currently living in 20016

~58% Inside FUDS

~41% Outside FUDS

~ 1% Unsure



Current residents of 20016



# Community Survey Analysis

- Characterize responses
- Describe respondents
- Present self-reported health status and health concerns
- Report community concerns
- Summarize comments



# Final Report

- Executive summary
- A chapter for each study component:
  - Summarize data and methods
  - Present analysis and findings
- Synthesis and discussion across components
- Public health recommendations



# Thank you!

- **Mary Fox**

[mfox@jhsph.edu](mailto:mfox@jhsph.edu)

- **443-287-0778**

**Beth Resnick**

[bresnick@jhsph.edu](mailto:bresnick@jhsph.edu)

**410-614-5454**



# Spring Valley FUDS Restoration Advisory Board

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## Open Discussion

- RAB Meeting Schedule Discussion



# **Spring Valley FUDS Restoration Advisory Board**

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## **Upcoming Agenda Items**

- **Risk Assessment Review**
- **Munitions and Explosives of Concern Hazard Assessment (MEC HA) (March)**
- **4825 Glenbrook Road Health Consultation Update (ATSDR)**



# Spring Valley FUDS Restoration Advisory Board

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- **Public Comments**
- **Wrap-Up**



**U.S. Army Corps of Engineers  
Spring Valley Joint Restoration Advisory Board Meeting  
St. David's Episcopal Church  
Minutes of the February 12, 2013 RAB Meeting**

<b>RESTORATION ADVISORY BOARD MEMBERS PRESENT AT THIS MEETING</b>	
Dan Noble	Military Co-Chair/USACE, Spring Valley MMRP Manager
Greg Beumel	Community Co-Chair
Linda Argo	At Large Representative – American University
Mary Bresnahan	Community Member
Ralph Cantral	Community Member
Kathleen Connell	Community Member
Dr. Peter deFur	Environmental Stewardship Concepts/RAB TAPP Consultant
Mary Douglas	Community Member
Paul Dueffert	Community Member
Alma Gates	At Large Representative – Horace Mann Elementary School
Steve Hirsh	Agency Representative – US Environmental Protection Agency Region III
William Krebs	Community Member
Lawrence Miller	Community Member
Lee Monsein	Community Member
Malcolm Pritzker	Community Member
James Sweeney	Agency Representative – District Department of the Environment
George Vassiliou	Community Member
John Wheeler	Community Member
<b>RESTORATION ADVISORY BOARD MEMBERS NOT PRESENT AT THIS MEETING</b>	
Tom Smith	Community Member
<b>ATTENDING PROJECT PERSONNEL</b>	
Todd Beckwith	USACE, Spring Valley Project Manager
Brenda Barber	USACE, Spring Valley Project Manager
Lan Reeser	USACE, Technical Manager
Andrea Takash	USACE, Public Affairs

Lattie Smart	Spring Valley Community Outreach Program
Rebecca Yahiel	Spring Valley Community Outreach Program
Jessica Bruland	ERT
<b>HANDOUTS FROM THE MEETING</b>	
I. Final Agenda for the February 12, 2013 RAB Meeting	
II. Army Corps of Engineers Presentation	

**AGENDA**

**Starting Time:** The February 12, 2013 RAB meeting began at 7:04 PM.

**I. Administrative Items**

**A. Co-Chair Updates**

Greg Beumel, Community Co-Chair, opened the meeting and turned the meeting over to Dan Noble.

Dan Noble, Spring Valley Project Manager and Military Co-Chair, welcomed the group and noted that this RAB meeting precedes the 2013 State of the Union Address (scheduled to air at 9:00 PM EST).

D. Noble reviewed the evening's agenda.

**B. Introduce Guests**

Dr. Mary Fox and Beth Resnick of Johns Hopkins University attended the meeting to present an update on the follow-on Spring Valley public health study.

Officer McElwee of the District of Columbia Metropolitan Police Department (MPD) 2<sup>nd</sup> District briefly attended the meeting. He mentioned that he will continue to stay in contact with USACE to provide MPDC assistance as needed. No questions were asked regarding the 2<sup>nd</sup> District's role in current Spring Valley operations.

**C. General Announcements**

D. Noble announced that recent website updates include the November 2012 RAB minutes and associated materials, along with the January 2013 monthly project summary.

D. Noble announced that the reorganized Spring Valley project website structure successfully launched on February 1, 2013. The main project website (<http://www.nab.usace.army.mil/Home/SpringValley.aspx>) was streamlined to include current project news, recent project documents (approximately one year old or newer), and a limited selection of popularly viewed older project documents. All other historical project documents are archived on a separate extranet site, which is structurally similar to a SharePoint platform. Interested community members who would like access to these electronic archives should send an email to Andrea Takash, of the USACE Baltimore District Public Affairs Office (PAO), who will supply them with an individual permanent username and password. Additional details were provided at the January 2013 RAB meeting. (As described at the January 2013 RAB meeting, many documents are available at the Information Repository at the Tenley-Friendship Branch Library.)

**D. Task Group Updates**

Malcolm Pritzker, RAB Member, provided a membership task group update. A RAB membership application for Ralph Cantral was favorably reviewed by the Membership Task Group. All RAB members have reviewed the completed application and responded favorably. This applicant is a Spring Valley

resident with a strong background in natural resource management (particularly coastal habitats) and coordination among numerous federal, state, territory, and local agencies as well as large corporations. He recently served as the Sector Coordinator for the National Climate Assessment, currently serves as a Senior Advisor at the National Oceanic and Atmospheric Administration (NOAA), and was recently appointed the Acting Director of the Coastal America Partnership.

M. Pritzker made a motion to accept this applicant for membership. William Krebs, RAB Member, seconded this motion.

All RAB members voted in favor of R. Cantral as the newest community member to join the RAB.

M. Pritzker invited R. Cantral to join the RAB.

G. Beumel congratulated R. Cantral on his RAB membership.

## II. USACE Updates

D. Noble, Spring Valley Project Manager and Military Co-Chair, provided an update on the Site-Wide Remedial Investigation (RI) efforts associated with the munitions and explosives of concern hazard assessment (MEC HA).

T. Beckwith, Spring Valley Project Manager, provided an update on the groundwater investigation.

B. Barber, Spring Valley Project Manager, provided a brief status update on the tentative low-probability schedule and progress to date for 4825 Glenbrook Road.

### A. Site-Wide Remedial Investigation (RI) Contents: Munitions and Explosives of Concern Hazard Assessment (MEC HA)

[An overview of this topic (description, purpose, development, and usage within the RI report) is presented below. Site-specific details applicable to the Spring Valley FUDS will be presented at the upcoming March 2013 RAB meeting.]

D. Noble encouraged EPA, DDOE, and Dr. Peter deFur to contribute to this presentation as they see fit, for the purpose of sharing their knowledge and experience with the MEC HA methodology.

**Background:** As described at the June and July 2012 RAB meetings, the Site-Wide Remedial Investigation (RI) report for the Spring Valley FUDS is currently in the early stages of preparation. This report will summarize all investigative data collected in Spring Valley, characterize any environmental contamination resulting from historical World War I related activities, and assess risks to human health and the environment. (Details of the work plan for this effort were provided at the July 2012 RAB meeting.) The Site-Wide RI report will include a human health risk assessment (HHRA) that addresses risks of exposure to chemical contamination, and will also include a hazard assessment (HA) that addresses risks of exposure to munitions and explosives of concern (MEC).

**Overview:** The munitions and explosives of concern hazard assessment (MEC HA) is a methodology designed to address the unique risks presented by MEC.

- The MEC HA methodology meets requirements to conduct site-specific risk assessments for human health and the environment at project sites where MEC has been encountered. This assessment process is stipulated by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), which guides the overall RI, FS, and DD process for the Spring Valley project and other FUDS projects.
- The MEC HA results are included in the site-wide RI report, in conjunction with the HHRA.

**Development:** The MEC HA was established in 2007, but very few MEC HA evaluations have been conducted nationwide to date. Large environmental cleanup projects typically progress very slowly, the Spring Valley FUDS is a good example of this fact, presenting relatively few situations where it has been used so far. The MEC HA tool is still fairly new with numerous issues still being resolved, due to the differences between the MEC HA evaluation and a typical chemical contaminant evaluation. Ongoing development of the MEC HA is essentially a conversation between the USEPA, who took the lead in developing the overall framework, and the DoD, who is highly concerned with the presence of MEC at project sites. Many individuals within these agencies continue to fine-tune the MEC HA tool.

- The existing CERCLA framework includes a detailed structure for assessing and investigating potential chemical contaminant hazards at a site, followed by evaluation of cancer and non-cancer human health risks as well as ecological health risks at the site. Many agencies and industries nationwide are interested in the effects of chemical contaminants because it is a common hazard at many sites.
- In contrast, MEC presents a unique hazard when it is evaluated as an environmental contaminant. Although MEC items are a chronic environmental problem, they are not commonly evaluated as hazards until the item detonates, which creates sudden and acute human and ecological health effects. These munition items are considered to be a Department of Defense (DoD) issue and are not as common as chemical hazards. Although there is limited interest in MEC hazards compared with chemical hazards, and the MEC HA is a relatively new assessment tool, the interest of affected communities adds a third voice to the discussion of MEC HA development.

**Purpose:** The overall purpose of the MEC HA is to provide a consistent framework for organizing site-specific MEC information that will be used during the decision-making process. Using this framework, project teams will make similar hazard management decisions when faced with similar site situations. The MEC HA supports the site-specific decision-making process in several other ways, including:

- Assists with managing uncertainty during the decision-making process. This framework helps to identify when a sufficient quantity and quality of information has been collected to make management decisions that support remedial, removal, or no further actions at the site.
- Ensures the continuity of hazard management evaluations and decisions at a site over the duration of the project. The use of a consistent and well-accepted framework ensures that site-specific decisions are likely to continue to receive support during project team transitions and changes, such as involvement of new staff, contractors, and/or stakeholders.
- 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.
  - In general, the MEC HA provides an opportunity to quantify the severity of MEC hazards, calculate numerical hazard scores for each potential scenario at the site, and run this evaluation multiple times to determine the effects of various factors on the final hazard score. The existing baseline scenario (no further action) is compared with other scenarios that may result in lower or higher MEC hazard scores.
- The MEC HA addresses human health and safety associated with potential exposure to MEC at Munitions Response Sites (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).

- This is important for the Spring Valley FUDS, where conventional MEC items are evaluated via the MEC HA whereas CWM is factored into the traditional HHRA.

**Format:** The MEC HA itself is a software tool similar to an Excel spreadsheet with a series of steps that are followed. Questions require responses in the form of filling in specific information or selecting drop-down menu variables. In some cases, these variables do not adequately fit the specific project site, and compromises are made. All inputs into the software spreadsheet are then used to calculate and generate a final numerical score for the particular MRS of interest.

**Site-Wide MEC HA Areas:** Within a project site, the MEC HA is conducted for each specific area that contains MEC concerns. Large project sites often contain more than one area of concern, each of which is evaluated separately, in which case multiple MEC HAs may be completed for the overall site.

- Each area evaluated by the MEC HA is called a “munitions response site” (MRS). These areas are analogous to the HHRA “exposure unit” where specific chemicals may or may not be present, and for which exposure receptors and pathways and scenarios are evaluated.
  - The proposed number, types, and locations of MRSs within the Spring Valley FUDS will be presented at the March 2013 RAB meeting. The Spring Valley Partners anticipate generating multiple MEC HA scores, one for each MRS at the site.

**Site-Wide MEC HA Components:** The MEC HA evaluates three numerical explosive hazard components. These include:

- Severity – This is defined as the potential severity of the effect on a human receptor in the event that a MEC item functions (detonates) as intended. (This component focuses on human health risks.)
- Accessibility – This is defined as the likelihood that a human receptor will be able to interact with a MEC item. (This component focuses on public accessibility of the hazard.)
- Sensitivity – This is defined as the likelihood that a MEC item will function (detonate) in the event that a human receptor encounters and interacts with it. (This component accounts for MEC type and MEC sizes, which can be discussed in greater detail at the March 2013 RAB meeting.)
- Additional components that are factored into the MEC HA evaluation include text-based summary information (general site-specific information), site-specific munitions and explosives information (the types of MEC and bulk explosives that are present), current land use activities (and planned future activities, if any), potential remedial/removal actions (general information about alternatives under consideration), and anticipated post-response land use activities (which are associated with the remedial/removal action alternatives).

**Site-Wide MEC HA Outcomes:** Each MRS removal/remedial action scenario that is assessed by the MEC HA produces a score that is associated with one of four categories, referred to as Hazard Levels. These reflect the interactions between current or future human activities in the MRS, and the types, amounts, and conditions of MEC items within the MRS. These are based on relative numeric scores ranging from 125 to 1000 for decision-making purposes, and do not define specific actions that must be taken. Typical characteristics of lower Hazard Levels are progressively less hazardous. General descriptions of Hazard Levels are as follows:

- **Hazard Level 1 (840 – 1000)** – Sites with the highest hazard potential. These may include areas with highly sensitive “special case” unexploded ordnance (UXO) items on the surface, former target areas, or open burn/open detonation (OB/OD) areas. Generally, these are sites that are moderately or fully accessible to the public and have not undergone thorough cleanup to date.

- **Hazard Level 2 (725 – 835)** – Sites with a high hazard potential. These sites are typically similar to Hazard Level 1 sites with slightly lower hazard severity, such as fused items or intrusive activities that overlap with subsurface UXO items.
- **Hazard Level 3 (530 – 720)** – Sites with a moderate hazard potential. These sites are typically similar to Hazard Level 4 sites with slightly higher hazard severity, such as subsurface MEC due to past clearance activities or moderate to limited public accessibility.
- **Hazard Level 4 (125 – 525)** – Sites with a low hazard potential. These sites may have any type of MEC or other prior use, with a low chance of encountering MEC (e.g., a propellant site or a firing point). The presence of MEC is limited to subsurface items with an incomplete exposure pathway, where intrusive work must be conducted in order for exposure to occur. Generally, these are sites with very limited public site accessibility and/or a low number of contact hours.

**Current MEC HA Methodology Issues:** D. Noble mentioned two issues with the current MEC HA methodology.

- The MEC HA assigns a specific value for the amount of MEC that may be present at a specific type of MRS. It is not flexible enough to account for known current site conditions or estimated values based on previously-completed site investigations.
  - For example, the “firing point” and the “target area” of the historical range fan were identified as two potential MRS categories within the Spring Valley FUDS. The MEC HA assumes that a much higher amount of MEC is present in the “target area” category compared with the “firing point” category, because it expects more MEC items to be clustered around the target. This assigned value cannot be adjusted to reflect a known smaller number of MEC items in the target area (which may be due to previous removal efforts or limited MEC encounters during thorough investigation).
- The MEC HA acceptable risk range has not been clearly defined because this tool is new and still under development. The significance of each Hazard Level has not been clearly established in terms of hazard assessment decision-making. This is unlike a typical HHRA, which incorporates specific guidance on the acceptable number of excess cancers for a given chemical contaminant, and for which there is widespread agreement on acceptable risk ranges above which remediation/removal actions must be conducted.
  - For example, no action may be taken for a site with a Hazard Level of 1 (highest hazard potential), while remedial/removal actions may be conducted for a site with a Hazard Level of 4 (low hazard potential).

**Tentative Schedule:** Site-specific MEC HA details for the Spring Valley FUDS continue to be discussed among the Spring Valley Partners and will be presented at the March 2013 RAB meeting. The arrangement of hazard areas across the site and the site-wide hazard assessment methodology will be presented by a USACE Baltimore contractor (ERT) who is writing the site-wide RI report. Technical information on the different hazards associated with types of munitions, found at the Spring Valley FUDS, will be presented by a USACE Baltimore ordnance and explosives safety specialist. **The goal of this presentation is to ensure that the RAB and community are familiar with the MEC HA purpose and contents when the site-wide RI is completed and made publicly available.**

Question from Kent Slowinski, Audience Member – Which document addresses CWM risks?

D. Noble replied that CWM risks can be addressed during the standard risk assessment process because CWM represents a chemical hazard, and toxicity values are available for some chemical agents. In general, CWM is qualitatively assessed within the human health risk assessment (HHRA) portion of the RI report.

Steve Hirsh, U.S. Environmental Protection Agency Region III, added that this depends on the stage of the investigation process and the ultimate goals. All CWM encountered during the investigation process is fully cleaned up to minimize risks. There is no qualitative tool to assess whether more CWM is potentially present at a project site.

Question from K. Slowinski, Audience Member – Is there a specific Spring Valley project document that addresses CWM risks?

D. Noble confirmed that CWM risks will be addressed in the Site-Wide HHRA.

Question from K. Slowinski, Audience Member – Is the HHRA available on the project website?

D. Noble clarified that the HHRA is currently in preparation as part of the Site-Wide RI report.

Question from W. Krebs, RAB Member – Does the MEC HA score provide a way to prioritize the cleanup areas?

D. Noble confirmed this and noted that this topic will be addressed during tonight's presentation. [Relevant information is summarized above.]

Question from Lee Monsein, RAB Member – This topic is confusing to me. I understand the rationale for assessing the risks of known MEC buried in a particular location, but all MEC items encountered to date were removed during Spring Valley project efforts. The MEC HA would presume that nothing remains buried, but it sounds like a tool that would be used for assessing the presence of known MEC items that may or may not be removed in the future.

D. Noble explained that the MEC HA process is similar to the standard RA process, during which chemical contamination is encountered, and then evaluated to determine the associated level of hazard, and finally remediated based on the risk assessment conclusions. The MEC HA essentially performs the same task by describing the munition types that are potentially present in specific areas, followed by assigning a hazard level to each area, and then determining whether remediation is needed.

Question from L. Monsein, RAB Member – Why wasn't this type of assessment used early during the Spring Valley project, before many munition items were removed? I am under the impression that cleanup efforts have removed all known munition items regardless of objective assessments and hazard levels.

D. Noble confirmed that all encountered munition items were removed in accordance with basic safety regulations. The entire Spring Valley FUDS can be assessed using the MEC HA, and in this case, not every single property has been investigated. Based on known coverage and associated information, the MEC HA assesses potential hazards at areas that have not been investigated to determine whether further work is warranted.

Question from L. Monsein, RAB Member – Does the MEC HA presume that more munitions are present?

D. Noble confirmed this, with the caveat that a good argument can be made for excluding areas where additional MEC is not anticipated. The MEC HA does not need to be conducted for a particular MRS where the project team feels that no additional MEC is present.

Comment from L. Monsein, RAB Member – So all known munition items were removed, and the MEC HA is used to evaluate areas where the presence of MEC is still uncertain.

D. Noble confirmed this.

S. Hirsh added that the 4825 Glenbrook Road site is the only place in Spring Valley where the MEC HA has been used to date. The purpose of the MEC HA at this site was to guide remediation decisions. The amount of relative risk remaining at the site was evaluated under different scenarios, including no further action, topping the property with clean soil, or excavating the entire property to saprolite. These options were weighed and one was chosen as the remedial action for the site.

Question from L. Monsein, RAB Member – Was the 4825 Glenbrook Road assessment considered an official MEC HA or just a similar assessment?

S. Hirsh replied that an official MEC HA was conducted for the 4825 Glenbrook Road site.

Question from Kathleen Connell, RAB Member – My background is in financial risk assessments rather than environmental ones. I am unclear on the rationale for the timing of this assessment. Why are you conducting the MEC HA now, instead of earlier during the project? Is the MEC HA simply a method of evaluating whether you have successfully met your risk reduction requirements? Why are you imposing this risk assessment at this stage of the project, when roughly 80 to 90 percent of all cleanup efforts have already been completed?

D. Noble explained that a significant number of investigative efforts and removal actions have been completed, and an initial RI report was written earlier during the project, but the Spring Valley project is currently in the RI phase of the FUDS cleanup. An RI report must be prepared to document all completed efforts, all findings, all potential risks that may remain at the site, and the associated conclusions. It is appropriate to conduct these risk assessments (the HHRA and the MEC HA) during further development of the Site-Wide RI report.

S. Hirsh added that the MEC HA does indicate whether sufficient investigation has been conducted.

Comment from K. Connell, RAB Member – Right, so the MEC HA indicates whether you have mitigated a sufficient amount of risk.

S. Hirsh provided further details of the MEC HA process. Site-specific data are evaluated against the target value for the site, which is defined as the level of risk that you are willing to accept. Qualitative risk assessments use this target value as the maximum amount of risk that qualifies as acceptable. If your site values (e.g., 600) are above the target value (e.g., 500), then the site risks exceed your target risk range, and remedial action must be taken to reduce the risk. The MEC HA will evaluate clusters of sites to determine whether their risks are within or above the acceptable risk range.

Question from K. Connell, RAB Member – Should this acceptable risk value have been set twenty years ago when the Spring Valley project began?

S. Hirsh clarified that the MEC HA methodology did not exist until recently.

Dr. Peter deFur, RAB TAPP Consultant, reiterated that the MEC HA methodology was established in 2007.

Question from K. Connell, RAB Member – What tool was used to evaluate MEC hazards before the MEC HA was established, and how do you standardize your current results against previous results?

S. Hirsh clarified that a tool to evaluate this particular issue (MEC hazards) did not exist.

Question from K. Connell, RAB Member – So you did not use any type of MEC evaluation earlier during the project?

S. Hirsh explained that the risks of chemical exposure were evaluated using cancer and non-cancer health endpoints. For each chemical, the government defines an acceptable risk range. If exposure to a chemical will cause the number of excess cancers to exceed the maximum acceptable number, then remedial action is required to reduce exposure risks to that chemical. However, Superfund did not plan for cleanup sites where buried MEC items could potentially explode; these projects are typically assigned to a subset of Superfund sites under the jurisdiction of the Department of Defense (DoD).

Question from K. Connell, RAB Member – So during the initial risk assessment process that began many years ago, the standard risk evaluation was based on health-related information.

S. Hirsh confirmed this.

Question from K. Connell, RAB Member – In 2007, this new broader risk management tool was put into effect. Was there any attempt to determine what percentage of the initial risk management evaluation, performed between 1990 and 2007, has been included in the MEC HA evaluation? For example, do cancer risks comprise two-thirds of the MEC HA evaluation? How are these two risk management efforts integrated?

S. Hirsh explained that with respect to cancer and non-cancer human health endpoints, whenever contamination was identified for cleanup, the Spring Valley Partners would review the current scientific information, the available data, and the corresponding regulatory guidance values to determine how much of the contamination required removal at that time.

Question from K. Connell, RAB Member – You integrated the health index into the site-wide RI, correct?

P. deFur explained that the regulatory criteria and the MEC HA are two separate analytical tools used during RI development. The MEC HA, which is a complementary tool added in 2007, provides a standardized methodology for predicting and evaluating explosives risks. The MEC HA was the only analytical tool that was added to the RI process in 2007.

Question from K. Connell, RAB Member – The MEC HA is considered an addendum, not a replacement?

P. deFur confirmed that the MEC HA augments the existing process and adds a standardized methodology strictly for assessing explosives risks.

Question from K. Connell, RAB Member – So we do not know if we have actually made progress with evaluating MEC risks because this component was not evaluated early during the project?

P. deFur replied that MEC risk management may have been reviewed by EPA. He was uncertain what specific MEC risk management decisions were made in Spring Valley during the 1990s.

S. Hirsh noted that protocols were developed specifically for the unique scenario at the Spring Valley FUDS to make decisions about which residential properties should be geophysically investigated. The final list of properties was selected several years prior to the availability of the 2007 MEC HA.

Question from K. Connell, RAB Member – The Spring Valley project is coming to a close, and we are approaching the final project efforts. How will you explain to the community that you are using a new risk mitigation tool that was not available at the project's beginning, and how will you explain how much of the previously calculated risk has been mitigated? Will the cleanup process be closed out with a large percentage, for example 80 to 90 percent, of the cleanup completed? What is the ultimate goal?

W. Krebs replied that the Spring Valley project previously focused on evaluating and cleaning up individual points of interest (POIs). Current risk assessments are based on human and environmental health issues and the presence of chemicals in various areas of the site. Now we are transitioning into a site-wide review of the project, where two separate topics (explosive munitions and chemical contamination) are being evaluated separately across the entire site. Explosive munitions were not previously evaluated for risks.

S. Hirsh noted that the Spring Valley project has always focused on munitions cleanup. The Spring Valley FUDS was initially identified as a munitions site, and chemical contaminants including arsenic were introduced to the project later.

D. Noble added that for many years, clean-up projects focused on addressing environmental contamination issues. Chemicals were considered an environmental hazard, while munition items were considered a physical safety hazard with emphasis on avoidance and removal during chemical cleanup efforts. Recently, thinking has evolved to assess and quantify the environmental hazards of munition items, in sense, to consider munitions as “environmental contaminants.”

P. deFur mentioned that twenty years ago, during investigation of military sites containing explosives, there was a systematic methodology for evaluating site-specific knowledge. A checklist was used to

assess the potential danger at a site. Questions focused on defining the site boundaries, confidence levels regarding potential findings within those boundaries, current knowledge about the stability, size, and magnitude of the buried items. When items were recovered, an on-site determination of safety and potential risks was conducted using this checklist. Portions of this checklist were included as a drop-down menu in the 2007 MEC HA spreadsheet.

Comment from K. Connell, RAB Member – Munition data were gathered, but they did not have a computer-based framework to analyze the data.

P. deFur explained that the munition data were used to evaluate safety hazards using the checklist methodology. This is the only way that both time frames can be compared. Based on his review of the 2007 MEC HA methodology and the previous checklist methodology, the same munition information was evaluated during both time frames.

Question from M. Pritzker, RAB Member – Do I understand correctly that the MEC HA is simply a more sophisticated electronic checklist that is used separately at each cleanup site nationwide?

D. Noble confirmed that the MEC HA is an electronic tool that is to be used at numerous different sites across the county with the goal of generating a hazard score for each site.

Question from M. Pritzker, RAB Member – What is the significance and use of each score? For example, if the Spring Valley FUDS is assigned a score of 5 and a site in Kansas is assigned a score of 6, what happens?

S. Hirsh clarified that direct comparisons are not made between hazard scores from different sites. The MEC HA score is a site-specific value generated for the purpose of making a site-specific remedial action decision. Specifically, the MEC HA score assigns a level of risk for that particular site, and this risk level reflects the potential presence of munitions remaining at the site and the associated potential for future human health impacts.

S. Hirsh added that risk assessments for Spring Valley are currently being conducted even though a significant percentage of arsenic and other chemical contamination have already been cleaned up. The resulting risk assessment conclusions will be used to determine whether additional work needs to be conducted (for example, additional investigation at 15 residential properties conducted recently).

Question from M. Pritzker, RAB Member – So the MEC HA score for the Spring Valley FUDS will not be compared to the MEC HA score for another site?

D. Noble and S. Hirsh confirmed this.

Comment from M. Pritzker, RAB Member – This process appears to be similar to the overall risk assessment process. An electronic checklist is followed and provides a risk value. Based on the risk assessment conclusions and the electronic tool results, the project team will identify additional actions that should have been completed on a given property, followed by a decision to conduct additional efforts.

S. Hirsh confirmed that this is the general process that is followed.

Question from George Vassiliou, RAB Member – Is the MEC HA conducted during the pre-cleanup phase (during site assessment and landscape grading) or the post-cleanup phase?

D. Noble explained that the MEC HA is conducted during the pre-cleanup phase. This provides the ability to run theoretical cleanup scenarios to see how each scenario affects the final MEC HA score for the site.

G. Beumel added that the MEC HA process is based on current site conditions to determine what further actions are necessary. Any munitions items that were found previously are not incorporated into the assessment, because the goal is not to justify previous cleanup actions during which those items were removed. Instead, the goal is to determine further actions based on current site conditions.

Request from L. Miller, RAB member – Could you review the MEC HA scores and their significance?

D. Noble agreed. [This topic was described during the presentation and is summarized above.]

Question from Paul Dueffert, RAB Member – Will site-specific MEC HA scores and conclusions be shared at the March 2013 RAB meeting?

D. Noble replied that preliminary MEC HA scores have been calculated, but there is little if any value in sharing these with the RAB prior to Spring Valley Partner discussion and review. These preliminary values will be further refined, pending Partner discussion of the MRS arrangement and the significance of each MRS's MEC HA score. Draft MEC HA values will certainly be included in the draft version of the site-wide RI report.

Question from Dr. P. deFur, RAB TAPP Consultant – USACE performed a quantitative MEC HA analysis for the 4825 Glenbrook Road site. This provides a good example of how the MEC HA process works and the type of score it generates. Is this MEC HA analysis available on the Spring Valley project website?

D. Noble confirmed that the MEC HA evaluation for the 4825 Glenbrook Road site is publically available on the new Spring valley project website.

P. deFur added that a MEC HA presentation was provided at a Partnering meeting during that time frame, so there is a summary of the presentation and the resulting discussion.

Question from L. Miller, RAB member – Does the MEC HA serve as documentation to wrap up loose ends for the site investigation, or does the MEC HA score guide decisions on whether additional work is needed at the site?

D. Noble explained that the entire CERCLA process can serve the purpose of wrapping up loose ends and identifying further work that requires completion. Once the Site-Wide RI report is completed, the Spring Valley project team will consult with the regulatory Partners and the Spring Valley community to determine whether additional efforts are warranted in order to close out the site. If the consensus is yes, then areas of the site requiring cleanup will be identified in the Feasibility Study (FS) and the Proposed Plan.

Comment from L. Miller, RAB member – Potential issues with the use of the MEC HA tool must also be factored into the analysis.

D. Noble confirmed this. The MEC HA must be accompanied by a write-up, which includes an uncertainty analysis that addresses factors that did not fit the specific site and reflects whether the MEC HA score(s) appear to be under-inflated or over-inflated.

Question from L. Miller, RAB member – So the MEC HA score is a portion of the entire analysis?

D. Noble confirmed that the MEC HA score is not the entire analysis.

### **C. Groundwater Investigation**

[Previous groundwater study efforts were described at the November 2010 RAB meeting as well as various earlier RAB meetings. Additional planned groundwater study efforts were described at the May 2011 RAB meeting as well as various subsequent RAB meetings. Recently completed and upcoming groundwater study efforts were summarized at the January 2012 through January 2013 RAB meetings.]

**Future Groundwater Study Efforts:** Plans for future groundwater study activities were further discussed and resolved with the Partners during two successive interagency groundwater conference calls in January 2013. Participants included groundwater experts from different agencies. The Partners discussed how data from recently completed groundwater efforts will be integrated into the site-wide groundwater RI report and whether groundwater study objectives were achieved. Proposed ongoing efforts were also discussed to determine if additional wells or sampling data are necessary to prepare and complete the site-wide groundwater RI report. Consensus was reached for proposed upcoming efforts,

including continued monitoring at existing wells and surface water locations, along with installation of two additional deep wells during the next couple of years.

Revised conclusions and recommendations for future groundwater study efforts were provided to the Partners following each conference call. **Additional Deep Wells:** Two additional deep monitoring wells are proposed for installation to ensure that groundwater study objectives are achieved.

- MW-46S/D refers to a proposed nested screened deep well planned for installation near and southwest of the Sibley sump, for the purpose of further delineating vertical groundwater contamination in this vicinity. This well will be drilled to a depth of 125 feet, followed by down-hole geophysics to identify a total of two depth intervals for monitoring. Perchlorate detections are consistently above the health advisory level of 15 ppb at the Sibley sump, where shallow groundwater collects in the bottom of an elevator shaft at approximately 20 feet below ground surface (bgs).
- MP-5 refers to a proposed ported FLUTE deep well planned for installation on Rockwood Parkway, for the purpose of further delineating the extent of perchlorate and arsenic in deep groundwater. This well will be drilled to a depth of 200 feet and installed down gradient of the Glenbrook Road disposal pits and two existing deep wells of interest: PZ-4S/D (with the highest perchlorate detections to date) and MP-2 (with arsenic detections at multiple intervals as deep as 200 feet, and with perchlorate detections at multiple intervals as deep as 150 feet).

**Semi-annual Sampling:** Selected groundwater monitoring wells and surface water monitoring locations will be sampled twice annually for the next few years. These locations include a total of 20 shallow and deep wells and a total of 10 surface water locations. The first semi-annual sampling event is tentatively scheduled for April 2013, followed by the second sampling event planned for September 2013.

Question from unidentified audience member – Is PZ-4S/D the groundwater monitoring well that is located on AU's campus?

T. Beckwith confirmed that PZ-4S/D is situated in front of Kreeger Hall at AU's campus.

Question from Allen Hengst, Audience Member – Are you not going to further investigate the deep monitoring well MP-2, where you found the highest arsenic concentrations in Spring Valley groundwater? The same arsenic concentrations in groundwater were obtained three times last year (2012). Now are you proposing to install a deeper monitoring well nearby and quit addressing arsenic concentrations at MP-2?

T. Beckwith noted that the new deep monitoring well (MP-5) will be installed to further address this topic and other groundwater study objectives. T. Beckwith acknowledged the arsenic and perchlorate detections in groundwater at MP-2, with groundwater flowing from the AU campus toward the Potomac River. The project team feels that they have determined the nature and extent of groundwater contamination in the vicinity of MP-2.

T. Beckwith explained that down gradient of MP-2, two existing deep wells (MP-3 and MP-4) were non-detect for arsenic, with minor perchlorate detections. The purpose of installing an additional deep well (MP-5) is to further evaluate the down gradient nature and extent of groundwater contamination, and specifically to determine whether contaminated groundwater is flowing between and bypassing MP-3 and MP-4.

Question from A. Hengst, Audience Member – Will no further actions will be taken at MP-2?

T. Beckwith replied that arsenic and perchlorate concentrations at MP-2 will continue to be monitored.

Question from A. Hengst, Audience Member – Will you take any actions to clean up the contaminated groundwater at MP-2?

T. Beckwith replied that future remedial actions will be evaluated in the site-wide groundwater RI/FS.

Question from A. Hengst, Audience Member – The isotopic analysis effort was planned and completed over a 3-year time frame. The results showed that both perchlorate plumes originated from the same source, but you do not plan to continue investigating this topic?

T. Beckwith clarified that although both plumes originated from the same location, identified as Chilean nitrate deposits, this does not mean that they were caused by the same source in the Spring Valley FUDS. This data will be considered, along with the rest of the sampling data, when the groundwater study is completed and the need for additional actions is determined.

Question from A. Hengst, Audience Member – What action(s) do you plan to take if you finally conclude that the Sibley sump groundwater plume originated from the AU campus?

L. Monsein stated that it is not appropriate to inquire about future remedial actions for perchlorate at this time. This topic has not been considered or discussed previously, and should not be the topic of tonight's conversation.

A. Hengst commented that nothing further is planned to address this topic even through three years of the groundwater study and associated costs were spent to investigate the perchlorate plume connection.

L. Monsein replied that A. Hengst's comment does not reflect what he said. The topic in question is not the subject of tonight's presentation, and A. Hengst's focus on this topic is out of order.

M. Pritzker added that the groundwater study has not been completed. Once data collection is completed, then all results will be evaluated.

T. Beckwith mentioned that different remedial alternatives for groundwater will be evaluated in the Feasibility Study (FS) for site-wide groundwater.

Question from A. Hengst, Audience Member – Is the isotopic analysis effort completed? Will you further study the isotopic analysis results?

G. Beumel noted that the groundwater study process has been explained previously. Significant groundwater data collection efforts will be followed by decision-making, and no interim actions will be taken during the data collection phase.

Question from A. Hengst, Audience Member – Why are you not planning to install additional groundwater monitoring wells between Kreeger Hall at AU's campus and the Sibley Sump? Considering that the perchlorate signatures are the same in both areas, why are you not conducting additional isotopic analyses?

T. Beckwith clarified that the similarity between both perchlorate plumes is part of the rationale for installing the new deep well (MP-5) on Rockwood Parkway.

A. Hengst asked whether isotopic analysis will be conducted for the results from the new deep well.

Request from M. Pritzker, RAB Member – In the interest of time, I suggest that we move on to the next topic to ensure that the RAB fully covers the lengthy agenda for tonight's meeting. The next steps for addressing Spring Valley groundwater, upon completion of the groundwater study, is a long-standing question that remains to be answered.

Comment from A. Hengst, Audience Member – It is unclear whether any additional isotopic analyses will be conducted. Tonight's presentation described additional monitoring well installations and sampling.

G. Beumel suggested that USACE provide a yes or no answer, to the best of their knowledge, to enable the RAB to move on to the next agenda topic.

D. Noble replied that no additional isotopic analyses for perchlorate are planned.

Request from K. Slowinski, Audience Member – It would be helpful if USACE shared the groundwater investigation conclusions at an upcoming RAB meeting.

Mary Bresnahan, RAB member, seconded this request and suggested that this topic be added to a future agenda.

D. Noble agreed. [This suggestion was added to the list of future agenda topics.]

#### **D. Military Munitions Response Program**

##### **4825 Glenbrook Road**

###### **Completed Schedule Components**

**Completed Documents:** Final 4825 Glenbrook Road CERCLA-related documents are posted on the Spring Valley project website and are also available at the Information Repository at the Tenley-Friendship Branch Library. These documents include the Decision Document, which formally selects Alternative 5 (removal of the house and cleanup to residential standards providing for unrestricted future use of the property) as the cleanup alternative for the 4825 Glenbrook Road site. These documents also include the Demolition and Disposal Plan, which describes the removal and disposal of the 4825 Glenbrook Road house and associated debris. (Details of finalized documents were provided at the September 2012 and previous RAB meetings). These documents also include the Remedial Design and Remedial Action Work Plan, which is described below.

**Final Remedial Design and Remedial Action Work Plan:** The 4825 Glenbrook Road Remedial Design and Remedial Action work plan (which includes the Public Protection Plan) was finalized in January 2013. This document describes the intrusive activities designed to achieve remedial objectives, including details of high-probability excavation engineering controls and safety procedures. (Details of this plan were shared with the RAB and the community at the October 2012 Joint RAB/Community meeting. The revised maximum credible event (MCE) and follow up questions and concerns were addressed at the November 2012 RAB meeting.)

**Demolition Phase:** House demolition was completed in late November 2012, after the Thanksgiving holiday. Remaining house structural components are limited to the basement foundation walls and floor. The site is currently secured with fencing, and a fall protection system was installed to minimize worker safety risks at the site. (Details of this effort were shared with the RAB and the community at the January 2013 RAB meeting.)

**Site Preparations:** USACE began site preparations for upcoming investigative and remedial action work in early December 2012, with a break for the winter holidays, and completed all low-probability site preparations in January 2013. (Details of this effort were shared with the RAB and the community at the January 2013 RAB meeting.)

**Initial Low Probability Soil Removal:** The first low probability effort began on January 28, 2013 and is completed. This effort consisted of excavating a small portion of the front sidewalk, followed by confirmation sampling and restoration. Impacts to traffic flow on Glenbrook Road were temporary, and normal traffic flow has been restored.

Soil was excavated to saprolite (weathered bedrock) in the front sidewalk area, which extended from the front yard retaining wall to the street curb. This area included a small portion of the previously excavated Area C (where burial pit 3 was located) to ensure thorough excavation along the entire street curb. The excavation depth ranged from 18 to 48 inches below ground surface (bgs) due to the variable saprolite elevation across the front yard of the site. The bottom of the excavation was confirmed as competent saprolite by USACE and contractor (Parsons) geologists. No soil staining or perimeter air monitoring detections were observed.

###### **Tentative Schedule (Next Steps)**

All site preparation and remedial action dates from this point forward are tentative and will be determined pending resolution of any remaining issues.

**Site Cleanup:** The tentative remedial action schedule was recently updated to reflect the revised cleanup time frame and currently extends from late November 2012 (the completed demolition phase) through April 2014. This schedule is subject to change pending resolution of any remaining issues and any findings of concern at the site.

- The remaining initial low probability efforts will tentatively begin in mid-February 2013 (next week). These efforts include several backyard test pits and relocation of a sewer utility that could interfere with implementation of remedial activities at the site.
- Following completion of initial low probability efforts, site preparations for high-probability work will begin, tentatively in early April 2013. These preparations include installation of all engineering controls, tabletop exercises, and equipment testing to ensure that all equipment functions properly.
- High-probability excavation is currently scheduled for April through December 2013.
- Remaining low probability removal actions in Areas A and B (including the driveway and a small portion of the backyard) are scheduled for January through March 2014 following completion of the high probability excavations.
- Site restoration is tentatively scheduled for April 2014. The project team anticipates turning the remediated and restored property over to the property owner (AU) in April 2014.

Question from S. Hirsh, U.S. Environmental Protection Agency Region III – On the photographs showing the front sidewalk area excavation, is the street curb situated on the right side of the photographs?

B. Barber confirmed this. In these photographs, the adjacent 4801 Glenbrook Road residential property is visible to the left. The only low probability portion of the front yard not excavated to date is the driveway, which will be maintained for property access purposes until the remaining low probability removal actions are completed in early 2014.

Question from P. Dueffert, RAB Member – To date, you have found nothing of concern during the initial low-probability excavations at the 4825 Glenbrook Road site?

B. Barber confirmed that no AUES-related or cultural debris, soil staining, or air monitoring detections were encountered since initial low-probability excavations began in January 2013.

Question from L. Monsein, RAB Member – Out of curiosity, what was the MEC HA score for the 4825 Glenbrook Road site?

B. Barber and P. deFur replied that the 4825 Glenbrook Road site was assigned a MEC HA score of 3 (Category 3).

Question from L. Monsein, RAB Member – Does this MEC HA score of 3 apply to the entire property?

B. Barber confirmed this.

Question from A. Hengst, Audience Member – When do you plan to complete the low-probability test pit excavations within the grassy strip between the 4825 Glenbrook Road backyard property line and the Kreeger Hall parking lot on AU's Campus?

B. Barber replied that excavation of these test pits is planned for next week (mid to late February 2013).

Question from A. Hengst, Audience Member – How long will this grassy low-probability excavation area take to complete?

B. Barber replied that the anticipated completion time frame for all initial low-probability test pit excavations is approximately two weeks.

Comment from Christine Dietrich, Audience Member – My family and I were briefed on the contents of the Public Protection Plan (PPP) a few weeks ago. I am puzzled because our alert system has not been installed even though low-probability efforts have already begun at the site.

B. Barber clarified that the safety plans and protocols for the residential properties within the Shelter-in-Place (SIP) zone are to support the high-probability excavations. The necessary equipment is currently in preparation by the contractor, and installation of this alert system for integration with the personal home security system will be scheduled very soon.

Question from C. Dietrich, Audience Member – Do I understand correctly that the Public Protection Plan does not apply to the 4825 Glenbrook Road site at this time because this portion of the remedial action is considered low-probability?

B. Barber confirmed this.

Question from C. Dietrich, Audience Member – Please correct me if my facts are wrong. The Lot 18 area was defined as a low-probability investigation until a significant quantity of active Lewisite was recovered, correct?

D. Noble clarified that a very small volume of Lewisite was encountered at Lot 18. There is no such thing as ‘active’ Lewisite.

C. Dietrich acknowledged this and noted that Lewisite was found in an area classified as low-probability.

D. Noble agreed and noted that the area was reclassified as high-probability based on the Lewisite finding.

Question from C. Dietrich, Audience Member – You are currently excavating soil in a low-probability area with uncertainty and associated risk assessment. You do not think that public protection plan efforts are warranted for my family whose property boundary is approximately 40 feet from the 4825 Glenbrook Road site boundary, simply because the excavation is defined as low-probability?

D. Noble explained that this protocol applies to the entire Spring Valley FUDS. Many residential property soil removals have been completed in low-probability excavation areas without use of public protection plan protocols. In the unlikely event that findings of concern are encountered in a low-probability area, contingency protocols are in place in accordance with the safety system.

C. Dietrich expressed her opinion that this scenario is unsatisfactory.

Question from Nan Wells, ANC3D Commissioner – Am I correct that you have extended the Shelter-in-Place (SIP) zone by approximately 60 feet or 90 feet from the original danger zone? How many residential properties are included in the SIP zone?

B. Barber replied that the SIP zone was increased by 50 feet. [As described at the January 2013 RAB meeting, the total MCE distance is 194 feet.] A total of 8 residential properties and the southernmost portion of the AU campus are partially or completely within the SIP zone.

G. Beumel noted that these details have been previously discussed and are not part of tonight’s discussion focused on low-probability efforts. The high-probability excavation details can be further discussed at the March 2013 RAB meeting. In the interest of time, he recommended that the RAB move on to the next agenda topic.

D. Noble added that information on high-probability investigation topics can be shared with the RAB and the community as the site efforts approach the high-probability excavation phase.

### III. Community Items

#### A. Spring Valley Follow-On Health Study Update

Dr. Mary Fox, Assistant Professor at Johns Hopkins University Bloomberg School of Public Health, provided an update on the follow-on Spring Valley health study.

**Background:** A detailed overview of the follow-on Spring Valley health study (including the overall scope, objectives, project team, funding, tentative schedule, and a summary of the original 2007 Spring Valley Public Health Scoping Study) was provided by M. Fox at the September 2011 RAB meeting, followed by status updates at the February/September 2012 RAB meetings.

**Contract Status:** The project has been extended through 2013 to allow sufficient time for final report preparation. This extension was requested due to delays in receipt of necessary health data and due to multiple rounds of approval prior to distributing the community survey. Administrative elements of this project continuation are being coordinated with DDOE.

**Report Status:** Data collection is completed. The project team is currently drafting their report, which will be reviewed by DDOE (the contracting agency) for clarity and completeness, and by the DC Department of Health (DCDOH) based on their data usage agreement with JHU. The final report is anticipated in 2013.

**Approach:** The follow-on health study is based on data analyzed to further examine potential contamination exposures, health risks, and associated concerns of the Spring Valley community. Disease rates and trends, community survey responses, and environmental indicators will be compared among two zip codes (20016 and 20015), the District of Columbia overall, and the United States nationwide. Two specific study areas were defined using census tracts for demographic analyses and cancer analyses: Spring Valley, DC (comprised of census tracts 801, 901, 1001, and 1002) and Chevy Chase, MD for comparison (comprised of census tracts 1100, 1401, 1402, 1500). Upon completion of data analyses and the written report, the project team will consider the findings and then make public health recommendations based on the findings from each study component as well as the overall findings comprising all components.

M. Fox acknowledged that the two study areas (Spring Valley and Chevy Chase) are not defined by neighborhood boundaries that are typically described by residents. Data collection, particularly data from health agencies, was associated with specific geographic boundaries. There are limitations when working with distinctions between multiple neighborhoods in these study areas.

**Environmental Exposure and Analysis:** This study component is comprised of three primary pieces and reflects updated data obtained during the 2005 through 2012 time frame.

- Available groundwater and surface water exposure pathways for the Spring Valley FUDS are currently being evaluated as the primary environmental issue of interest, using sampling data obtained from USEPA and USACE reports (2005 through 2012).
- Groundwater and surface water monitoring data associated with the Spring Valley groundwater study are being evaluated using sampling data from the contractor URS (2005 through 2012).
- Community and environmental health portraits are being prepared using updated databases maintained by USEPA, drinking water data from Washington Aqueduct, and air quality data from DDOE (2005 through 2012).

**Community Health Assessment (Cancer Data):** Potential site-related health effects and concerns are currently under evaluation, with the goal of providing an updated Spring Valley community health status and addressing health outcomes that were identified in the original 2007 scoping study as warranting additional attention. This study component is also comprised of three primary pieces and reflects updated data obtained during the 2004 through 2010 time frame.

- Population demographic data for 2006 through 2010 were obtained from the U.S. Census and the American Community Survey.
- The top 15 causes of mortality between 2004 and 2010 were identified using data from DCDOH's Division of Vital Records and DCDOH's DC Cancer Registry.
- Selected cancer incidence and mortality data from 2005 through 2009 were obtained from DCDOH's Division of Vital Records and DCDOH's DC Cancer Registry. This piece primarily focuses on arsenic-related cancers and other cancers of interest to the Spring Valley community (including leukemia, lymphoma, melanoma, and cancer of the bladder, kidney and renal pelvis, liver and bile duct, and lung and bronchus).

**Community Health Assessment (Community Survey Response):** The community survey was conducted to gather input from Spring Valley residents to further understand any ongoing site-related health concerns. A total of 865 respondents provided input. The three groups will be analyzed separately, pending further review to determine whether it makes sense to reclassify the respondents with ties to both zip codes.

- Most respondents (79 percent) lived, worked, or studied in the 20016 zip code, representing the Spring Valley FUDS and the surrounding vicinity.
- Fewer respondents (12 percent) lived, worked, or studied in the 20015 zip code (12 percent), representing the comparison community of Chevy Chase, MD.
- The remaining respondents (9 percent) were associated with both zip codes.

**Focus on Current Spring Valley Residents (Community Survey):** As part of the Community Survey Results reported above, a total of 567 respondents currently live in the 20016 zip code. Of these respondents, approximately 58 percent reported that they live inside the Spring Valley FUDS, and approximately 41 percent reported that they live outside the Spring Valley FUDS. The remaining 1 percent of respondents were unsure as to whether they live within or outside of the Spring Valley FUDS.

**Analysis of the Community Survey:** All survey responses will be characterized and all survey respondents will be described. Self-reported health status and health concerns will be presented, and community concerns will be reported. General comments regarding the survey will also be summarized.

**Final Report Overview:** The final report will contain an executive summary, three primary chapters (one for each study component), a synthesis across and discussion of all three study components, and the resulting public health recommendations. Each study component chapter will summarize the relevant data and associated data collection methods, and present the analysis and findings for each component.

- As described at the September 2012 RAB meeting, the environmental assessment portion will summarize exposure pathway review, community environmental health portraits, and data evaluation for groundwater, surface water, and drinking water. The health assessment portion will summarize demographic and cancer data and mortality analyses. The outreach portion will summarize information collected using the community health survey.

Question from L. Miller, RAB member – Will the follow-on health study results provide a scientific indication of health risks resulting from the proximity to chemicals?

M. Fox clarified that the health study serves a general health assessment for the Spring Valley community, and does not focus on any particular chemical exposure parameters.

Question from L. Miller, RAB member – Are you seeking an extension for the purpose of obtaining additional time or funding for the follow-on health study?

Jim Sweeney, DC Department of the Environment (DDOE), confirmed that additional time was requested due to difficulties in obtaining some of the necessary health data. The follow-on health study contract expired during this time, and DDOE is in the process of establishing a new contract with JHU.

Question from L. Miller, RAB member – Does the new contract include additional funding?

J. Sweeney clarified that the new contract does not include additional funding. The follow-on health study will be completed using the original funding amount.

M. Fox added that the contract is classified as a no-cost extension.

J. Sweeney confirmed this.

Comment from John Wheeler, RAB member – I have wondered for a long time why we, as the RAB, have been allowed to discuss this health assessment over the past several years. This topic is outside of our scope of authority, and USACE has remained silent on this topic for the same reason. Based on the RAB rulebook, the RAB is only permitted to discuss environmental restoration topics, so I suppose the health assessment is discussed as a service to the community, rather than as a RAB responsibility.

D. Noble shared his viewpoint on this topic. The follow-on health study is based largely on data collected for the Spring Valley project. These data were turned over to JHU researchers for the purpose of thoughtful evaluation and a drawing of public health conclusions that reflect Spring Valley project data as well as other health records. Sharing the JHU's health study conclusions benefits the RAB, even though these conclusions are unlikely to guide remedial decisions for the site.

D. Noble asked if the EPA feels differently.

S. Hirsh replied that the ultimate goal for all agencies involved is to protect human health. For example, one generic weakness of the RI process was the limited ability to evaluate potential risks associated with MEC, and USACE adopted the MEC HA methodology to ensure that these risks are addressed. Meanwhile, organizations like JHU and the Agency for Toxic Substances and Disease Registry (ATSDR) focus on community health concerns. USACE and the regulatory partners are interested in these health assessment activities, listen carefully to concerns, and sometimes conduct further sampling based on ATSDR recommendations. This is an important part of the overall process because JHU's and ATSDR's health assessment efforts are independent and are not influenced by the actions of project stakeholders.

Comment from J. Wheeler, RAB Member – If the follow-on health study was regarded as necessary by the regulatory partners, then the RAB and the community would not have had to undergo the discussions about the study and about the process of determining who would provide the funding. To some extent, this study is focused on evaluating past health issues including potentially severe exposures. The mission of USACE, EPA, DDOE, and the RAB is to provide advisory roles and to ensure that the Spring Valley FUDS is determined to be safe for the future.

Comment from M. Bresnahan, RAB Member – The RAB has expressed interest in the current follow-on health study following completion of the original 2007 health scoping study. The follow-up study is underway. We are concerned about cleaning up the Spring Valley neighborhood because of past and potentially future health concerns, so if no one is concerned about the topic, then why request the follow-on study?

J. Wheeler clarified that he was not implying the RAB was uninterested, and mentioned that the original JHU health scoping study results became available shortly after he joined the RAB several years ago. The RAB requested further health assessment, which resulted in the current follow-on health study. This request was probably made as community members, because the RAB itself looks towards the future and has no official role in the health assessment process.

P. Dueffert replied that J. Wheeler's statement is probably technically correct. As one of the newest RAB members and as a community member, he personally has limited input into the narrow issue of technical

oversight for restoration efforts, but this process must eventually reach closure. The JHU health assessments provide relevant information that assist community members, including the RAB, with providing input into this process. If this committee has any important function, it is probably aimed in that direction.

Comment from G. Vassiliou, RAB Member – The scope of the RAB is different from the concerns and interests of individual RAB members. The guidelines state that RAB members do not need to agree with each other, and it is obvious that we as a RAB have many different opinions. Individual members ask questions regarding cleanup efforts in Spring Valley, which brings different concerns to the table and to the attention of the community.

G. Vassiliou shared the RAB guidelines specifying what issues are addressed. A RAB may only address topics associated with environmental restoration activities because funding for the RAB is received from environmental services accounts. If another issue of interest to the community arises during these discussions, then the RAB installation co-chair should refer the issue to the appropriate installation office. These guidelines help to ensure that the RAB remains focused and provides maximum opportunity to advise environmental restoration activities.

G. Vassiliou emphasized that if individual RAB members are interested in discussing other topics, such as noise levels or water quality concerns, they should contact the RAB installation co-chair. The co-chair will then identify the appropriate point of contact or office responsible for addressing the issue, and pass along the interested RAB member's name for the purpose of resolving the issue. For example, I recently brought a safety concern and residential relocation appeal to the RAB on the behalf of C. Dietrich. Although the RAB discussed this issue during recent meetings, including a conference call, the RAB is not the point of contact for this concern. Any concerns outside of the environmental restoration focus of the RAB should be directed to the appropriate authority.

Comment from Alma Gates, At Large Representative for Horace Mann Elementary School – The RAB did not request health study funding or participate in the health study design. Three community members requested the original JHU health scoping study and permission was granted by DC. Community members also requested the follow-on health study. Although the RAB is an advisory body that addresses FUDS issues, and numerous RAB discussions have focused on opinions of the follow-on health study, ultimately these discussions did not impact health study decisions because the community requested that the study be conducted. As P. Dueffert stated, this health assessment is part of the larger picture of human health in Spring Valley, and all agencies involved should work together.

J. Wheeler acknowledged this.

Question from J. Wheeler, RAB Member –All RAB members have remained open to these discussions, but ultimately when someone raises an issue outside of the RAB's scope, we cannot really address it. If JHU concludes that the health and disease history of the Spring Valley community are normal compared with the rest of the population nationwide, must we as a RAB continue to address this topic?

M. Pritzker replied that the original JHU health scoping study concluded that there was no evidence of any health issues, and that the health of the Spring Valley community was consistent with or better than nationwide health statistics. Conclusions of this study included recommendations for follow-up efforts focused on specific topics and specific areas. The current JHU follow-on health study is simply a follow-up effort that is funded by DDOE, addresses the original health scoping study recommendations, and is approaching completion.

J. Sweeney added that as far as DDOE is concerned, all of these efforts ultimately work to protect human and environmental health, thus reflecting DDOE's mission. All regulatory standards for environmental restoration are health-based. DDOE feels that the follow-on health study was necessary, and is looking forward to the study results and conclusions.

Comment from W. Krebs, RAB Member – The guidelines shared by G. Vassiliou are accurate, but they overlook the unique nature of Spring Valley due to the residential community co-located with the FUDS boundary. If human health issues are brought up for discussion, or if the health study identifies a history of increasing disease, then these topics are part of the issues that will be addressed and mitigated by Spring Valley FUDS environmental cleanup efforts. If no risks are identified by the health study, then at least this issue has been addressed by the community. I personally think that these risk issues fall within the RAB’s scope because these risks affect the Spring Valley community co-located with the FUDS.

Comment from L. Monsein, RAB Member – P. Dueffert was correct in that technically, as a RAB, we are supposed to focus on environmental restoration, but none of the RAB members have complained about discussing other topics. L. Miller’s earlier question was crucial; he asked whether the follow-on health study will provide exposure-based data for identifying impacts to residents. Recall that M. Fox from JHU stated that the follow-on health study is a general assessment and does not provide specific data about health risks. Personally, I have been stating this for the past few years. I am comfortable with the follow-on health study because it is clear what our responsibilities are as a RAB; the USACE is not responsible for this type of health assessment and thus they did not provide funding; and the District of Columbia (DC) provided the funding in response to community member requests.

#### **IV. Open Discussion and Agenda Development**

##### **A. Next Meeting: Tuesday, March 12, 2013**

Upcoming meetings will be held in March and April 2013.

RAB meetings are not held in August or December.

##### **B. Future agenda topics**

- Risk Assessment Review (TBD)
- Details of Munitions and Explosives of Concern Hazard Assessment (MEC HA) (March 2013)
- Groundwater Study Conclusions To Date (TBD)
- Update on the ATSDR Health Consultation for 4825 Glenbrook Road (TBD)
- Future Frequency of RAB Meetings (TBD)

#### **V. Public Comments**

Question from A. Hengst, Audience Member – Is this our last opportunity to share public comments and questions during tonight’s meeting?

D. Noble said yes.

Comment from Lauren Mara Miller, Audience Member – Has anyone else here, besides myself, lived in Spring Valley since they were a child? I am here as an audience member with professional experience as a hospice worker, because it has come to my attention that several children who lived within a 4-block radius of AU’s campus are now deceased, and I myself am very ill. I would like to applaud the RAB’s focus on the follow-on health study. I think this topic is crucial for understanding what has and has not occurred in this neighborhood, and this topic needs to be evaluated across generations, as many long-time Spring Valley families have lost young children. It is possible that these deaths were unrelated to AUES activities, and maybe these children played in the same location, but I do not think that it is possible to consider the future children of Spring Valley without evaluating health. It is very disturbing to witness a generation of children die young within a relatively limited radius of 4 to 5 blocks.

Comment from A. Hengst, Audience Member – At the January 2013 RAB meeting, USACE mentioned that they had contacted Bethany Bridgham to find out who built the AU Public Safety Building, in support of the ongoing Potentially Responsible Party (PRP) investigation.

[Details of the PRP investigation were provided at the January 2013 RAB meeting.]

B. Barber clarified that the USACE Baltimore District Consult contacted Bethany Bridgham, the AU attorney who is familiar with the Spring Valley project, to inquire about information or knowledge with respect to the construction of the Public Safety Building.

A. Hengst noted that at the January meeting, L. Largo said that AU did not know who built the Public Safety Building.

L. Largo clarified that she said she personally does not have that information.

Question from A. Hengst, Audience Member – When do you expect to find out who constructed the AU Public Safety Building? Have you made any progress with this inquiry since the January 2013 RAB meeting?

B. Barber explained that the lengthy PRP investigation began in January 2013 and will be handled by legal counsel for USACE and AU. Information on the post-AUES development of the AU Public Safety Building, once obtained, will be shared with the RAB and the community as appropriate.

A. Hengst asked how soon he can ask for an update on this topic.

No specific response was provided.

No additional public comments or questions were shared.

G. Beumel thanked everyone for attending.

## **VI. Adjourn**

The meeting was adjourned at 8:46 PM.